

**The London School of Economics and Political
Science**

*Constructing Public Statistics: The History of the
Argentine Cost of Living Index, 1918-1943*

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A thesis submitted to the Department of Economic History of the London
School of Economics for the degree of Doctor of Philosophy.

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Declaration

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Abstract

Statistics contribute to the understanding of events by objectifying phenomena, as they are perceived to reflect or be an approximation of reality. This perception is based on the premise that statistical tools are straightforward, apolitical facts. However, quantification and its results are not objective. Definitions are needed beforehand to determine the phenomenon to be measured and the aim of the quantification. Thus, statistics face debates on methods, interpretation and use. Using the Argentine cost of living indices released in 1918, 1924 and 1935 as a case study and following a process of de-construction/construction/re-construction of the series, this thesis studies how, why and by whom statistics are made and used. It suggests that the political economy plays a crucial role in the history of the Argentine cost of living index in the first half of the twentieth century. In the de-construction phase, the thesis analyses various reports to arrive at an understanding how the indices were originally estimated. The construction stage then discusses the people and institutions involved in the production of each index and the methodology that they used, placing both within the political, economic and social context. It looks at how and why each index was produced by analysing their context, uses, contemporary reception and significance. Moreover, the pitfalls that come from the assumptions and methods underlying the indices are demonstrated using data available to those who produced them. Lastly, each CLI estimate is re-constructed by correcting its main pitfalls using the information available when the series were initially developed to depict how different assumptions result in different series. This leads to an alternative cost of living index being presented for the period 1912-1943. The re-construction also comprises a comparison in tandem of the Argentine, US, British and German cost of living indices.

To Abu Carlos, Abu Nelly and Tisi.

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Abbreviations

Argentine Confederation of Commerce, Industry and Production (*Confederación Argentina de Comercio, Industria y Producción*), **CACIP**

Argentine Industrial Union (*Unión Industrial Argentina*), **UIA**

Argentine Rural Society (*Sociedad Rural Argentina*), **SRA**

Bulletin of the National Labour Department (*Boletín del Departamento de Trabajo*), **BDNT**

Bureau of Labor Statistics, **BLS**

Bureau of Social Statistics (*Dirección de Estadística Social*), **DES**

Consumer price index, **CPI**

Cost of living index, **CLI**

First National Statistical Conference (*Primera Conferencia Nacional de Estadísticas*), **PCNE**

General Bureau of Statistics (*Dirección General de Estadística de la Nación*), **DGEN**

General Bureau of Railways (*Dirección General de Ferrocarriles*), **DGFFCC**

General Confederation of Labour (*Confederación General del Trabajo*), **CGT**

Gross domestic product, **GDP**

Hispanic-American Electricity Company (*Compañía Hispano Americana de Electricidad*), **CHADE**

Inter American Statistical Institute, **IASI**

International Conference of Labour Statisticians, **ICLS**

International Labour Conference, **ILC**

International Labour Organisation, **ILO**

International Labour Review, **ILR**

International Statistical Congress, **ISC**

International Statistical Institute, **ISI**

Labour and Social Welfare Secretariat (*Secretaría de Trabajo y Previsión*), **STyP**

National Department of Labour (*Departamento Nacional de Trabajo*), **DNT**

National Institute of Censuses and Statistics (*Instituto Nacional de Estadísticas y Censos*), **Indec**

Newsletter of the National Labour Department (*Boletín Informativo del Departamento de Trabajo*), **BIDNT**

Office for National Statistics, **ONS**

Professional Organisation Leadership (*Jefatura de Organización Profesional*), **JOP**

Radical Party (*Unión Cívica Radical*), **UCR**

Reich's Statistical Office, **RSO**

Retail price index, **RPI**

Review of Argentine Economics (*Revista de Economía Argentina*), **REA**

Statistics Division (*División de Estadística*), **DE**

Social Investigations (*Investigaciones Sociales*), **IS**

World War I, **WWI**

World War II, **WWII**

Chapter I - Introduction

Statistics should reflect reality or be an approximation of it. However, for Alain Desrosières “‘reality’ is informed by the fairly unconscious intermingling of several attitudes to reality”,¹ which vary according to context. The underlying aim of statistics is to understand and explain events by objectifying phenomena, becoming, according to Nelson Senra, “complex objectifications, which reveal previously thought-out, idealised realities”.² Statistical institutions are also research centres, which follow scientific and technological values, procedures and perspectives specific to their disciplines. Regarding public statistics, Simon Schwartzman argues that these institutions are also subject to the rules, regulations, values and restrictions of the public sphere.³ Thus, the construction and use of statistics increases knowledge and understanding, and also helps design policies. Since the late-nineteenth/early-twentieth century, nation-states have produced and relied heavily on statistics, to the extent that a government’s performance began to be evaluated by what numbers (do not) show. These assessments are based on the premise that statistical tools are straightforward, apolitical facts. The widespread incorporation of statistics into public life followed, in Thomas Stapleford’s words, “an attempt to depoliticise large swaths of public and private administration through rationalisation”.⁴

Consequently, research on the production and use of public statistics is a worthwhile goal in itself. This thesis illustrates the construction, systematisation and use of statistics by employing two estimates of the Argentine cost of living index (CLI) as a case study: the foundational indicator, released privately in 1918 and publicly in 1924, and the index published officially in 1935. How and why were these two estimates produced and how did they differ? In what economic and social context and by who were they elaborated? What were the implications of the assumptions followed in each case? What were their strengths and pitfalls? How do re-constructed series compare to the official ones? What does the history of the Argentine index suggest about the history of CLIs in general? To answer these country-specific questions, this thesis builds on the sociology of quantification literature by

¹ A. Desrosières, ‘How Real Are Statistics? Four Possible Attitudes’, *Social Research*, 68:2, 2001, p. 339.

² N. Senra, ‘As instituições estatísticas como centros de ciência, uma (r)evolução necessária’, *Estatística e Sociedade*, 1, 2011, p. 52, author’s translation.

³ S. Schwartzman, ‘Legitimidade, controvérsias e traduções em estatísticas públicas’, *Teoria & Sociedade*, 2, 1997, p. 9.

⁴ T.A. Stapleford, *The Cost of Living in America: A Political History of Economic Statistics, 1880-2000*, New York, 2009, p. 9.

starting from the premise that statistics are “historical sources”.⁵ It introduces a de-construction/construction/re-construction methodology to develop the history of the Argentine CLI between 1918 and 1943. This three-step procedure, which includes an in-depth analysis of the way in which the CLI estimates were produced and generates a new index, provides a new dimension to the general as well as to the country-specific literature on the history of public statistics.

Statistics can be perceived as facts detached from producers and users that are unproblematic and certain. Using Bruno Latour’s terminology,⁶ statistics are ready-made science. De-constructing/constructing/re-constructing statistics means examining how science is made, analysing simultaneously context and content to show that quantification and its results are not objective, even though they are usually perceived as such. Why are statistics not objective? Hernán Otero claims that statistical tools are a “discourse, an intellectual construction about the functioning of society”.⁷ To be elaborated, definitions are needed *a priori* to determine the phenomenon to be measured and the aim of quantification. Based on them, statistics are operationalised (measured). Thus, all statistics face debates about methods, interpretation and use. Moreover, whether published by public or private organisations, statistics are produced by humans who, despite their knowledge, make judgments based on their own ideas and understanding. Individuals are prone to make mistakes, especially when calculations had to be done with very basic instruments, as was the case in the early twentieth century. Moreover, for public statistics in particular there are political reasons behind their development. Statistics, especially economic and social statistics, are a foundational backbone of modern government. However, most citizens live in a “comfortable ignorance” as they are unaware of how the numbers are produced.⁸ Poor numbers, nonetheless, are bad in themselves: they provide misleading knowledge that generates unreliable conclusions.⁹

This thesis focuses on the production and use of CLIs, a statistic generally developed by a public agency. These indices measure the standard of living and the purchasing power of

⁵ A.J. Tooze, ‘Trouble with Numbers: Statistics, Politics, and History in the Construction of Weimar’s Trade Balance, 1918-1924’, *The American Historical Review*, 113:3, 2008, p. 683.

⁶ B. Latour, *Science in Action: How to Follow Scientists and Engineers Through Society*, Cambridge:MA, (1987) 2003, pp. 3-4.

⁷ H. Otero, ‘Crítica de la razón estadística. Ensayo de formalización teórica-metodológica del paradigma censal en la Argentina moderna’, in H. Otero (ed.), *El mosaico argentino. Modelos y representaciones del espacio y de la población, siglos XIX y XX*, Buenos Aires, 2004, p. 305, author’s translation.

⁸ Stapleford, *The Cost*, p. 1.

⁹ M. Jerven, *Poor Numbers: How We Are Misled by African Development Statistics and What to Do about It*, New York, 2013.

a currency.¹⁰ With respect to CLIs, the United States' National Industrial Conference Board believes that "in probably no other field of statistical inquiry is knowledge of the basis and general nature of the calculations so essential to prevent misinterpretation and confusion".¹¹ Why? CLIs allow indexation, which has been described as "the most extreme use of economic statistics in political life".¹² Indexation makes government tasks technical and administrative, eliminating its political responsibility in any activity related to that procedure, such as adjusting tax brackets, poverty thresholds and wages. Perceived as a rational method, free from the imperfections of political negotiations, it is used to promote administrative efficiency. It is portrayed as a superior solution relative to others, as it restricts "action to allegedly reasonable rules that are grounded on objective, empirical knowledge".¹³ Thus, the influence of a CLI appears to ignore the possibility that experts disagree about its accuracy, attaching "seemingly arcane technical debates about statistical calculation and economic theory with enormous financial weight",¹⁴ given its financial, economic and welfare implications. The decision to index an economic variable and what to index it against is a highly-politicised choice in itself. Moreover, in countries that have experienced high price increases, the index has become fundamental when evaluating government performance.

To understand the aims of this research, however, a general background regarding the study of statistics is necessary.

A survey of ideas

The history of statistics, also known as the sociology of quantification or sociology of statistics, became an important research topic in the late 1980s. Since then, general and country-based studies have flourished. The discipline analyses how statistics develop together with public and private efforts to organise and control society. Sociology of quantification is conceived as a "theoretical-cum-practical pursuit",¹⁵ where scientific, administrative and political aspects are closely related. For Jean-Guy Prévost and Jean-Pierre Beaud, this view differs from the internal history of statistics as a mathematical discipline and from official

¹⁰ Chapter II explains the differences and argues that the use of the term CLI is determined historically. This assertion and the relationship between CLIs, consumer price indices and inflation are also explained there.

¹¹ National Industrial Conference Board, *The Cost of Living in the United States*, New York, 1926, p. v.

¹² Stapleford, *The Cost*, p. 5.

¹³ *Ibid.*, p. 5.

¹⁴ *Ibid.*, p. 3.

¹⁵ J.G. Prévost and J.P. Beaud, *Statistics, Public Debate and the State, 1800-1945: A Social, Political and Intellectual History of Numbers*, London, 2012, p. 6.

histories of national bureaus of statistics.¹⁶ Some of its main precepts and the reasons why they speak to this thesis are reviewed in this section, after explaining why the construction of numbers should be assessed. The combination of the sociology of quantification literature and the need to be sceptical about numbers encourages the de-construction/construction/re-construction methodology pursued here.

Mickey Mouse numbers

In *Mickey Mouse Numbers in World History*, D.C.M. Platt analyses the sources of historical statistics to demonstrate that they trace back to a small number of authors and initial estimates, which, for him, are weak and sometimes lack references. He shows how dubious statistics travel through time to become conventional wisdom. Platt questions statistics in general. In particular, he claims that public statistics, usually considered superior because “official figures appeal to official minds”,¹⁷ mirror government policy. He also criticises the numbers produced by international institutions like the League of Nations and the United Nations, which “acquire the stamp of authenticity by provenance alone”.¹⁸ Moreover, Platt states that certain numbers are put together to engage in political polemic and are subject to the judgments of the compiler.

Platt suggests caution and doubt to avoid the careless and casual usage of statistics in historical studies. The problem with bad statistics is twofold. On the one hand, it relates to generalisations and how numbers are used without being examined, under the belief that they are accurate and are thus employed to construct theories. In that regard, the issue is not the number *per se*, but the analysis that unfolds from its use. On the other, it links to the re-publication of figures as “gigantic data banks from which, in time, information is generously and unquestioningly extracted”.¹⁹

It is in Platt’s spirit that this thesis is written, as it shows how statistics are affected by the shortage of information, the judgment of compilers and/or political motives. Even though Platt solely focused on GDP, population and trade numbers, his argument applies to statistics in general, including CLIs. Indeed, he synthesises ideas that sociology of quantification scholars theorise about and that are at the heart of this thesis. Without acknowledging Platt, Adam Tooze argues in an essay on the “trouble with numbers” that statistics are historical sources, so how they were developed, as well as the contemporary debates in which they

¹⁶ Ibid., p. 2.

¹⁷ D.C.M. Platt, *Mickey Mouse Numbers in World History: The Short View*, Basingstoke, 1989, p. 7.

¹⁸ Ibid., p. 26.

¹⁹ Ibid., p. 3.

were involved, must be investigated.²⁰ By producing his own series, he claims that when different estimates are used in an analysis, conclusions can vary. Encouraged by Tooze's and Platt's proposal to be sceptical about numbers, this research looks at the Argentine cost of living estimates with caution, revealing their pitfalls in order to develop sounder series.²¹

Similar to Tooze and Platt but from a social history perspective, Joan Wallach Scott shows how statistical reports are "neither totally neutral collections of fact nor simply ideological impositions. They are ways of establishing the authority of certain visions of social order, of organising perceptions of 'experience'".²² These documents depict how visions of reality are elaborated and revised. Even if descriptions appear as fixed and absolute, their contents imply questioning as they implicitly portray debates and discussions in which their authors aim to have the final word. Reports become political discourse as "they provide valuable insight into the processes by which relationships of power are established, exemplified, challenged and enforced".²³ If they are used without questioning, there is an unavoidable persistence of a specific idea of the economy and of statistical science as fundamentally objective, making historians "an unwitting party to the politics of another age".²⁴ Scott proposes that these documents should be challenged and read as a constituting part of the reality they aim to describe. Statistical reports should therefore be seen as objects of study in themselves, which is an assumption followed in this thesis. Scott's account of statistical reports is even more relevant when they are produced by government agencies and/or by public figures, such as the reports this thesis focuses on.

Avalanche of numbers and making up people

One of Ian Hacking's main ideas in *The Taming of Chance* is that statistical data was developed to exercise social control and power. For him, the "avalanche of numbers" that began at the end of the Napoleonic era related to the erosion of determinism in the nineteenth century, its replacement by laws of chance, and the invention of normalcy and deviation from the norm.²⁵ To believe in the laws of chance, law-like statistical regularities needed to be established. For statistical laws to be noticed, social phenomena had to be enumerated,

²⁰ Tooze, 'Trouble with Numbers'.

²¹ Another account of the need to be sceptical about numbers and the way they are produced, particularly those used by economic historians, is that of F. Boldizzoni, *The Poverty of Clio. Resurrecting Economic History*, New Jersey, 2011.

²² J.W. Scott, 'A Statistical Representation of Work. La Statistique de l'Industrie à Paris, 1847-1848', in J.W. Scott, *Gender and the Politics of History*, New York, 1988, p. 115.

²³ Ibid., p. 115.

²⁴ Ibid., p. 137.

²⁵ I. Hacking, *The Taming of Chance*, Cambridge:UK, (1990) 2010, p. 5.

tabulated and made public. Averages and dispersions gave birth to the idea of normal people, deviance and moral statistics. Statistical laws of society, regarded as laws in their own right, were conceived and a new kind of objective knowledge developed. As Hacking explains, initially laws had to be read into the data, as they could not simply be read off them.

Hacking claims that science contributes to the creation of kinds of people that were at some point inexistent. For individuals to be counted, categories had to be invented. The systematic collection of data influenced the way in which society is conceived as well as how one describes others, which Hacking refers to as “making up people”.²⁶ There are “looping effects”, as quantification and categorisation transform the actions of individuals, their aspirations and the way they think of themselves.²⁷ For example, although the idea of the number of people in a city or country is certain, an exact notion of population is needed beforehand to then be able to quantify it. In turn, institutions are needed for determining and establishing how population is defined. Social classes, for example, are social constructions and statistics play a fundamental role in their making.

Hacking stresses the relevance of context in the development of statistics, a premise on which this thesis is based. Since enumeration requires categorisation, Hacking’s underlying idea is that subjectivity and judgement are part of the quantification equation. His concept of the avalanche of numbers in search for social control can help explain why several statistics that contributed to the making up of the working class began to be collected in the 1920s and 1930s in Argentina, as the class was becoming a crucial protagonist and it had to be understood. Given that the Argentine CLIs were related to this class, especially in the 1930s, explaining how and by whom they were elaborated contributes to understanding how the government conceived of this class.

Numbers as technology of distance

In *Trust in Numbers* Theodore Porter argues that numbers, graphs and formulas are strategies of communication.²⁸ However, communication is not a law of nature; it depends on the community and the social identity of researchers. As he explains, numbers, as summaries of events and transactions, allow results to be presented in a familiar and standardised form, which can be understood far from where the numbers were produced. The language of quantity is unique because it is a “technology of distance” based on mathematics, a synonym

²⁶ I. Hacking, ‘Making Up People’, in T. Heller et al. (eds.), *Reconstructing Individualism*, Palo Alto, 1986, pp. 222-36.

²⁷ I. Hacking, ‘Making Up People’, *London Review of Books*, 28:16-17, 2006, p. 23.

²⁸ T.M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*, Princeton, 1995.

for rigour and universality.²⁹ Given the extensively spread rules for collecting and manipulating numbers, they can be easily transported across space, exceeding the boundaries of locality and community, without the need for intimate knowledge and personal trust.

According to Porter, numbers are subjective. However, given the way they are communicated, they appear as a highly disciplined discourse, not linked to the knowledge of the people who produce them. Objectivity as exclusion of judgement is a landmark of science, and is a strategy for dealing with distance and distrust. The idea of technology of distance indicates that “quantification is preeminent among the means by which science has been constructed as a global network rather than merely a collection of local research communities”.³⁰ A decision supported by numbers has at least the appearance of being fair and impersonal. Scientific objectivity provides answers to a moral demand for impartiality and fairness, giving authority to those who do not have it for themselves and by making decisions without seeming to decide.

Why is Porter important to this thesis? His idea of numbers as strategies of communication shows how statistics are constructions and conventions, subject to norms established by individuals. As such, if conventions/constructions, ideas and/or individuals change, so do the procedures behind statistics and their uses. As trust is placed in procedures, institutions and individuals, analysing the processes, organisations, ideas and people behind the estimates becomes crucial. Since statistics are technologies of distance, gatherings of statistical experts are also crucial actors in the construction of statistics. Following Porter, this thesis suggests that in Argentina quantifying workers’ standard of living, which was particularly relevant to the elaboration of a CLI in the 1930s, was a search for objectivity to deal with the mutual distrust and distance between the state and this emerging social class.

Politics and numbers

In *The Politics of Large Numbers* Desrosières explains how modern statistics derives from combining scientific and administrative state practices. The aim of statistics is to “provide a summarised description of them [situations] that can be remembered and used as a basis for action”.³¹ To achieve this, a political space of equivalence and encoding must be constructed together with mathematical processing. For Desrosières, statistics are formalised, synthetic concepts, which are enclosed in concise formulas, “even though these tools are the result of a

²⁹ Ibid., p. ix.

³⁰ Ibid., p. ix.

³¹ A. Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning*, Cambridge:MA, (1993) 1998, p. 13.

historical gestation punctuated by hesitations, retranslations and conflicting interpretations”.³² They are scientific constructs that facilitate individuals to look at facts as things, backing-up scientific and political arguments.

Desrosières argues that the development, unification and administration of the state are connected with statistics. These processes involve the installation of general forms, of categories of equivalence and terminologies that transcend particularities. There is a feedback relationship between statistical work and administrative activity. The creation of a political space is needed to generate common measurement. What links the worlds of science and practice is the task of objectifying, “of making *things that hold*, either because they are predictable or because, if unpredictable, their unpredictability can be mastered to some extent, through calculation of probability”.³³ Stability encourages the establishment of comparisons and equivalences, along Hacking’s notion of statistical laws. This allows for a description to be assimilated into a story that generates stability and predictability through time and space, that is, Porter’s idea of technologies of distance. The notion of making things that hold is present in Silvana Patriarca’s analysis of nineteenth century Italian statistics, where she conceived of it as a mode of representation due to the hegemonic status statistics attained.³⁴ As such, both Patriarca and Desrosières believe that statistics has its own dynamics.

Desrosières demonstrates how statistics holds its convincing power given its links with science and the state, which is a crucial premise of this research. The feedback relationship between state and statistics shows the relevance of the latter in shaping state capacities, enhancing, in turn, the need to research how statistics are produced and used, given their subjectivity. This thesis demonstrates how the notion of making things that hold, similar to Hacking’s idea of making up people, is fundamental in the analysis of CLIs and how they endure.

Census making

Bruce Curtis’ *The Politics of Population* analyses the mutual constitution of state and knowledge *à la* Desrosières. It also depicts the power relations contained in investing social relations in statistical forms through the analysis of Canadian censuses. For Curtis, census making, rather than census taking, determines social relations so that they can be known,

³² Ibid., p. 2.

³³ Ibid., p. 9, original italics.

³⁴ S. Patriarca, *Numbers and Nationhood: Writing Statistics in Nineteenth-Century Italy*, Cambridge:MA, 1996, p. 2.

governed, specified and disciplined; instead of being a report of “social relations existing in a pristine condition”.³⁵ Curtis explains that Canadian census making was initially hampered due to the lack of consistent imaginary social relations. The idea of population emerged when trying to configure social relations to arrange and reflect them. Such a notion is “a way of organising social observations”, which “has come to sustain remarkably powerful ways of gaining purchase on dimensions of social life, by ‘investing’ social life in governmental and administrative forms”.³⁶ This follows Hacking’s idea that categories have to be invented before quantification can take place. Successful statistical investments generate either things that hold or actionable objects, which, as Porter explains, can travel from localities to distant sites. This implies, once again, that statistics do not flourish in a vacuum, as particular circumstances and processes are needed for the numbers to hold and create representations.

Census making becomes a practice of state formation by disciplining relations and centralising knowledge. Census making is, consequently, a political activity and an object of political struggle, as contenting and conflicting social imaginaries are disputed by different social or political groups. For Curtis, such conflicts are relevant given that they show how the notion of population is depicted conceptually before its measurement. Census making is also a scientific activity, as it relies on the implementation of the organisational and observational activity, denominated infrastructural work. This task “involves the design and operationalisation of conventions of observation, reporting, and recording – conventions that are intended to isolate relevant aspects of essentially transient and mobile social relations and to freeze them in the cells of a census schedule”.³⁷ Infrastructural work translates the ideas of state officials about social relations into practical observations and measures. Systematic social observations rely on the previous creation of a common understanding of the aim, the objects and the procedures of the enquiry. Investment in social forms comprises theoretical preconditions for practical interventions, which in turn depend on infrastructural work. When investment in forms and infrastructural work are successful, statistics become apparent and commonsensical, or ready-made science.

For Curtis, independent knowledge of the object of investigation is needed to shed light on the criteria for determining the accuracy of accounts. What has to be evaluated is the internal consistency of observational practices. However, consistency cannot be fully associated with empirical accuracy. All post-observational work should be made apparent to

³⁵ B. Curtis, *The Politics of Population: State Formation, Statistics, and the Census of Canada, 1840-1875*, Toronto, 2001, p. 33.

³⁶ *Ibid.*, p. 24.

³⁷ *Ibid.*, p. 32.

examine the whole process to unveil potential interpretative discretion. Specifically, he explains that if the practices documented have not been first disciplined in a particular way, informants may not supply the information at all or in the form the enumerators want.

Using a case study similar to that presented in this thesis, Curtis puts into practice the concepts of Hacking, Porter and Desrosières, making his work a model for this research. Even if he focused on censuses, many of his ideas can be transferred to statistics in general and household surveys in particular. Thus, this thesis embraces Curtis' notion that making a population implies investing in governmental and administrative forms by transferring it to the working class and within the working class, with its standard of living measured through the CLI. As such, this research does not explain the surge of the Argentine working class, but a particular aspect of it conceived in a specific way, since venturing into this sphere helps understand the history of the Argentine CLI. The need of a project capable of generating statistics that hold and the requirement of a representation of the population contribute to understanding that history. Specific conditions, like the novelty and organisation of the working class in Argentina in the 1930s in the context of urbanisation and industrialisation, contributed to the development of a CLI that persisted. The examination of the pitfalls of the CLIs focuses on the internal consistency of observational practices, not on the accuracy of the numbers. To analyse that consistency in detail the CLI must be de-constructed/constructed/re-constructed.

CLIs as public statistics

Linking statistics and politics, another case study that follows the sociology of quantification literature is Stapleford's technical and political economy analysis of the *The Cost of Living in America*.³⁸ His main conclusion is that politically-relevant judgements drench the process of statistical calculation all the way down to the methodological level. The strict separation of the political and the technical spheres used to justify rationalised governance does not exist and the political consequences of choices cannot be evaded, meaning that numbers are not neutral.

Stapleford believes that CLIs are crucial attempts to rationalise governance and to depoliticise decisions.³⁹ This is interpreted in this thesis as the reason why he chooses such an

³⁸ Stapleford, *The Cost*.

³⁹ US census apportionment was perceived as an objective and de-politicised mechanism to determine representation and taxation. As politics influenced the census, US census history shows how apportionment did not live up to its depoliticisation objective, see M. Anderson, *The American Census: A Social History*, Ann Arbor, 1988.

indicator, becoming, as argued above, a rationale for selecting the CLI here as well. How can rationalisation through the use of statistics exist? Stapleford identifies two reasons. On the one hand, statistics make aggregate concepts tangible, as they are constructions. On the other, statistical tools are a form of rationalised knowledge-making, a collection of formal and informal rules and techniques that compile data and judge its reliability. For that reason, the development of statistics is parallel to the efforts by the state and private entities to organise and control the environment using logical means.

This thesis believes that the production, systematisation and use of statistics in general and the CLI in particular must be comprehended through the de-construction/construction/re-construction methodology. Why? Despite being perceived as a straightforward operation, Stapleford argues that rationalisation cannot deliver its promise of an apolitical, neutral form of governance and knowledge because all measurements and calculations depend on the previous establishment of objectives. For Stapleford, when statistics are produced by the state, the choice of objectives requires political choices. When measurement and calculation face challenges from those with different political perspectives, “to choose between possible interpretations is to choose between competing objectives for a given calculation, and thus to make what is necessarily a political choice”,⁴⁰ even if political reasoning is not factored into the decision. In the case of economic statistics, when different definitions exist, economic theory can help clarify issues and provide a logic to judge their coherence. However, Stapleford demonstrates that the matter remains unsolved. The use of economic theory appeals to applications where normative judgments are less obvious, less important, or less controversial. However, “a full specification of the proper methods for a statistical calculation requires a full specification of its objectives down to a high level of detail, which means that judgments with political valences extend all the way through the calculation process”.⁴¹ For Stapleford, this runs against the goal of depoliticisation through rationalisation.

Stapleford explains that two alternatives existed in US CLI history. Initially, CLIs focused on comparing incomes to an ‘adequate’ cost of living, in order to judge the sufficiency of incomes. This measure was dependent on normative judgements regarding what was a satisfactory cost of living. The other measure implied establishing the cost of reaching a given standard of living in two time periods, generating index numbers. This second alternative may seem free of normative judgments, but as Stapleford argues, the apparent distinction is erroneous because ambiguities also proliferate with index numbers. He

⁴⁰ Stapleford, *The Cost*, p. 8.

⁴¹ *Ibid.*, p. 9.

exemplifies his point by posing two questions: “how can one account for changes in the quality of goods or in tastes and in purchasing habits of consumers?”, and “should a CLI focus strictly on price changes or should it encompass an array of other shifts that might also alter such cost?”⁴² Important questions that emerge from this research and are relevant according to Stapleford are: how is the basket of goods determined and whose consumption preferences should that basket represent? In agreement with Stapleford, this thesis claims that universally valid and right answers to these questions do not exist. A ‘proper’ answer is linked to the uses and applications to which the index will serve. However, the methodology designed to match the application will invariably encounter questions for which there can be no apolitical answer. As the “choice between methodological options then requires reconsidering the objectives of statistical applications”,⁴³ this thesis acknowledges that the critiques of the two Argentine estimates and the decisions followed here in the elaboration of re-constructed indices are also debatable. The choices made in this research when assessing methodological pitfalls and when re-constructing the series are kept within the context and scope of the official estimates.

Like Stapleford, Rebecca Searle examines the British CLI within the wider context of economic, social and political histories, in order to show that price indices have remarkable economic power, and modifications to the way they are compiled have massive financial implications.⁴⁴ For Searle, CLIs are not a neutral statistical measure. Agreeing with Stapleford, she argues that the way such indices are estimated is a political decision. This thesis draws on their country-specific observations, embedding the analysis of the Argentine CLI in its own context.

After considering the need to be sceptical about numbers, this section has summarised the main ideas behind the sociology of quantification discipline, the theoretical framework in which this thesis is immersed. Practically all of these authors lack an analysis of non-core countries, which have experienced different economic and social processes. However, this can be justified on the premise that it was in developed nations where these ideas were established, while the least-developed ones tended to look beyond their frontiers. This lack of analysis leaves wide room to focus on the processes experienced by non-core countries. This

⁴² Ibid., p. 9.

⁴³ Ibid., p. 390.

⁴⁴ R. Searle, ‘Is There Anything Real about Real Wages? A History of the Official British Cost of Living Index, 1914-62’, *Economic History Review*, 68:1, 2015, pp. 145-66.

thesis specifically contributes to the literature that has already begun this journey.⁴⁵ Most of the authors consider statistics in general and put aside the richness of an analysis that one indicator provides. Of those that focus on a particular indicator, only Tooze produces a new series. In all works, there was little room, if any, for the possibility of human mistakes, which can happen, especially at the beginning of the twentieth century. All these works complement each other. As they are intertwined, they are considered here: Platt synthesises ideas of what the majority of the following authors theorise about; Hacking and Porter sketch the connection between statistics and politics; Desrosières examines it in more detail; Stapleford analyses this relationship in a history of US cost of living statistics. The works of Platt, Hacking, Porter and Desrosières are foundational, while Curtis, Stapleford and Searle take their concepts to analyse case studies.

This thesis will go beyond this literature by analysing historical statistics and determining their pitfalls. It demonstrates that official numbers can be perceived as apolitical, but methodological choices made and their deviation from an ideal procedure reflect not only political factors but also inaccuracy, lack of resources, and deliberate decisions. Because of the way sociology of quantification authors carry out their study, which does not include detailed analysis of the data, the discipline focuses mainly on the politics of statistics. Though this is crucial, mistakes could also be for apolitical reasons. The de-construction/construction/re-construction methodology highlights other factors that influence the production of numbers.

The Argentine CLI as a case study

Combining the premises of the sociology of quantification framework and the need to be sceptical about numbers, this thesis studies the production, systematisation and use of two Argentine CLIs – one released in 1918/1924 and the other in 1935 – using a three-step approach of de-construction/construction/re-construction. What are the characteristics of this three-step procedure? The methodology behind each Argentine estimate is hard to grasp by solely reading the report they were released in. Thus, peripheral articles that shed light onto the estimate must be analysed. The de-construction phase synthesises the information provided by core and peripheral articles and highlights elements that are explored later on. Using Scott's idea that statistical reports are in themselves objects of study,⁴⁶ the de-

⁴⁵ For example M. Loveman, *National Colors: Racial Classification and the State in Latin America*, New York, 2014.

⁴⁶ Scott, 'A Statistical'.

construction stage is followed by an analysis of the context, uses, contemporary reception and meaning of each estimate. Then, the pitfalls of the indices are examined. This is the construction step of the process and it is carried out to understand fully how and why each of these estimates was produced and used. This is not a judgement of the methods and assumptions made using today's yardsticks, as procedures have become increasingly sophisticated. It is an analysis of the assumptions and methods using data easily available to those that produced the estimates.⁴⁷ The construction is an investigation of the people and institutions involved in and the methodology behind the production of the indices, within the economic and social context. The third phase has two instances. First, each CLI estimate is re-constructed by correcting its main problems, utilising the information available when the series were developed to re-construct them as consistently as possible with the official series, depicting how different assumptions render different series. A new Argentine CLI for the years 1912 to 1943 is generated. The year 1912 is chosen because that is the first year of a series of rent data produced by the University of Córdoba's Statistical Institute (*Instituto de Estadística*, IE);⁴⁸ while 1943 is taken as the end date because it was a turning point in the history of the Argentine statistical system. A conclusion before the conclusion, the second part of the re-construction phase draws on the main aspects of the previous investigations by analysing the Argentine, US, British and German indices in tandem. This provides a greater understanding of the history of CLIs.

This research advances the understanding of the role, production, systematisation, use and history of numbers more broadly, especially official numbers, through an analysis of the ideas, institutions and individuals that produced the numbers. It enhances the sociology of quantification literature particularly by considering statistics as historical sources and proposing the three-step de-construction/construction/re-construction procedure. By employing one country and one statistic as a case study, the thesis also develops the history of the Argentine CLI during the first half of the twentieth century, thereby contributing to the wider literature on CLIs. It argues that, as with every case study, the Argentine index had particular characteristics, but also shared traits with its contemporary counterparts. Among the Argentine indicator's most important traits are its extensive sombre period (1925-1931) and its initial use as an economic indicator rather than as a wage-adjustment mechanism. As

⁴⁷ Unlike, for example, C. Minns and M. MacKinnon, 'The Costs of Doing Hard Time: A Penitentiary-Based Regional Price Index for Canada, 1883-1923', *Canadian Journal of Economics*, 40:2, 2007, pp. 528-60.

⁴⁸ See the Appendix to understand how the rent series was estimated.

the statistic is a public one, it also strengthens knowledge of national statistical systems,⁴⁹ especially of non-core countries. Specifically, this thesis is a contribution to the literature on the Argentine statistical system from its origins until the mid-1940s, following the sociology of quantification approach.⁵⁰ Why? Claudia Daniel, Hernán González Bollo and Hernán Otero, the main scholars that use this body of literature to study the Argentine case, analyse the formation, consolidation and rise of public statistics and the way they shaped government policy. The history of the Argentine CLI advances their views due to the centrality of the index within the statistical system and the importance of Alejandro E. Bunge and José Miguel Francisco Luis Figuerola y Tresols, the men behind each estimate. It suggests that the Argentine system, like the CLI, was subject to discontinuous progress, particularly in the 1920s, a characteristic overlooked by Daniel, González Bollo and Otero. Numbers are constructed by individuals with certain ideas who are part of specific institutions. The three-step methodology explores these elements, how they interact and how they change, providing new insights into them. For example, while the initial index was directly associated with Bunge, its designer, the second estimate was an ‘impersonal’ indicator, linked with the institution where it was produced. The relationship between Bunge and the CLI, this thesis suggests, partly explains the indicator’s sombre period. Moreover, the thesis sheds light, from the statistics angle, on the association between Argentina and the International Labour Organisation (ILO), which helped shape the history of the Argentine CLI.⁵¹ Hence, it analyses how Figuerola attached great relevance to the ILO in general and its statistical gatherings in particular to legitimise his work. The statistical dimension of the ILO/Argentina relationship, an unexplored element in the existing literature, is here brought onto centre stage. The re-construction of the estimate adds to the debate on the numbers produced and published on Argentina.⁵²

⁴⁹ For example Anderson, *The American Census*; A.P.R. Camargo, ‘Números para o progresso: um panorama da atividade estatística a Primeira Republica’, *Bulhões de Carvalho, um medico cuidando da estatística brasileira*, Rio de Janeiro, 11, 2007; Curtis, *The Politics*; Patriarca, *Numbers and Nationhood*; N.deC. Senra, *Historia das estatísticas brasileiras*, Rio de Janeiro, vol. 1-4, 2006, 2007, 2008, 2009; A.J. Tooze, *Statistics and the German State, 1900-1945: The Making of Modern Economic Knowledge*, Cambridge:MA, 2001.

⁵⁰ For example C. Daniel, ‘Un imaginario estadístico para la Argentina moderna’, *Cuadernos del IDES*, 17, 2009; H. González Bollo, *La fábrica de las cifras oficiales del Estado argentino (1869-1947)*, Buenos Aires, 2014; H. Otero, *Estatística y Nación. Una historia conceptual del pensamiento censal de la Argentina moderna*, Buenos Aires, 2006.

⁵¹ For example, N.O. Ferreras, ‘La construcción de una Communitas del Trabajo: las relaciones de la Organización Internacional del Trabajo (OIT) y América del Sur durante la década de 1930’, *Dimensões*, 29, 2012, pp. 3-21; F. Herrera León and P. Herrera González (eds.), *América Latina y la OIT. Redes, cooperación técnica e institucionalidad social (1919-1950)*, Morelia, 2012; M. Rappoport, *El laberinto argentino. Política internacional en un mundo conflictivo*, Buenos Aires, 1997.

⁵² J.A. Francis, ‘The Terms of Trade and the Rise of Argentina in the Long Nineteenth Century’, PhD diss., London School of Economics and Political Science, 2013, pp. 41-55; J.A. Francis, ‘(Mis)measuring Argentina’s

Why focus on the Argentine CLI as a case study? As mentioned, CLIs are crucial to understanding how statistics are constructions that must be analysed. For Stapleford, there is no universally valid and right way of determining a procedure to estimate CLIs because when constructing them ambiguities exist, and methods depend on the index's expected uses. Moreover, establishing a methodology raises questions and criticisms for which there can be no apolitical answers. Stapleford's reasoning can be applied to statistics in general, since sociology of quantification scholars argue that context shapes statistics. Based on these propositions, this thesis is grounded on the premise that statistical tools are not unique *per se*. They all deserve to be researched and understood as they are conditioned and determined by the context in, and the purpose for which, they are produced. Similarities and differences exist among national CLIs. Case studies must be analysed in their own right, given the specific economic, social and political background and the trajectory of the national statistical system, defined as the articulation of human resources, technical language, methodologies and tools that produce, distribute and use numerical information. Therefore, arguments arising from the sociology of quantification perspective validate the choice of the case study of this thesis. Context-related reasons, moreover, also make the Argentine CLI interesting. The Argentine index was released at the same time as others, but unlike its US, British and German counterparts, between 1918 and 1935 it alternated between being published privately and publicly. In 1918 it was first published in an economics journal, to be released officially in 1924. Its subsequent updates formed part of the journal once again. A 1932 presidential decree called for the elaboration of a new estimate, and since 1935 the CLI has been an official series. However, since January 2007, the official inflation index has been questioned (to say the least), leading to the production of alternative private estimates.⁵³ Similar to the US index,⁵⁴ after its official release the indicator entered what this thesis calls the sombre period of the Argentine CLI, although official estimates released later on have data for the 'missing' years (1928-1932). Why did the Argentine CLI have such an erratic trajectory in its origins? More specifically, why did it enter its sombre period not long after its official

Progress: Industrial Output, 1870s-1913', MPRA Paper No. 67621, 2015; L. Randall, 'Lies, Damn Lies, and Argentine GDP', *Latin American Research Review*, 11:1, 1976, pp. 137-58; A. Rayes, "'Bestias negras de la estadística". Las exportaciones argentinas "a órdenes" (1895-1913)', *Estatística e Sociedade*, 3, 2013, pp. 6-20; among others.

⁵³ After seven years of government intervention and of reporting lower-than-expected inflation, in January 2014 the National Institute of Statistics and Censuses (*Instituto Nacional de Estadísticas y Censos*, INDEC) launched a new price indicator to normalise its situation, see <http://www.economist.com/news/americas/21571434-fund-blows-whistle-motion-censure> and <http://www.economist.com/news/americas/21597020-will-countrys-statisticians-now-be-allowed-do-their-work-pricing-power> (accessed on March 22, 2014).

⁵⁴ Stapleford, *The Cost*, p. 55.

release? Answers to these questions and a deep understanding of the first two estimates of the Argentine CLI are obtained by considering the country's historical context, political economy and interactions between institutions, ideas and individuals. The interwar years were a fundamental period in Argentine history, as crucial shifts occurred. After a period of extreme economic openness, the closure of both the agricultural frontier – which not only impacted on agricultural output but also on social mobility⁵⁵ – and of international markets during WWI led to an incipient industrialisation.⁵⁶ These changes were not completely internalised by the ruling class, who still believed that the economy should function following the same premises that guided it before the international conflict. Industrialisation only started to be fostered by the state in the 1930s. Consequently, from the economic perspective, the incipient industrialisation of the late 1910s and 1920s is seen by some authors as a period of great delay and missed opportunity.⁵⁷ In those decades, the middle class rose, as did the working class, although to a lesser extent. In the 1930s, as a consequence of increasing urbanisation and industrialisation, the working class expanded and the state became more active in regulating the relations between labour and capital. This thesis argues that all these transformations explain the trajectory of the Argentine CLI, an indicator that was initially tied to the making up of the working class. Moreover, price rises have been a major issue of Argentine economic history especially, but not exclusively, since the second half of the twentieth century,⁵⁸ and particularly during the hyperinflation episodes of 1989 and 1991. Indeed, the index has become so relevant that it has been used as an indicator of the government's success or failure in overseeing the economy. Despite these characteristics, and unlike the list of GDP estimates that exist for different time periods,⁵⁹ as well as the recent questioning of the foreign trade figures,⁶⁰ the historiography that focused on the first half of

⁵⁵ R. Hora, *The Landowners of the Argentine Pampas: A Social and Political History, 1860-1945*, Oxford, 2003 (2001), pp. 133-76.

⁵⁶ J. Villanueva, 'El origen de la industrialización argentina', *Desarrollo Económico*, 12: 47, 1972, pp. 451-76

⁵⁷ G. Di Tella and M. Zymelman, *Las etapas del desarrollo económico argentino*, Buenos Aires, 1967.

⁵⁸ For works on relatively recent history see for example: M. Damill, and R. Frenkel, *Hiperinflación y estabilización: la experiencia argentina reciente*, Buenos Aires, 1990; G. Vitelli, *Cuarenta años de inflación en la Argentina*, Buenos Aires, 1986. For papers analysing previous periods see S. Amaral, 'El descubrimiento de la financiación inflacionaria. Buenos Aires, 1730-1830', *Investigaciones y Ensayos*, 37, 1988, pp. 379-418; S. Amaral, 'Alta inflación y precios relativos. El pago de las obligaciones en Buenos Aires 1836-1854', *Trimestre Económico*, 56:221, 1995, pp. 163-221; M.A. Irigoín, 'Inconvertible Paper Currency: Inflation and Economic Performance in Early 19th Century Argentina', *Journal of Latin American Studies*, 33:2, 2000, pp. 333-59.

⁵⁹ One of the first scholars to question GDP numbers was Randall, 'Lies'. For a summary of the existing series see Francis, 'The Terms of Trade', Appendix 1.1.

⁶⁰ Rayes, 'Bestias negras'; A. Tena Junguito and H. Willebald, 'On the Accuracy of Export Growth in Argentina, 1870-1913', paper presented at XVI World Economic History Congress, Stellenbosch, July 2012.

the twentieth century has systematically used the official CLI without questioning them, as shown in Figure 1.⁶¹

Figure 1: Different works on the Argentine and the source of the cost of living estimates they use⁶²

Work	Source of CLI used												
	Primary (P)				Secondary (S)								
	REA/BUNGE	DNT/IS	DNEC	Villanueva	Anuario Geográfico Argentino	della Paolera and Ortíz	Dorfman	Díaz Alejandro, 1981	Gerchunoff and Llach	IEERAL	Véganzonès and Winograd	Williamson	Williamson and Taylor
Cortés Conde, <i>El progreso</i> , 1979	P	P											
Di Tella and Zymelman, <i>Las etapas</i> , 1967	P	P											
Díaz Alejandro, <i>Essays</i> , (1970) 1983			P										
Gaudio and Pilone, 'El desarrollo', 1983		P											
Germani, <i>Estructura</i> , (1955) 1980		P											
Horowitz, <i>Argentine Unions</i> , 1990		P											
Íñigo Carrera, <i>La formación</i> , 2007	P	P											
Matsushita, <i>Movimiento obrero</i> , 1983		P											
Murmis and Portantiero, <i>Estudios</i> , 1971		P											
Vázquez Presedo, <i>Estadísticas</i> , 1988			P										
<i>Anuario Geográfico Argentino</i> , 1941		P											
Díaz Alejandro, 'Tipo de cambio', 1981			P										
Dorfman, <i>Historia de la industria</i> , 1970		P											
Villanueva, <i>The Inflationary Process</i> , 1964			P	P									
Williamson, 'The Evolution', 1995	P	P											
della Paolera and Ortíz, <i>Dinero</i> , 1995	P							S					
IEERAL, 'Estadísticas', 1986								S					
Gerchunoff and Llach, <i>El ciclo</i> , 1998						S							
Véganzonès and Winograd, <i>Argentina in the 20th Century</i> , 1997									S				
Williamson and Taylor, 'Convergence', 1994												S	
Cortés Conde, <i>The Political Economy</i> , 2009					S								
Ferreres, <i>Dos Siglos</i> , 2005.					S								
della Paolera, Irigoien and Bozzoli, 'Passing the buck', 2003						S							
della Paolera and Taylor, <i>Straining at the Anchor</i> , 2001						S							
Shipley, <i>On the outside</i> , 1977	P						S						
Cortés Conde, <i>Economía Argentina</i> , 1994								S					
Sturzenegger and Moya, 'Economic cycles', 2003									S				
della Paolera, Taylor and Bozzoli, 'Historical statistics', 2003										S			
Vitelli, <i>Los dos siglos</i> , 1999										S			
Galiani and Gerchunoff, 'The labour market', 2003											S		
Gerchunoff and Aguirre, 'La economía', 2006												S	
Salvatore, 'Better-off', 2010													S

Notes: DNEC=National Bureau of Statistics and Censuses (Dirección Nacional de Estadísticas y Censos); DNT= National Labour Department (Departamento Nacional de Trabajo); IS= Social Investigations (Investigaciones Sociales); REA= Review of Argentine Economics (Revista de Economía Argentina)

Source: author's elaboration.

Figure 1 follows Platt's argument in a stylised manner. It demonstrates that several authors studying Argentina reference official publications, such as the annual *Social Investigations* (*Investigaciones Sociales*, IS) of the National Labour Department (*Departamento Nacional de Trabajo*, DNT), or the DNT itself without a specific reference, as well as the 1963 report of the National Bureau of Statistics and Censuses' (*Dirección Nacional de Estadísticas y*

⁶¹ The selection criteria of the works in Figure 1 are that the piece must have a CLI or, alternatively, a real wage estimate with a specification of the source of the price deflator, for a significant part of the period considered in this research. The list is not comprehensive. It gathers some of the most important works, covering different approaches.

⁶² These references are presented in a different way in the Appendix.

Censos, DNEC).⁶³ The latter is the CLI's official publication after the household budget survey of 1960 and has an estimate for the years 1914 to 1960. A cross-check shows that the DNEC series corresponds to the long-term index published in a 1937 DNT report.⁶⁴ Although it is not an official publication, some authors quote the *Review of Argentine Economics* (*Revista de Economía Argentina*, *REA*) and/or Bunge's articles. He was the director of the *REA*, the economics journal where the CLI was first released and where regular updates were published throughout the 1920s. As for the works that reference non-official series or secondary sources, the most common are Gerardo della Paolera and Javier Ortíz's,⁶⁵ Carlos Díaz Alejandro's,⁶⁶ and IEERAL's,⁶⁷ among others highlighted in grey. As Figure 1 shows, both della Paolera and Ortíz, and IEERAL reference Díaz Alejandro,⁶⁸ who, in turn, relies on the DNEC series.

The conclusion that arises from Figure 1 is that, generally, authors looking at different angles of Argentine history always use the same cost of living estimate. The only exception is Javier Villanueva,⁶⁹ but his research is rarely referenced. Figure 1 demonstrates how Bunge's inaugural estimates merged with the DNT series released in 1935, then travelled through time via different publications. These numbers, which according to this thesis have several pitfalls, are taken for granted without proper analysis of how they were produced. In some cases,⁷⁰ they are used in econometric or statistical models to test different hypothesis. In Platt's words, then, "the thoughts and mistakes of one generation lead too easily to the conclusions of another".⁷¹

⁶³ DNEC, *Costo del nivel de vida en la Capital Federal. Encuesta sobre condiciones de vida de familias obreras realizada en el año 1960*, Buenos Aires, 1963.

⁶⁴ DNT, 'Condiciones de vida de la familia obrera', *Investigaciones Especiales. Serie C*, 8, 1937.

⁶⁵ G. della Paolera and J. Ortíz, 'Dinero, intermediación financiera y nivel de actividad en 110 años de historia económica argentina', *Documentos de Trabajo*, Universidad Torcuato Di Tella, 1995.

⁶⁶ C.F. Díaz Alejandro, 'Tipos de cambio y términos de intercambio en la República Argentina. 1913-1976', *Documentos de Trabajo CEMA*, 22, 1981.

⁶⁷ IEERAL, 'Estadísticas de la evolución económica de la Argentina, 1913-1984', *Estudios*, 9:39, 1986, pp. 103-84.

⁶⁸ della Paolera and Ortíz also reference the *REA* – probably for the years 1910-1913 that are missing in Díaz Alejandro – and another della Paolera work for before 1910, G. della Paolera, 'How the Argentine Economy Performed during the International Gold Standard. A Reexamination', PhD diss., University of Chicago, 1988.

⁶⁹ J. Villanueva, *The Inflationary Process in Argentina, 1943-1962*, Buenos Aires, 1964.

⁷⁰ Díaz Alejandro, 'Tipos de cambio'; S. Galiani and P. Gerchunoff, 'The Labour Market', in G. della Paolera and A.M. Taylor (eds.), *A New Economic History of Argentina*, Cambridge:UK, 2003, pp. 122-69; R.D. Salvatore, 'Better-off in the Thirties: Welfare Indices for Argentina, 1900-1940', in R.D. Salvatore, J.H. Coatsworth and A.E. Challú (eds.), *Living Standards in Latin American History*, Cambridge:MA, 2010, pp. 127-66; A. Sturzenegger and R. Moya, 'Economic Cycles', in della Paolera and Taylor (eds.), *A New Economic History*, pp. 87-113; J.G. Williamson and A.M. Taylor, 'Convergence in the Age of Mass Migration', *NBER Working Paper*, 4711, 1994.

⁷¹ Platt, *Mickey Mouse Numbers*, p. ix.

Understanding what statistical reports represent, and not taking them at face value, as Scott proposes, is fundamental for building a complete picture of the Argentine CLI. For that to occur, this thesis argues that the index must be de-constructed/constructed/re-constructed, putting together different reports, articles and ILO archival material, and making assumptions, as there is no straightforward methodological explanation of these CLIs. What does this suggest? Until this research, the CLI has been treated as ready-made science. This thesis, by contrast, considers it as science in the making, in order to obtain a complete, coherent image of it and the process behind its elaboration. Furthermore, this thesis is an advance within the sociology of quantification literature. While its authors take a crucial step, they fail to achieve their goal fully because they do not analyse the numbers produced by the national statistical system with the level of detail contained in this thesis. They interpret the context and the figures, they analyse the reports, but they do not dig deep into the methodological construction of the numbers, mainly focusing instead on the politics of statistics. Examining statistical organisations as a system of power and knowledge, as Hacking, Porter and Desrosières indicate, contributes to and must be complemented by the study of statistics as historical sources, as constructions and uses of particular facts, as Tooze suggests. This leads to a different interpretation than that found in the works of Daniel, González Bollo and Otero, whose studies on the Argentine statistical system help explain how the Argentine CLIs were produced and used. Two important differences exist between them and this research. While they have an overall positive view of the development of the Argentine statistical system in the first half of the twentieth century, the history of the Argentine CLI presented here paints a gloomier picture of discontinuous progress. In telling this story, moreover, the thesis presents novel insights into the public lives and the statistical production of the “prophets of national problems”, Bunge and Figuerola.⁷² What is more, the study also generates a novel CLI, just as Tooze develops new figures of the German trade balance.⁷³ A crucial finding is that the Argentine CLIs released in 1918/1924 and 1935 were not neutral. They were designed following the availability of data, political and practical decisions, the aims set by the ideas and actions of their designers, and the context in which they were developed.

Statistical reports and articles where the Argentine CLIs were released comprise the most important primary source of this research. To engage in the de-

⁷² J. Pantaleón, *Una nación a medida. Creencia económica y estadística en la Argentina (1918-1952)*, Buenos Aires, 2009, p. 25.

⁷³ Tooze, 'Trouble with Numbers'.

construction/construction/re-construction of the indices, these core materials are complemented by a wide range of other primary sources. From Argentina, official peripheral statistical reports and articles where the indices are also explained, works produced by Bunge and Figuerola, other publications of the statistical system, newspapers, pamphlets, books and articles from contemporary journals are crucial. The budget data from the CLI published in 1935, which has never been used before, is employed in the construction and re-construction of the indices, together with price data from official statistical publications. For the years 1933 to 1943, a newspaper price series is developed to be incorporated in the indices.⁷⁴ Archival material from the ILO is vital to understand the sombre period of the Argentine index and the Argentine/ILO relationship, while the findings from the London School of Economics library collections help examine the international penetration of the index. ILO journal articles and its reports also contribute. When the Argentine index is considered *vis-à-vis* its counterparts, official publications of the US and British national statistical systems are also analysed.

Notwithstanding the spotlight on the Argentine CLI, this thesis is not about Argentina *per se*. Nevertheless, given the topics and period considered, this research relates to several historiographical debates. Those interested in the origins of Peronism⁷⁵ might find new insights on the economic situation of the urban working class thanks to the re-constructed CLI, which is a sounder estimate than the official one. As the re-construction depicts a higher cost of living than what the literature assumes, all other things being equal, the impact of Peronism on workers' welfare would be greater. For that same reason, this research speaks to those engaged with the early years of the Argentine labour movement and the living conditions of the working class,⁷⁶ as well as to those concerned about the origins of the social

⁷⁴ See the Appendix for more details.

⁷⁵ As examples, see H. del Campo, *Sindicalismo y peronismo*, Buenos Aires, 1983; G. Germani, *Política y sociedad en una época de transición*, Buenos Aires, 1962; G. Germani, 'El surgimiento del peronismo: El rol de los obreros y de los migrantes internos', *Desarrollo Económico*, 13:51, 1973, pp. 435-88; J. Horowitz, *Argentine Unions, the State and the Rise of Perón, 1930-1945*, Berkley, 1990; D. James, *Resistencia e integración. El peronismo y la clase trabajadora argentina*, Buenos Aires, 1991; E. Kenworthy, 'Interpretaciones ortodoxas y revisionistas del apoyo inicial del peronismo', *Desarrollo Económico*, 14:56, 1975, pp. 749-63; H. Matsushita, *Movimiento obrero argentino 1930/1945. Sus proyecciones en los orígenes del peronismo*, Buenos Aires, 1983; M. Murmis and J.C. Portantiero, *Estudios sobre los orígenes del peronismo*, Buenos Aires, 1971; M. Peralta Ramos, *La economía política argentina: poder y clases sociales (1930-2006)*, Buenos Aires, 2007; P.H. Smith, 'The Social Base of Peronism', *The Hispanic American Historical Review*, 52:1, 1972, pp. 55-73; J.C. Torre (ed.), *La formación del sindicalismo peronista*, Buenos Aires, 1988; J.C. Torre, *La vieja guardia sindical y Perón: sobre los orígenes del peronismo*, Buenos Aires, 1990.

⁷⁶ For example, J. Adelman (ed.), *Essays in Argentine Labour History, 1870-1930*, London, 1992; D. Barrancos, 'Resistencia y negociación: el movimiento obrero argentino desde sus orígenes hasta 1930', in O. Moreno (ed.), *Desafíos para el sindicalismo en la Argentina*, Buenos Aires, 1993, pp. 31-41; J. Biale Masse, *Informe sobre el estado de las clases obreras argentinas a comienzos del siglo*, Buenos Aires, 1985; E. Bilsky, *Esbozo del movimiento obrero argentino: desde sus orígenes hasta el advenimiento del peronismo*, Buenos Aires, 1987; V.

question and social policy.⁷⁷ The relevance of the CLI as a tool to design policy and make the working class is crucial. Due to the period covered, scholars who focus on the idea of a missed opportunity, either from the economic⁷⁸ or the welfare perspective,⁷⁹ might be interested in this thesis. Individuals concerned with the transition from one political economy to another, could also gain insights from this research,⁸⁰ as this thesis argues that for the CLI to hold, it had to be conceived as part of the existing political economy.

The thesis is structured as follows. Chapter II sets the general background of the sociology of quantification literature by defining the word statistics and focusing on its history. It also provides a brief trajectory of CLIs in general and of three case studies in particular. Chapter III presents an overview of the Argentine statistical system between 1869 and 1943. Chapters IV to VI tell the history of the Argentine CLI following the de-

Haidar, *Trabajadores en riesgo: una sociología histórica de la biopolítica de la población*, Buenos Aires, 2008; N. Iñigo Carrera, *La estrategia de la clase obrera, 1936*, Buenos Aires, 2000; E.H. Kritz, 'La formación de la fuerza de trabajo en Argentina: 1869-1914', *Cuadernos del CENEP*, 30, 1983; M.Z. Lobato, *La vida en las fabricas. Trabajo, protesta y política en una comunidad obrera. Berisso (1904-1970)*, Buenos Aires, 2001; J. Panettieri, *Los trabajadores*, Buenos Aires, 1982; R.E. Shipley, 'On the Outside Looking in: A Social History of the Porteño Worker during the "Golden Age" of Argentine Development, 1914-1930', PhD diss., Rutgers University, 1977; J.C. Torre, 'Acerca de los estudios sobre la historia de los trabajadores en Argentina', *Anuario IEHS*, 5, 1990, pp. 209-20.

⁷⁷ See, among many, J. Bertranou et al, *En el país del no me acuerdo. (Des)memoria institucional e historia de la política social en Argentina*, Buenos Aires, 2004; L. Golbert, *De la sociedad de beneficencia a los derechos sociales*, Buenos Aires, 2010; E. Isuani, *Los orígenes conflictivos de la seguridad social argentina*, Buenos Aires, 1985; M.Z. Lobato, 'El Estado en los años treinta y el avance desigual de los derechos y la ciudadanía', *Estudios Sociales*, 12, 1997, pp. 41-58; D. Lvovich and J. Suriano (eds.), *Las políticas sociales en perspectiva histórica, Argentina 1870-1952*, Buenos Aires, 2006; J.L. Moreno (ed.), *La política social antes de la política social. Caridad, beneficencia y política social en Buenos Aires, siglos XVIII a XX*, Buenos Aires, 2002; E.A. Zimmerman, *Los liberales reformistas: La cuestión social en la Argentina (1890-1916)*, Buenos Aires, 1995.

⁷⁸ The idea of the great delay is introduced by Di Tella and Zymelman in an analysis of Argentina's development following Rostow's economic growth stages. Others also discuss the matter: C.F. Díaz Alejandro, *Ensayos sobre la historia económica argentina*, Buenos Aires, (1970) 1983; H. Giberti, *El desarrollo agrario argentino*, Buenos Aires, 1964; J.F. Sábato, *La clase dominante en la Argentina moderna: formación y características*, Buenos Aires, 1988; Villanueva, 'El origen de la industrialización'; F. Weil, 'La tierra del estanciero', in M. Rappoport (ed.), *Economía e historia. Contribuciones a la historia económica argentina*, Buenos Aires, 1988, pp. 277-299.

⁷⁹ For example: Salvatore, 'Better-off in the Thirties'.

⁸⁰ Along these lines see P. Alhadeff, 'The Economic Formulae of the 1930s: a Reassessment', in G. Di Tella and D.C.M. Platt (eds.), *The Political Economy of Argentina, 1880-1946*, Buenos Aires, 1986, pp. 95-119; R. Cortés Conde, *El progreso argentino, 1880-1914*, Buenos Aires, 1979; R. Cortés Conde, *La economía argentina en el largo plazo. Ensayos de historia económica de los siglos XIX y XX*, Buenos Aires, 1997; R. Cortés Conde, *The Political Economy of Argentina in the Twentieth Century*, Cambridge:UK, 2009; G. Di Tella, 'Economic Controversies in Argentina from 1920s to 1940s', in Tella and Platt (eds.), *The Political Economy of Argentina*, pp. 120-32; A. Ferrer, *La economía argentina*, Buenos Aires, (1963) 2004; P. Gerchunoff, and L. Llach, *El ciclo de la ilusión y el desencanto. Un siglo de políticas económicas argentinas*, Buenos Aires, 1998; T. Halperín, 'The Argentine Export Economy: Intimations of Mortality, 1894-1930', in Di Tella and Platt (eds.), *The Political Economy of Argentina*, pp. 39-59; P.H. Lewis, *The Crisis of Argentine Capitalism*, Chapel Hill, 1992; Y. Mundlak, D. Cavallo and R. Domenech, *Agriculture and Economic Growth in Argentina, 1913-1984*, New York, 1989; J.C. Neffa, *Modos de regulación, regímenes de acumulación y sus crisis en la Argentina (1880-1996)*, Buenos Aires, 1998; A. O'Connell, 'Free Trade in One (Primary Producing) Country: The Case of Argentina in the 1920s', in Di Tella and Platt (eds.), *The Political Economy of Argentina*, pp. 74-94; G. Vitelli, *Los dos siglos de la Argentina*, Buenos Aires, 2000.

construction/construction/re-construction method. Chapter IV de-constructs and constructs the inaugural CLI released in 1918/1924, while Chapter V does the same for the CLI published in 1935. The de-construction is a description of the content of the original publications, while the construction is an analysis of the context, uses, meaning and pitfalls of the index. These chapters provide answers to the following questions: How was each index elaborated? Why and by whom were they developed, in which context and with what aim? What were their most important assumptions? What were their most important pitfalls? Could they have been avoided? Why do these pitfalls matter? Specifically, Chapter IV deals with the sombre period of the Argentine CLI, while Chapter V considers the end of that period and compares the two sets of estimates. Chapter VI focuses on the re-construction phase. It first re-estimates the Argentine CLI then finishes with an examination of the Argentine, US, British and German indices in tandem. It answers the following questions: When do substantial differences occur between the re-constructed series and the official estimate? What do the differences imply? What does the comparative analysis suggest about the history of CLIs? Chapter VII concludes.

Conclusion

Today, statistics are part of everyday life. They are generally seen as objective, neutral facts and they are rarely questioned by their users. However, from their very conception, statistics have been closely linked to the judgment and knowledge of their producers, as well as the objectives they are meant to serve. CLIs are crucial tools that aim to depoliticise actions through rationalisation. This thesis discusses these issues through the analysis of two estimates of the Argentine CLI.

This chapter reviewed the main arguments regarding the production and use of numbers, following the sociology of quantification literature. Platt's demonstration of how bad numbers travel through time and become conventional wisdom is addressed. The direct link between Platt's book and this thesis is synthesised in Figure 1. It is also argued that his empirically grounded scepticism about numbers is theoretically explained by the sociology of quantification. Hacking's notion of the avalanche of numbers as a mechanism of social control and the idea of 'making up people' are helpful in trying to understand the avalanche of macroeconomic and socio-labour statistics in Argentina in the 1920s and 1930s, of which the CLI was an essential piece. Porter's notion of technology of distance, his analysis of why statistics are important and how this provides legitimisation to governments is fundamental

when understanding the surge of socio-labour statistics in Argentina in the 1930s and 1940s. The relationship that Desrosières establishes between politics and statistics provides an explanation of methodological decisions taken in the elaboration of the Argentine CLIs that *a priori* might not have a straightforward justification. His idea of making things that hold, taken by Patriarca as statistics as mode of representation and by Curtis as actionable objects, re-surfaces when looking at how the CLIs were produced and why the sombre period existed. Such an analysis contributes to the understanding of how the working class was conceived, as the index was closely linked to that segment of the population. Curtis' notion of investment in statistical forms and the centrality he places on international developments are crucial in the history of the Argentine indicator, particularly in the 1930s. As for those that study the history of CLIs, Stapleford's view of statistics as rationalisation mechanisms shows why the study of their production and use is important, justifying the choice of the statistic. The review of all these authors contributes to the premise that because statistics are historical sources, when studying the production and systematisation of data it is important to consider the ideas that guided the estimates, the institutions where the series were produced, the individuals behind the estimates, as well as the context in which they were developed, which in this thesis is embodied in the de-construction/construction/re-construction methodology. This is the path that is followed here, encouraged by the argument that the construction of statistics and their links with politics must be studied. In Francesco Boldizzoni's words, the writing of history is linked to "the process whereby society maintains, transforms and passes on public memory".⁸¹ Thus, the production and systematisation of the numbers used has to be studied carefully to do justice and be truthful to that public memory.

⁸¹ Boldizzoni, *The Poverty of Clio*, p. 8.

Chapter II - Statistics and cost of living indices: What the existing literature shows

As this thesis focuses on the production and use of statistics, further discussion of the meaning and history of statistics is needed. In this chapter, particular attention will be given to the connections between ideas, institutions and individuals, as well as how they relate to the state, given that the focus of this thesis is on official statistics. These concepts and how they are interrelated are the basis of the studies that embrace the sociology of quantification discipline. For that reason, they are crucial elements examined in this thesis's three-step methodology of de-construction/construction/re-construction, so their discussion here is essential. This chapter will, additionally, outline the history of the US, British and German CLIs, so that they can be analysed in tandem with their Argentine counterpart as part of the re-construction phase in Chapter VI.

Nikolas Rose and Peter Miller argue that knowledge is central to the activities of modern governments and to the creation of its objects, given that government is a field of cognition, calculation, experimentation and evaluation, inherently related to the activities of expertise.⁸² As national economies became more dependent on political choices, economic knowledge was turned into a concern when making policy.⁸³ Governments began to lean on theory or promote its development. They also generated new or employed existing information, fostering the creation of state institutions that, according to Mary Furner and Barry Supple, altered the nature and capacities of government, which, in turn, became dependent on economic knowledge.⁸⁴ Governments consume and produce economic thinking, which does not disseminate uniformly outwards as it travels along networks of nodes.⁸⁵ However, states have an advantageous position regarding information gathering and access to theory, as the capacity to accumulate data and apply models results from functions that private interests cannot pursue. What is more, theoretical understanding and ideas do not come solely from the academic sphere; the state itself is also an active player.⁸⁶ As Furner

⁸² N. Rose and P. Miller, 'Political Power Beyond the State: Problematics of Government', *The British Journal of Sociology*, 43:2, 1992, p. 175.

⁸³ For an assessment and explanation of types of economic knowledge see M.O. Furner and B. Supple, 'Ideas, Institutions, and State in the United States and Britain: An Introduction', in M.O. Furner and B. Supple (eds.), *The State and Economic Knowledge. The American and British Experiences*, Cambridge:UK, 1990, pp. 12-3.

⁸⁴ *Ibid.*, p. 5.

⁸⁵ Porter, *Trust*, p. 15.

⁸⁶ Insider learning throughout Franklin Roosevelt's government is examined in W.J. Barber, 'Government as a Laboratory for Economic Learning in the Years of the Democratic Roosevelt', in Furner and Supple (eds.), *The*

and Supple explain, moments of distress – like economic crises and wars – imply demands for new knowledge or reformulation of old thinking. Moreover, they argue that when novel ideas are needed, the effects on the state are widespread: from the creation of new agencies or offices to institutionalising professional advice.⁸⁷ These developments can be seen in the Argentine statistical system, as Chapter III explains, and particularly in the history of the Argentine CLI.

Institutions have a mediating role in the relationship between the state and economic knowledge. In this arbitration, for Furner and Supple, institutions perform distinctive and related functions: they serve as contexts for social learning; they provide mechanisms for state building; they are vehicles for the mediation of ideas between the academic and public spheres. These institutions can be permanent or temporary agencies, commissions and enquiries that gather data, monitor performance and inquire into the causes of problems; react to the demands of interest groups and coordinate the activities of different sectors; respond to unforeseen challenges and plan for those that are foreseeable. Institutions accumulate data to endorse the existing policies or rationalise new ones,⁸⁸ while ideas relate to reality and attain political effect through institutions. The latter, in turn, provide the arenas in which the former can be articulated, debated, and tested. Ideas and institutions are permeable to ideology and become politicised. Desrosières believes that statistical institutions that produce official numbers are places where “‘reality’ is instituted through co-constructed operations of social representation, public action, and statistical measurement”.⁸⁹

Ideas are thought, and institutions are run, by individuals. In the case of statistics, they make decisions about what to ask, how to tabulate answers, what categories and classifications to use, and what to publish. They are messengers who “put an irrevocable stamp on what we know”.⁹⁰ Federico Neiburg and Mariano Plotkin argue that intellectuals and the knowledge they produce relate to the state bureaucracy’s need to elaborate and implement policy.⁹¹ Those who design official statistics apply their technical and theoretical knowledge, interpret political and social objectives for the data, and take different attitudes

State and Economic Knowledge, pp.103-37. Policy problems raised by political necessity drove knowledge in Britain between 1880 and 1930, B. Supple, ‘Official Economic Inquiry and Britain’s Industrial Decline: The First Fifty Years’, in Furner and Supple (eds.), *The State and Economic Knowledge*, pp. 325-53.

⁸⁷ Furner and Supple, ‘Ideas’, p. 24.

⁸⁸ *Ibid.*, pp. 27-8.

⁸⁹ A. Desrosières, ‘History of Statistics’, in *International Encyclopedia of the Social & Behavioral Sciences*, 2001, p. 15084.

⁹⁰ Anderson, *The American Census*, p. 2.

⁹¹ F. Neiburg and M. Plotkin ‘Intelectuales y expertos. Hacia una sociología histórica de la producción de conocimiento sobre la sociedad en la Argentina’, in F. Neiburg and M. Plotkin, *Intelectuales y expertos. La constitución del conocimiento social en la Argentina*, Buenos Aires, 2004.

towards the reality they want to measure.⁹² In some cases, they adopt and adjust ideas to their local context. As Paul Starr argues, if their choices are inscribed within the dominant societal consensus, their judgements are likely to be accepted as objective.⁹³ Statisticians may have their own aspirations to power within the state, affecting the national statistical system. Prévost and Beaud identify four types of statisticians: the early nineteenth century gentleman statisticians; the state statisticians; the scientific or academic statisticians; and the polymaths who unite bureaucratic and scientific duties and credentials.⁹⁴ The examination of the ideas about what a CLI should account for, its objectives and its measurement, as well as the relevance and development of the institutions where the CLIs were produced and the individuals behind the estimate are therefore the backbone of the case study in this thesis.

Given that this thesis focuses primarily on statistics, it is necessary to understand what that word means as well as its history, which is considered in the first section of this chapter. The second analyses CLIs. After a digression about cost of living measures and a brief account of the origins of household surveys and price indices, the section goes on to consider the CLIs elaborated in the US, Britain and Germany. The last section concludes.

Statistics: meanings and history

The word statistics has multiple meanings. Statistics, in plural, indicates numbers or “numbers of things”.⁹⁵ Used in singular and referred to a meaning widely – though not exclusively – employed in the nineteenth century, it invokes both a specific governmental science and the writing genre that employed numbers to describe territorial entities and peoples. Since the early twentieth century it has also denoted, again in its singular form, the applied field of mathematical techniques and theories. As Porter demonstrates in *The Rise of Statistical Thinking*, before statistics gained its current mathematical meaning it was “necessarily” invented.⁹⁶

This research focuses on statistics as numbers and as a numerical social science of facts. However, techniques are also discussed to understand better the history of statistics. This section shows how statistics was first associated with the science of the state, then became the numerical social science of facts, and finally developed into a mathematical

⁹² Desrosières, ‘How Real Are Statistics?’.

⁹³ P. Starr, ‘The Sociology of Official Statistics’, in W. Alonso and P. Starr (eds.), *The Politics of Numbers*, New York, 1987, p. 40.

⁹⁴ Prévost and Beaud, *Statistics*, p. 6.

⁹⁵ T. Porter, *The Rise of Statistical Thinking. 1820-1900*, New Jersey, 1986, p. 11.

⁹⁶ *Ibid.*, p. 3.

discipline. To enhance this understanding, here there are references to particular national (and regional) case studies.⁹⁷ The last part of the section comments on official statistics, linking statistics and the state.

*A (very) brief history of statistics*⁹⁸

Records have been collected erratically in a variety of territories since ancient times.⁹⁹ However, the word statistics derives from the German *Statistik*, which was first used by the Göttingen professor Gottfried Achenwall in 1749. It referred to the science of the state, although it was mainly practiced at universities. As Porter explains, statistics initially resembled the collection and analysis of numbers along the lines of disciplines like geography or history. Its objective was to describe and compare, rather than to quantify. Numerical tables were used “only to the extent that the author found them available and appropriate”.¹⁰⁰

At the start of the nineteenth century, the first statistical era,¹⁰¹ or alternatively the era of statistical enthusiasm,¹⁰² began with the avalanche of numbers. Statistics became increasingly associated with numbers. The beginnings of this “momentous epistemic transformation” were linked to a new sense of power and dynamism of society that was characteristic of France after the Revolution.¹⁰³ In the Britain the avalanche related to the rise

⁹⁷ Country-focused studies not referenced include P.C. Cohen, *A Calculating People: The Spread of Numeracy in Early America*, Chicago, 1982; R. Davidson, *Whitehall and the Labour Problem in Late-Victorian and Edwardian Britain: A Study in Official Statistics and Social Control*, London, 1985; L. Mayer Celis, *Entre El infierno de una realidad y El cielo de un imaginario. Estadística y comunidad científica en el México de la mitad del siglo XIX*, México, 1999; J.G. Prévost, *A Total Science: Statistics in Liberal and Fascist Italy*, Québec, 2009; Senra, *Historia das estatísticas brasileiras*.

⁹⁸ Other brief histories include A. Desrosières, ‘L’histoire de la statistique comme genre: style d’écriture et usages sociaux’, *Genèses*, 39, 2000, pp. 121-37; T. Schweder, ‘History of Statistical Methods, Post-1900’, in *International Encyclopedia of the Social & Behavioral Sciences*, 2001, pp. 15031-7; T. Porter, ‘History of Statistical Methods, Pre-1900’, in *International Encyclopedia of the Social & Behavioral Sciences*, 2001, pp. 15037-40. For a brief history that looks closely at statistics and the state, see J.I. Piovani, ‘Los orígenes de la estadística: de investigación socio-política empírica a conjunto de técnicas para el análisis de datos’, *Revista de Ciencia Política y Relaciones Internacionales*, 1:1, 2007, pp. 25-44. From the perspective of quantification in sociology see P.F. Lazarsfeld, ‘Notes on the History of Quantification in Sociology: Trends, Sources and Problems’, *Isis*, 52:2, 1961, pp. 277-333.

⁹⁹ The Old Testament had counts that were analogous to modern censuses, O.D. Duncan, *Notes on Social Measurement: Historical and Critical*, New York, 1984, pp. 45-8.

¹⁰⁰ Porter, *The Rise*, p. 24.

¹⁰¹ D. Landes, ‘Statistics as a Source for the History of Economic Development in Western Europe: The Protostatistical Era’, in V.R. Lorwin and J.M. Price, *Dimensions of the Past: Materials, Problems, and Opportunities for Quantitative Work in History*, New York, 1972, p. 54.

¹⁰² H. Westergaard, *Contributions to the History of Statistics*, London, 1932, pp. 136-71.

¹⁰³ Prévost and Beaud, *Statistics*, p. 1.

of the social question,¹⁰⁴ while in France it was linked to the promoters of public health and public education.¹⁰⁵

During the nineteenth century, each country “went statistical” in its own way.¹⁰⁶ There was a close relationship between the expansion of nation-states and statistics becoming a widespread practice, influenced by industrialisation, urbanisation, the social question, the emergence of mass society and increasing literacy. Episodes like civil or regional wars also determined the fate of statistics,¹⁰⁷ as Furner and Supple argue.¹⁰⁸ Changes in context generated demands for different types of information, determining methodological alterations in the procedures and in the use of figures.¹⁰⁹ What each national entity counted was different, the interpretations regarding the content of statistics varied, and the dissemination of statistical innovations, methods, uses and languages had distinct trajectories as they were adapted to the national scenarios. Tooze argues, for example, that statistical developments, despite the simultaneity in their surge, differed in their relationship to politics: what changed was how the new forms of economic knowledge were combined with the political and legal framework.¹¹⁰ Statistics, as the numerical science of society, implied that records began to be collected and published systematically. Prévost and Beaud name this period the first wave of statistical bureaus.¹¹¹ Censuses were the most important activity they carried out. Bureaus implemented techniques that included summaries, encoding, summing, calculations and the creation of tables and graphs. The enquiries’ legitimacy rested on the combined authority of science and state, *à la* Desrosières. The data collected through them was considered relevant for the guidance of political decisions and for governing society. Collective phenomena were investigated using what came to be called the statistical method, which was a “method of reasoning about events in large numbers without being troubled by the intractability of

¹⁰⁴ For example, A. Baines, ‘Great Britain and Ireland’, in J. Koren, *The History of Statistics*, Concord, 1918, pp. 363-90; M.J. Cullen, *The Statistical Movement in Early Victorian Britain: The Foundations of Empirical Social Research*, London, 1975; Desrosières, *The Politics*, pp. 166-77; D.A. MacKenzie, *Statistics in Britain 1865-1930: The Social Construction of Scientific Knowledge*, Edinburgh, 1981.

¹⁰⁵ For example, Desrosières, *The Politics*, pp. 151-66; F. Faure, ‘France’, in Koren, *The History of Statistics*, pp. 199-214; S.J. Woolf, ‘Towards the History of the Origins of Statistics: France, 1789-1815’, in J.C. Perrot and S.J. Woolf, *Statistics and the State in France, 1789-1815*, Glasgow, 1984, pp. 81-194. A comparison on the relationship between statistics and the modern state in both countries is found in S.J. Woolf, ‘Statistics and the Modern State’, *Comparative Studies in Society and History*, 31:3, 1989, pp. 588-604.

¹⁰⁶ The phrase is from Hacking, *The Taming*, p. 17.

¹⁰⁷ In the twentieth century, the World Wars and the Great Depression also influenced statistical developments.

¹⁰⁸ Furner and Supple, ‘Ideas’, p. 15.

¹⁰⁹ Regarding US census history, one of the major waves of changes occurred for the 1850 census. Despite the census periodisation from its origins until 1980, each US census was different because it was set in a particular context, Anderson, *The American Census*, pp. 37-40.

¹¹⁰ Tooze, *Statistics*, p. 39.

¹¹¹ For description of the rise of national bureaus and the debate around centralisation, decentralisation and coordination of statistical activity, which lasted until 1945, see Prévost and Beaud, *Statistics*, pp. 63-90.

individuals”.¹¹² Public information was needed and perceived as a sign of progress – as a requirement of civilisation. As Porter stresses, the close link between social numbers and public action rather than the demands of statistical science itself fostered the creation of standardised measures and indices.¹¹³

Censuses generated authoritative representations of social relations, which became central to the construction of modern states,¹¹⁴ having an important effect in making national populations and shaping identities. Mara Loveman’s *National Colors* examines the making of Latin American nationalities through the mixture of races and the dissolution of racial differences using censuses’ ethno-racial classification.¹¹⁵ In *Numbers and Nationhood*, meanwhile, Patriarca analyses how statistics, conceived as a mode of representation, had the job of ideological and political legitimisation and also contributed to “the creation, the ‘production’ as it were, of the Italian nation”.¹¹⁶ Statistical knowledge was not confined solely to the state, as the public also appropriated the language of quantification.

Statistics was conceived of, then, as an objective science of facts because the underlying principle was that facts should speak for themselves. The statistical societies that surged in the 1830s, the international meetings that met regularly, and official statistical offices were devoted to the gathering of neutral and impersonal knowledge, which needed a routine, mechanical and exhaustive process of collection and presentation. Statisticians believed mathematical probability to be too arbitrary and speculative. Probabilistic sampling was almost unknown,¹¹⁷ and partial investigations were perceived as inaccurate and unscientific. In this context, Adolphe Quetelet developed his idea of the average man and the notion of statistical law, which held that regularities would stand because they related to the underlying stability of society.¹¹⁸ The average man was an abstract being, characterised according to the average of all human traits in a given country, which could be treated as the ‘type’ of the nation. Due to the uniformities behind the average man, society was seen as an entity in its own right, independent of its individuals.¹¹⁹ Without using mathematics, Quetelet

¹¹² Porter, *The Rise*, p. 12.

¹¹³ Porter, *Trust*, p. 81.

¹¹⁴ Curtis, *The Politics*, p. 3.

¹¹⁵ Loveman, *National Colors*.

¹¹⁶ Patriarca, *Numbers and Nationhood*, p. 4.

¹¹⁷ G. Gigerenzer et al., *The Empire of Chance: How Probability Changed Science and Everyday Life*, Cambridge:UK, 1989, pp. 38-9.

¹¹⁸ For an analysis of Quetelet, see Desrosières, *The Politics*, pp.67-102; Hacking, *The Taming*, pp. 105-14,180-8; Prévost and Beaud, *Statistics*, pp. 49-62.

¹¹⁹ The concept of average man had its critics, see Gigerenzer, *The Empire*, pp. 50-3.

became “the greatest regularity salesman of the nineteenth century”,¹²⁰ and the father of modern administrative statistics.¹²¹ The history of statistical mathematics before 1890 is that of the normal or Gaussian distribution.¹²²

The first three International Conferences of Labour Statisticians (ICLSs) were sponsored by the ILO and had similar characteristics as the International Statistical Congresses (ISCs). Chapters IV and V argue that they explain how the relationships between Argentina, the League of Nations and the ILO were closely linked in the 1920s and 1930s. Why? For Quetelet, statistical incompatibility across states was an obstacle to scientific progress. In Brussels in 1853, under his tutelage, the first ISC took place.¹²³ After several regular meetings, it was replaced in 1885 by the International Statistical Institute (ISI), which still exists today. Directors of official statistical bureaus were the main participants of the ISCs, together with high-level civil servants and government ministers. Guideline implementation was left to the discretion of states. The ISCs became victim of its dual goal: to be a meeting place for government officials with the capacity to make binding resolutions and to generate an opportunity for private individuals to exchange initiatives.¹²⁴ In contrast, the ISI was a free association with members chosen on the basis of their abilities. The ISI nonetheless had the same aims as the ISC. During the interwar period, institutions such as the ILO, which focused on socio-labour data, began to compete with the ISI. The turning point for the ISI occurred after WWII when United Nations agencies took over its administrative functions. The ISI then became an organisation of professionalised mathematical statisticians, as its activities began to focus on theory and methodology. The trajectory of the ISC/ISI followed the path of statistics itself: from a science of the state to a mathematical/probabilistic discipline.

The ISC aimed at standardising methods of classification and collection and promoting the international comparability of official statistics. It institutionalised an authoritative, prescriptive blueprint for how states should count and classify populations.¹²⁵ Curtis argues that census making in Canada was directly linked to international schemes and that Canadian census makers attempted to apply models developed elsewhere.¹²⁶ Loveman

¹²⁰ Hacking, *The Taming*, p. 105.

¹²¹ A. Desrosières, ‘Three Studies on the History of Sampling Surveys: Norway, Russia-USSR, United States’, *Science in Context*, 15:3, 2002, p. 379

¹²² Porter, *The Rise*, pp. 6, 11.

¹²³ For an analysis of the impacts of the ISCs, see E. Brian, ‘Del buen observador al estadístico del Estado: la mundialización de las cifras’, *Anuario IEHS*, 14, 1999, pp. 15-21.

¹²⁴ Gigerenzer, *The Empire*, p. 116.

¹²⁵ Loveman, *National Colors*, p. 91.

¹²⁶ Curtis, *The Politics*, p. 5.

meanwhile shows how statistics in Latin American countries was shaped by international criteria for how to be a modern nation and how to promote national development, as well as the ISC/ISI's international norms on how to take a census. In Latin America, "the relative position of national political and scientific elites within international political and scientific fields influenced the contours and contents of national census politics".¹²⁷ Particularly in non-core countries, statisticians thus adopted and adapted international guidelines to the local context, as occurred in the case of the Argentine CLI with the ICLS resolutions. The importance of the international scientific organisations and political ideas in shaping local enquiries in societies whose elites are not dominant players in that supra-national arena, and the need to look abroad for legitimacy are important in the history of the Argentine CLI.

In the twentieth century statistics increasingly became a mathematical discipline, beginning with Francis Galton's notion of correlation. In Porter's words, "the period when statistical thinking was allied only to the simplest mathematics gave way to a period of statistical mathematics".¹²⁸ For Landes, this is when the modern statistical era began, as new ideas about the role of the state and economic change drove the need to go beyond collection and arithmetical transformation of numbers and to generate indicators like composite indices of prices and wages. Socio-labour statistics thrived, encouraged by the need to understand the social question, which helped bring about the ICLS. Economic dislocations also impacted on the type of statistics gathered.¹²⁹ The adoption of probabilistic sampling methods in the 1940s was a technical breakthrough.¹³⁰

Official statistics

Rose and Miller argue that the problematics of government should be analysed considering their governmental technologies, defined as "the complex of mundane programmes, calculations, techniques, apparatuses, documents and procedures through which authorities seek to embody and give effect to governmental ambitions".¹³¹ These technologies facilitate 'governing at a distance', which seeks to create entities and persons that can be regulated. This thesis is concerned with one of these technologies: official statistics, which are produced, financed or incorporated by governments into their decisions.¹³² They are a

¹²⁷ Loveman, *National Colors*, p. 11.

¹²⁸ Porter, *The Rise* p. 315.

¹²⁹ Landes, 'Statistics as a Source', p. 54.

¹³⁰ Prévost and Beaud, *Statistics*, p. 154.

¹³¹ Rose and Miller, 'Political Power', p. 175.

¹³² Starr, 'The Sociology', p. 8.

junction between social studies, mathematics and information on public policies.¹³³ As William Alonso and Paul Starr explain in *The Politics of Numbers*, official statistics reflect assumptions and theories about the nature of society. They are outputs of social, political and economic interests, which might not necessarily coincide with each other. They are subject to methodological decisions made by organisations with restricted resources. While numbers make society, the absence of numbers or a “statistical blackout” is also significant.¹³⁴ Porter suggests that trusted numbers are produced by government agencies, universities, foundations, and research institutes, while figures generated by lobbying organisations and business corporations may be accepted, but are more likely to be audited.¹³⁵ Distrusted numbers and procedures also have significant meaning and impact.¹³⁶ All these characteristics are relevant for this thesis. The first CLI released in Argentina was published by a journal linked to specific interests and was a distrusted indicator. This influenced its trajectory, particularly its sombre years, which was a period of statistical blackout.

In the process of state-building, the development of national statistical systems supports the extractive and repressive tasks of the military, the tax system and the police.¹³⁷ In this way, statistical enquiry is related to the rise of the modern state,¹³⁸ as well as representative government.¹³⁹ Starr’s general hypothesis is that the more extensive the reach of state authority, the greater the extent, detail and volume of statistical enquiries.¹⁴⁰ For him, political legitimacy is extremely relevant in the creation of trustworthy official statistics because the generation of statistics is a social relation, as statisticians interact with other individuals either directly or through the mediation of questionnaires. Since gathering data requires cooperation and confidence, statistical secrecy and the anonymity of subjects are crucial. However, as suggested in the Introduction, numbers are not neutral: judgements are contained in the decisions regarding what to measure, how to measure it, how frequently to measure it, and – as Scott explains¹⁴¹ – how to display and read results. Statisticians’ beliefs, education, agenda and ideology generate wanted or unwanted biases. Canada’s first scientific census in 1871 was shaped by Joseph-Charles Taché’s fundamentalist national-religious

¹³³ Desrosières, ‘History’, p. 15084.

¹³⁴ Starr, ‘The Sociology’, p. 41.

¹³⁵ Porter, *Trust*, p. 214.

¹³⁶ M.A. Conk, ‘The 1980 Census in Historical Perspective’, in Alonso and Starr (eds.), *The Politics of Numbers*, pp. 155-87.

¹³⁷ Starr, ‘The Sociology’, p. 15.

¹³⁸ Woolf, ‘Statistics’.

¹³⁹ K. Prewitt, ‘Public Statistics and Democratic Politics’, in Alonso and Starr (eds.), *The Politics of Numbers*, pp. 261-74.

¹⁴⁰ Starr, ‘The Sociology’, p. 16.

¹⁴¹ Scott, ‘A Statistical’.

politics.¹⁴² In Italy after unification, statisticians were part of the political battles, as “official statistics became a tool, sometimes a weapon”,¹⁴³ in the debate over how to organise the state. Loveman shows how the racial beliefs of Latin American census officials shaped how they organised, displayed and analysed data. Her findings highlight that the region’s census officials “selectively adapted the international model to accomplish their own pragmatic and ideological ends”.¹⁴⁴ The biographies of the men behind the Argentine CLI should be expected to contribute to understanding it, therefore, as they were the ones who shaped it.

Choices are rooted in the statistical systems of modern states and are the result of the interplay between academics, professional statisticians and politicians.¹⁴⁵ Nevertheless, the notion of politicised statistics does not imply that they are corrupt.¹⁴⁶ Why? Statistics can act as depoliticisation mechanisms, such as when they are used for indexation and apportionment. The way they are delineated therefore impacts on national policy. Partisan patronage influences the appointment of statisticians and statistical personnel,¹⁴⁷ but the apparent objectivity of statisticians, based, for example, on their credentials, can contribute to them not being accused of producing biased results. For the collection of official statistics in specific political settings, a virtuous cycle exists between confidence, cooperation and legitimacy. Official statistics are meant to be objective. Their objectivity is founded on a supposed bond of trust between official statisticians and citizenry. Self-limitation from statisticians is necessary to build this trust: they should consequently refrain from making enquiries on topics likely to provoke resistance. Due to this apparent objectivity, statistical information can foster social integration and conflict resolution. The use of CLIs to adjust wages is an example of this. However, such uses of statistics depend on the nature of political bargains between social groups, local authorities and the state.

Similar to Scott, Mark Perlman argues that the final output of the statistical process is as important as the original architectural plans behind it, especially since the building process alters the version.¹⁴⁸ This thesis focuses on how data is produced and used, as well as on how information is structured to show those modifications. Official statistics become cognitive

¹⁴² Curtis, *The Politics*, pp. 14-5.

¹⁴³ Patriarca, *Numbers and Nationhood*, p. 177.

¹⁴⁴ Loveman, *National Colors*, p. 40.

¹⁴⁵ R. Vernon, ‘The Politics of Comparative Economic Statistics: Three Cultures and Three Cases’, in Alonso and Starr, *The Politics of Numbers*, pp. 61-82.

¹⁴⁶ Alonso and Starr, ‘Introduction’, pp. 1-3.

¹⁴⁷ Political patronage practices continued after the Census Office was established, Anderson, *The American Census*, pp. 124-6.

¹⁴⁸ M. Perlman, ‘Political Purpose and the National Accounts’, in Alonso and Starr (eds.), *The Politics of Numbers*, pp. 133-52.

commitments and provide the universal point of reference in assessing the economy and administrators in office. As such, official statistics are relevant even if the methods are flawed and data are incorrect, which were important features of the Argentine CLIs in the first half of the twentieth century. Since numbers become standards, official statistics influence social perception, cognition and norms. As depicted in the Introduction, statistical systems develop automatic pilots. Price indices are a clear example of how statistical systems matter.¹⁴⁹

This section discussed how the development of the state requires and encourages statistical development. Revealing these relationships provides a better understanding of an activity that is fundamental to modern government. As highlighted in the Introduction, statistical enquiries are crucial when making up populations, building nations and defining identities. Parallels can be drawn between the use of censuses to make a nation and the Argentine CLI as a contribution to the making up of the working class, particularly as such a project was needed to develop a new image of the nation, as this thesis argues. In other words, statistics, as a mode of representation, creates things that hold. Given that developing statistics is a social relation, change creates new conditions for enumeration, induces methodological innovations, generates demands for new measures, and leads to new interpretations and novel uses for the data. National contexts determine each country's history of statistics despite parallel developments between countries. Thus, the objectives of statistics adapt to historical, political, economic and social contexts. Statistics are not static, so their changing dynamics are taken into account when analysing the Argentine CLI. Divergences exist between aims, results and uses because statistics, once created and legitimised, have their own dynamic, which influences how an indicator is perceived and its fate within the statistical system, as happened with the Argentine CLI. Moreover, the contribution of statisticians to the shaping of statistics, a relevant layer in the lack of neutrality of numbers, is also considered in this research. Statisticians' emphasis on the need to live up to what is happening elsewhere and mimic statistical procedures in search of legitimacy is, it will be seen, crucial for the Argentine case study.

Cost of living indices

In the early twentieth century, three statistical domains existed. Population or vital figures were under the authority of the bureau that carried out the census. The production of economic statistics belonged to boards of trade or specific ministries that gathered trade and

¹⁴⁹ Starr, 'The Sociology', pp. 53-5.

fiscal figures. Labour statistics – on strikes, wages, industrial injuries, unemployment and CLIs¹⁵⁰ – had been collected since the late nineteenth century by labour departments, which dealt with the relations between capital and labour. In 1926 the Statistical Section of the ILO claimed that when the aim was to measure the fluctuations in the purchasing power of money, the CLI becomes an economic statistic. When the objective is to determine the level of real wages and be used as a basis for adjusting wages to changes in the value of money, by contrast, the ILO stated that the indicator was a labour statistic.¹⁵¹ Tooze claims that of the four key elements in the matrix of economic knowledge – trade, prices, national income and unemployment – the last three were conceived originally as social rather than economic indicators.¹⁵² They were perceived as elements of social policy, concerned with distributional matters, but they came to be considered fundamental aspects of a national economy. The change related to the explosion of economic statistics between 1870 and the 1950s, which, for Tooze, was a statistical revolution in its own right. The statistical revolution developed the infrastructure of data-gathering.¹⁵³ These developments were accelerated during WWI, when changes in the economic context needed to be understood, accounted for, and increasingly harmonised and compared.

Economic and labour statistics are relatively less explored than demographic figures.¹⁵⁴ Although studies have surfaced in recent years,¹⁵⁵ there is still work to be done. Using the Argentine CLI as a case study, this thesis contributes to filling the gaps in the literature by providing a novel three-step methodology that includes producing an alternative estimate for the Argentine CLI and an analysis in tandem with its US, British and German counterparts. Moreover, this research shows that Tooze’s pattern regarding CLIs was inverted in the Argentine case. Rather than being a social indicator, Bunge’s CLI originally had an economic meaning. The estimate released in 1935, however, assimilated other indices and was a wage-adjustment mechanism, so it became a social indicator.

To set the context in which the Argentine CLI was developed, this section will review the history of three CLIs. It is an unbalanced narrative due to the unevenness of the existing literature. Apart from the country-specific developments, following the trend set by the ISCs and the ISI, and the theoretical debates in the United States and Britain, in the 1920s the

¹⁵⁰ As CLIs were initially developed by labour bureaus, telling their story implies accounting for the history of these institutions as well.

¹⁵¹ K. Pribram, ‘The Scope of Labour Statistics’, *ILR*, 14:4, 1926, p. 483.

¹⁵² Tooze, *Statistics*, pp. 4-11.

¹⁵³ The ideas that shaped data collection were developed together with economic theory, *Ibid.*, p. 13.

¹⁵⁴ *Ibid.*, p. 3.

¹⁵⁵ Furner and Supple, *The State*; Searle, ‘Is There Anything’; Stapleford, *The Cost*; Tooze, *Statistics*.

ICLSs began to discuss how to produce CLIs. Given the particular relevance the conferences had in the history of the Argentine index, these meetings are analysed later. Before these national indicators are considered, however, there is an explanation of different types of price indices, followed by a brief outline of the early history of price indices and expenditure surveys.

CLI, consumer price index (CPI), retail price index (RPI) and inflation: A relevant digression

When analysing the indicator that measured price movements in the first half of the twentieth century, it is historically appropriate to use the term CLI. In Argentina in that period the statistic was referred to with that name by those that developed and used it. For this reason, the term CLI is employed in this research. However, the terminology differs from its present-day meaning.

According to the Bureau of Labour Statistics (BLS), the US CPI measures the price changes of all goods and services bought for consumption by urban households. Fees, such as water and sewer services, and sales and excise taxes paid by the consumer are considered in the estimate. Income taxes and investment items are excluded. This indicator can be traced back to 1913.¹⁵⁶ The Office for National Statistics (ONS) explains that the British RPI was initially developed as a compensation index derived from an indicator designed in 1914; it offers estimates from 1947 onwards. In 1996, a CPI was introduced; its development is closely related to the history of the European Union. Among the most important differences, the British RPI includes housing costs, such as mortgage interest payments and council tax. Both the CPI and the RPI are grounded on a fixed basket of goods and services in each year,¹⁵⁷ known as a Laspeyres index.

Both the BLS and the ONS differentiate their indices from CLIs, even if they implicitly acknowledge a previous, historical use of the latter term. The BLS defines CLIs as a conceptual measurement goal that aims to quantify the variations in the amount of money that consumers need to spend to reach a certain utility level or standard of living, a subjective definition. A complete CLI would also account for changes in governmental or environmental factors that affect consumers' well being, such as safety and education. The ONS argues that a CLI can be calculated like a CPI or a RPI, but restricted to basic essentials,

¹⁵⁶ <http://www.bls.gov/cpi/cpiovrw.htm#item6> (accessed December 1, 2014).

¹⁵⁷ For more similarities and differences between the British CPI and RPI, see P. Gooding, *History of and Differences Between the CPI and RPI*, ONS, 2001.

which also implies a subjective definition. Implicitly in this differentiation, they both distinguish between non-material and material standard of living.¹⁵⁸

Inflation is the rate at which the general level of prices of goods and services rises. Nowadays, it is measured either by the CPI and/or the RPI. Until these tools were fully developed in the mid-twentieth century, however, price rises were measured by so-called CLIs, which can be considered historically synonymous with the RPI/CPI. Why? Early CLIs were weighted price indices determined using proportional weights obtained from expenditure data, which renders the same results as a constant goods index.¹⁵⁹ They did not necessarily capture changes in utility levels, as this thesis shows.

The beginnings

Frédéric Le Play, a pioneer in the study of workers' budgets, used the budget of a single family to represent the life-style of a socio-economic class. Le Play's work "was numerical but anti-statistical".¹⁶⁰ He did not use Quetelet's averages, but employed representative families to show the outstanding characteristics of their 'type'. In 1855, he published *Les ouvrières européennes*, which contained the household budgets of 36 families. Le Play claimed he was writing monographs, in-depth numerical studies in which every item of a year's income in cash and kind was documented. The monographs were considered representative of the workers of a region. As Hacking explains,¹⁶¹ Ernst Engel was Le Play's successor, as he adopted Le Play's idea of household budgets and argued that they would be a fundamental tool of economics. He used averages of a number of cases to measure the prosperity of a class or nation. Maurice Halbwachs, in the early twentieth century and focusing on the poor, also used family budgets, classifying them by income, industry and region. While Le Play used his monographs to illustrate a certain concept of family, Halbwachs aimed to compare different structures of different types of families.¹⁶²

Before probabilistic sampling, the individuals or households surveyed were picked through networks of familiarity, using purposive sampling.¹⁶³ Le Play surveyed families whose conditions were perceived as typical by village notables. Halbwachs used workers

¹⁵⁸ R.A. Easterlin, 'The Worldwide Standard of Living since 1800', *Journal of Economic Perspectives*, 14:1, 2000, pp. 7-8.

¹⁵⁹ Stapleford, *The Cost*, pp. 397-8.

¹⁶⁰ Hacking, *The Taming*, p. 135.

¹⁶¹ *Ibid.*, p. 139.

¹⁶² For a detailed history of family budgets, see A. Desrosières, 'Del trabajo al consumo: la evolución de los usos de las encuestas sobre el presupuesto de las familias', *Anuario IEHS*, 14, 1999, pp. 93-123.

¹⁶³ Exceptions existed to this general trend, Desrosières, *The Politics*, pp. 210-35; Prévost and Beaud, *Statistics*, pp. 153-72.

who volunteered through trade unions, a process similar to that used in Argentina in the 1930s. For Desrosières, the ideas of exhaustiveness and representativeness were missing in Le Play's and Halbwachs' studies.¹⁶⁴ According to Prévost and Beaud, the idea of typicality was fundamental before sampling was widespread.¹⁶⁵ This meant that the territorially defined sample presented traits similar to those of the whole from which it was removed. The type was an abstract set of characteristics common to all parts. For Desrosières, the notion of typical cases presupposes a generalisation based on homogeneity, resemblance and proximity.¹⁶⁶ In this case, there was a strong link between type and mean.¹⁶⁷ This influenced Figuerola, as will be shown in Chapter V.

According to the ILO, early research on price fluctuations focused on price relatives rather than index numbers. To study general price movements, the latter are suitable, because they show "the average percentage change of prices (of a number of commodities) while [price relatives] show the ratio between prices of a 'single' commodity at different dates".¹⁶⁸ Index number construction is not measurement. Rather, indices are representations of what cannot be expressed directly.¹⁶⁹ Averaging price series nonetheless makes sense because it allows for an aggregation of money spent on different items. For Porter, this means that index numbers cannot be observed; they are determined through data mining.¹⁷⁰

Maurice Kendall argues that in 1707 Bishop Fleetwood, concerned with the value of money, elaborated the first price index as a simple average.¹⁷¹ Tooze explains that in the 1860s and 1870s mathematicians and economists explored the development of index numbers. Then, due to increasing inflation in the late 1890s, nation states, influenced by the social consequences of these fluctuations, began to develop weighted price indices.¹⁷² Increasing urbanisation and industrialisation changed the dynamics of the labour world, which needed to be accounted for and understood. WWI was a turning point in the history of price indices, as well as economic statistics, as concern for the social impact of domestic price rises was compounded by the economic disorder triggered by international price

¹⁶⁴ Desrosières, *The Politics*, p. 221.

¹⁶⁵ Prévost and Beaud, *Statistics*, p. 160.

¹⁶⁶ Desrosières, 'Three Studies', p. 380.

¹⁶⁷ Prévost and Beaud, *Statistics*, pp. 160-1.

¹⁶⁸ ILO, 'Methods of Compiling Cost of Living Index Numbers: Report Prepared for the Second International Conference of Labour Statisticians (April 1925)', *Studies and Reports, Series N (Statistics)*, 6, 1925, p. 7, original parenthesis.

¹⁶⁹ Duncan, *Notes*, pp. 228-31.

¹⁷⁰ Porter, *Trust*, pp. 81-6.

¹⁷¹ The price index was based on meat, drink, corn and cloth from the mid-fifteenth century. M.G. Kendall, 'Studies in the History of Probability and Statistics, XXI: The Early History of Index Numbers', *Review of the International Statistical Institute*, 37:1, 1969, pp. 1-2.

¹⁷² Tooze, *Statistics*, p. 7.

volatility. The latter issue was of particular importance in the Argentine case. The ILO explains that until the conflict, given slow price movements, alterations in variables such as wages took place by bargaining, rather than adjustments due to changes in the price level. Index numbers were rarely used for the practical purpose of adjustment. During and since the war the situation changed and there was an urge to estimate CLIs, especially to adjust wages,¹⁷³ a practice that is seen when analysing the US and British indices in particular. Estimates had to be reliable; they needed to account not only for price movements, but also consider consumption patterns, becoming weighted averages. Household budget information was fundamental. With this, according to Tooze, price indices gained new economic content.¹⁷⁴ As weighted averages, they gave more significance to particular prices. The weights aimed to reflect the class's total consumption of key commodities.¹⁷⁵ In this new scenario and conditioned by the national context, the United States, Britain and Germany released CLIs, each with its own characteristics, as will be seen in the remainder of this chapter.

*The US CLI*¹⁷⁶

Between 1870 and 1900, the United States experienced socio-economic and political changes due to economic integration, growing urbanisation, industrialisation and rising population. At the turn of the century, the determination of tariffs triggered the need for national, regularly-published prices. However, Stapleford argues that the real momentum to collect price and wage data came from the transformations in the labour movement and the political ideology that generated a novel task for bureaus of labour statistics.¹⁷⁷ The consolidated support of labour, businessmen and politicians to deal with the labour question had an impact on statistics. Carroll Wright, then head of the BLS, began to compile extensive wage and price data at the turn of the century. For Stapleford, this implied a growing sense that the BLS had a fundamental role in monitoring and facilitating industrial relations. Wage and price indices were elaborated and published in 1904. Prices were gathered from merchants across the country. Using price relatives for each food item, the BLS estimated an un-weighted and a

¹⁷³ ILO, 'Methods', pp. 7-8.

¹⁷⁴ Wholesale and foreign trade indices were also elaborated.

¹⁷⁵ Tooze, *Statistics*, pp. 7-8.

¹⁷⁶ Stapleford, *The Cost*, looks at the study of the cost of living and not just the CLI. For that reason, when analysing his work, emphasis is placed on his contributions towards the research of the indicator. His work extends until the year 2000, but the focus on Stapleford's book is circumscribed to the period under study in this thesis.

¹⁷⁷ *Ibid.*, pp. 27-39.

weighted total index with weights extracted from the survey of 1900/02. The gap between the undertaking of the survey and the publication of the data was “disastrous”.¹⁷⁸ the economic downturn led to more optimistic results than many workers were inclined to believe. In 1907, under the tenure of Charles O’Neill, the index stopped being published – a decision that was hardly criticised and that Stapleford considers a sign of a lack of clear use for the data. This shows how individuals’ decisions affect the history of statistics. Hence, for Furner, the pre-WWI BLS avoided the appearance of political or class partisanship, which had an effect on how the information they produced was perceived.¹⁷⁹

By 1910 changing perceptions of rising prices as a consequence of urbanisation had turned the cost of living into a political topic. In 1912 O’Neill resumed publication of the index.¹⁸⁰ WWI then boosted national bureaucratic management, so the BLS was pushed to generate national cost of living statistics for wartime labour arbitration. Stapleford highlights that wage adjustments to counteract the increasing cost of living became an accepted practice by early 1918. Proto-indexation, a depoliticisation mechanism, began. The US CLI nevertheless had a weak birth, according to Stapleford, as it was based on wartime funding, which was no longer available once the conflict was over.¹⁸¹

After the war, in contrast with wartime pressures for labour management, political decentralisation and capitalist competition fragmented industrial relations, influencing the methods and applications of the CLI. Throughout the 1920s there was no combination of political and economic pressures that backed a uniform, rule-governed system to regulate wages, which seemed unnecessary. However, for Stapleford, the appeal of quantitative rationality and the political power of the cost of living rhetoric did not vanish entirely.¹⁸² For example, the BLS started using chain indices to splice together different estimates – a procedure that was employed to deal with change in coverage and to substitute items. Based on the expenditure survey of 1918/19, from 1921 the CLI calculated food items priced monthly, while clothing and furniture were priced either quarterly or semi-annually.

Increasing attention to the issue of purchasing power in the late 1920s, Stapleford claims, established the foundation for a new interest in prices and renewed the links between

¹⁷⁸ Ibid., p. 51.

¹⁷⁹ M.O. Furner, ‘Knowing Capitalism: Public Investigation and the Labour Question in the Long Progressive Era’, in Furner and Supple (eds.), *The State and Economic Knowledge*, p. 269.

¹⁸⁰ Though the index had a more reduced scope than its predecessor, Stapleford finds no evidence of any pressure on the BLS to expand or improve coverage.

¹⁸¹ Stapleford, *The Cost*, pp. 92-5.

¹⁸² Ibid., p. 125.

the CLI and a reform of industrial relations – pressures that increased during the 1930s.¹⁸³ The commonly held view was that the Great Depression was a problem of underconsumption: low wages halted workers' consumption and generated a large stock of unsold goods. As consumer purchasing power became a determinant of economic growth in a mass production economy, the BLS and its statistics appeared more relevant. With the arrival of Roosevelt to the presidency in 1933, the bureau received money and acquired new motivated and qualified staff, mainly institutional economists, who renovated its statistics and located themselves and their tasks as fundamental pieces of the New Deal.¹⁸⁴ The underconsumption reasoning situated bargaining in a framework dependent on quantitative knowledge. The focus on mass purchasing power downplayed standard of living studies; instead, the CLI was used more as a tool for revealing and modelling consumer demand. The CLI thereby acquired macroeconomic significance.¹⁸⁵ The greatest transformations experienced by the BLS in general and the index in particular during the 1930s were not in the numbers themselves, but in the roles assumed by top leaders. Stapleford points out that, as it had during WWI, political opportunity drove the agenda of change in statistics.¹⁸⁶ Regarding methodological shifts, Stapleford claims that most of the bureau's achievements in this period were based on previous strategies that had more room to thrive given better funding and administrative flexibility. The CLI was reformed. In 1935, through a 'revision of group index weights' using the data from the expenditure survey of 1918/19, there was an adjustment of the six components and the index was recalculated from 1913 onwards.¹⁸⁷ Consequently, the price index became the tool for assessing national changes in the cost of living as macroeconomic theory identified consumer purchasing power as a crucial variable for economic growth and stability.¹⁸⁸

Stapleford's history of the US CLI shows that the indicator had a bumpy trajectory. A demand for a more active role for the federal government surfaced during WWI, but it retreated again after the war. The Great Depression and WWII were critical influences in the managerial role of the federal government, including the search for neutral numbers, and thus in the history of the indicator. While the timing stressed by Stapleford regarding the

¹⁸³ Ibid., p. 98.

¹⁸⁴ The professionalisation of federal statistics was a hallmark of the revolution in US government statistics. See J.W. Duncan and W.C. Shelton, *Revolution in United States Government Statistics, 1926-1976*, Washington D.C., 1978.

¹⁸⁵ Stapleford, *The Cost*, p. 136.

¹⁸⁶ Ibid., p. 165.

¹⁸⁷ Ibid., pp. 159-61.

¹⁸⁸ Ibid., pp. 59-60.

importance taken on by the CLI is similar to the Argentine case, differences existed that impacted on the history of the latter indicator. Stapleford does not place much relevance on the 1907-1911 statistical blackout, in contrast with this thesis' emphasis on the sombre period. He does not directly link workers' perception of the index with the episode, stating instead that "such statistics were exceedingly difficult and expensive to gather, and they had no compelling role in the dominant political order or conception of political economy".¹⁸⁹ For Stapleford, then, the CLI needed a particular use to be estimated systematically. Yet, his detailed analysis still constitutes a guide to this thesis and a point of comparison, not least in the way in which he analyses the notion of indexation as a depoliticisation mechanism.

The origins of the British CLI

Searle's analysis of the British CLI up to 1962 explains why, notwithstanding widely accepted inadequacies, the indicator remained linked to a sketchy estimate of the pre-WWI prototype of working class expenditure until 1947. She shows that the British index was essentially political in nature. She also points out that the developments of the British and US CLIs signalled not only the ascendancy of experts within government, but also a more interventionist state fostered by the wars and economic depression.

The origins of the British indicator are linked to the establishment of the Labour Statistical Bureau in 1886 within the Board of Trade. Given the scarcity of information, the Labour Statistical Bureau began to collate information produced by third parties. Due to the shortage of financial resources, initial efforts were focused on investigations that appeared to have urgent relevance, such as industrial unrest, unemployment and earnings.¹⁹⁰ As priorities shifted towards tariff reform and as prices began to rise around 1905-1909, debate about the CLI began. The lack of expertise within the Board regarding index numbers, a technical matter, also influenced the characteristics of the CLI agenda.¹⁹¹ In July 1914, *The Labour Gazette* began publishing a monthly index to track food prices. A year later, the range of the index was broadened to cover a limited variety of regularly-purchased non-food items. The index weights derived from different sources. The food consumption data came from a 1904 enquiry. The weights reflected, according to Searle, the relevance of items within a pre-1914

¹⁸⁹ Ibid., p. 57.

¹⁹⁰ On British statistics and the labour question, see Davidson, *Whitehall*; R. Davidson, 'The State and Social Investigation in Britain, 1880-1914', in M. Lacey and M.O. Furner, *The State and Social Investigation in Britain and the United States*, Cambridge:UK, 2004, pp. 242-275.

¹⁹¹ Well known statisticians Arthur Bowley and George Wood were consulted, which improved the overall technical quality of official numbers, Searle, 'Is There Anything', pp. 147-8.

working class budget, based on an image of a homogeneous working class.¹⁹² If anything, the CLI was “at best, a rough estimation of working-class spending patterns in 1914”,¹⁹³ much like its Argentine counterpart at that time, as Chapter IV will argue.

As time passed, the CLI began to be used in ways that surpassed its original objectives, showing how statistics is not static. Given wartime and post-war price rises, formal and informal mechanisms that associated wage levels with movements in the CLI were established. This was the most important use of the index,¹⁹⁴ and it became so pivotal to the British economy that managing it was considered a measure of accomplishment for the government.

Working class consumption was transformed radically during the war due to shortages, rationing and rent control, resulting in an outdated index. These modifications and the shifts in relative prices between 1920 and 1934 delivered an “increasingly inaccurate” indicator during the interwar years.¹⁹⁵ Government, business and labour criticisms focused on the aforementioned changes. However, the CLI was not revised. Searle explains this lack of amendment by analysing the movement of relative prices.¹⁹⁶ All prices fell between 1920 and 1934, but the price of food items did so more than their non-food counterparts. Thus, the information available at the time suggests that if a revision was carried out that introduced more items and gave more weight to non-food ones, the CLI would not have declined as much during the 1920s. As the index began to rise in 1934, the financial incentive the government and employers had to keep it unaltered ceased, and a survey was conducted in 1937 and 1938. Before the outcomes could be considered, however, the war broke out.

Price increases returned with the start of WWII. Given the importance wage indexation had acquired in the first international conflict, Searle argues that it was not an option to decouple wages from the CLI.¹⁹⁷ Price controls dealt with the rises, and subsidies were introduced. Stabilisation policy provided motives for not altering the weights of the CLI. Once again, Searle depicts how the shift in relative prices throughout WWII provides an explanation for the preservation of the *status quo* of the CLI.¹⁹⁸ By the end of the war, a great number of workers had their wages indexed and the subsidies generated an increasing burden

¹⁹² Ibid., p. 148.

¹⁹³ Ibid., pp. 148-9.

¹⁹⁴ Methods were instituted to alter civil service and armed forces officers’ pensions according to the CLI. The index became fundamental in the debate to set unemployment assistance and in the deliberations that began in 1924 regarding the return to the Gold Standard.

¹⁹⁵ Ibid., p. 152.

¹⁹⁶ Ibid., p. 155.

¹⁹⁷ Ibid., p. 156.

¹⁹⁸ Ibid., p. 156-7.

upon the exchequer. Once the Chief Statistician of the Central Statistical Office acknowledged that the index was “an instrument of stabilisation policy rather than a measure of changes in cost of living”,¹⁹⁹ revision became essential. This turning point shows the relevance of the indicator as a depoliticisation mechanism, as was highlighted in the Introduction.

Searle argues that the growing economic relevance of the index had two implications. Given its financial importance, when prices were changing fast, the methodology of the CLI was the focus of intense debate. In Searle’s words, “only when such modifications were believed to be in the national economic interest were they made”.²⁰⁰ Moreover, the changing composition of the index reveals issues of class and consumption. The initial indicator embraced the idea of a distinct working-class consumption pattern and the indicator was always linked closely to this sector. According to Searle, CLIs that comprised more items could only be feasible due to the development of statistical expertise within the state, which occurred in the 1950s.²⁰¹

The German index

In 1912 the Prussian military began to lobby for a system of national price statistics, signalling an official need for trustworthy and neutral numbers. However, no agreement was reached on common standards before 1914. By the end of the war, according to Tooze,²⁰² the issue could no longer be circumvented because the Reich’s Labour Ministry needed a guide for price movements. Due to the increasing interest in an official CLI, statisticians within and outside the government began to develop price statistics and indices, resulting in a chaotic situation. An up to date official figure for the entire Reich was needed. Given the lack of experience, the Reich’s statisticians, ministries and the representatives of labour and business discussed a survey in 1919. The major issues were the choice of a representative sample of towns, the decision on the goods that were going to form part of it and their weights. Questionnaires on the prices of the most important foodstuffs, the cost of fuel for heating and lighting and rents were dispatched by the Reich’s Statistical Office (RSO) to the statistical offices of the Länder on November 1919. Local officials provided prices, which were countersigned by local committees representing employers and labour. For Tooze, this agreement was essential, given that the main concern at the municipal level was to construct a

¹⁹⁹ Jack Stafford referenced in *ibid.*, p. 161.

²⁰⁰ *Ibid.*, p. 164.

²⁰¹ *Ibid.*, p. 164.

²⁰² Tooze, *Statistics*, p. 91.

consensual basis for future wage adjustments.²⁰³ The weighting scheme was based on the household enquiries carried out in 1907. By early February 1920, the RSO had the first national cost of living estimate. The Labour Ministry, however, was only convinced of the reliability of the price survey by August, when the figures were released. In April 1921 the RSO was able to publish an up to date monthly index of the national cost of living, the *Reichsindex*. For this reason, the first stage of inflation went unrecorded in official statistics. This indicator “appeared to be a consensual objective of Weimar’s elite”.²⁰⁴ For Tooze, however, in practice this was far from the truth. Initially, the *Reichsindex* was susceptible to criticism because it constituted a partial image of working class expenditure and for understating the true rate of increase in the cost of living.

As inflation accelerated in 1922 and the first half of 1923, the accuracy of the figures stopped being the primary issue, giving way to the problem of immediate information. While private agencies and local statistical offices began to publish fortnightly or weekly indices, the RSO continued to release it monthly, reducing its relevance. The Labour Ministry did not authorise more frequent official figures because it was concerned about the potential acceleration of the wage-prices spiral. By mid-June 1923, however, it gave in to the idea of automatic wage indexation and statisticians were ordered to produce a weekly index. The results were a “fiasco” because the RSO adopted a flawed procedure,²⁰⁵ which accumulated over several weeks, led to conflicting results. Given the negative repercussions, trade unions and employers were selected to constitute a national commission for price statistics. The RSO had thereby forfeited its authority as a trustworthy source of information, since the authority of data could only be guaranteed through the integration of both capital and labour.

Tooze argues that in the first years of the Weimar Republic the objective of official statistics to impose an external, neutral measure on socio-economic reality was a product of social and economic order, relating to the political economy. It depended on a number of interconnected factors: an authoritative state, a minimum level of consensus in civil society and a degree of stability in the economy to be measured.²⁰⁶ According to Tooze, these factors were not present between 1919 and 1923. Statistical surveys could not operate in a society immersed in political, social and economic conflict. Thus, between 1923 and 1924 when the Republic began its conservative consolidation and order was restored, official statistics could deliver the objectives of the August 1920 inter-ministerial meeting, where the Reich’s

²⁰³ Ibid., p. 92.

²⁰⁴ Ibid., p. 93.

²⁰⁵ Ibid., p. 96. Tooze does not explain what this flawed procedure was.

²⁰⁶ Ibid., p. 96.

Ministry of Economic Affairs announced its plan for a reform of German official statistics. After the ‘fiasco’, secret tripartite negotiations involving the employers and trade unions met with the aim of re-establishing the authority of the *Reichsindex*. The revised index, released in 1925, had support in the political mainstream and the full backing of the trade unions.

After the Great Depression, the *Reichsindex* came under attack once again. Deflation was a central policy aimed at restoring German competitiveness, which gave strategic significance to the index. Without a decline in the cost of living, it was hazardous to cut wages. Foodstuff prices had to fall more to have an effect on the CLI. However, agricultural prices remained stable to keep farmers satisfied and away from the National Socialist Party. While industrial prices declined, moreover, they had little influence on the CLI. The government therefore decided to blame statistics. Nonetheless, as Tooze highlights,²⁰⁷ by 1930 the RSO was confident enough to give a lecture on the methodology of price statistics, which demonstrated that the office’s reporting system was politically neutral. The RSO had gained enough authority to resist political pressure.

Tooze’s analysis is relevant for this thesis because it shows the need for consensus for the *Reichsindex* to be fully accepted and acknowledged. Its strategic significance for economic policy also fostered its trustworthiness. Unlike its British and US counterparts, both a labour and a national statistical agency were involved in its production. Yet, like these other two estimates, behind the *Reichsindex* there were efforts to make nationally representative estimates. In contrast to the Argentine CLI, all three indices were perceived initially as socio-labour statistics and had uneven trajectories. These points are reconsidered in Chapter VI.

Conclusion

In the nineteenth century statistics became an important feature of nascent nation states, complementing their judicial and political attributes. Statistics’ legitimacy came from its hybrid character of combining scientific and administrative state practices, as the sociology of quantification literature argues. As Platt suggests, historical data should not be taken for granted. It is produced by particular actors with particular interests, in particular contexts. To finish setting the theoretical framework of this thesis that began in the Introduction, this chapter has provided the general background on the meaning and history of statistics to explain how the sociology of quantification literature agrees with Platt. It has also outlined the origins and early trajectory of three national CLIs. Thus, the content of this chapter

²⁰⁷ Ibid., p. 154.

presents the international context in which the Argentine index was first published, as well as the environment in which the second index was released, contributing to the understanding of the Argentine indicators. As discussed in the Introduction, it is to this literature that this thesis makes the largest contributions, particularly by suggesting a three-step methodology that enhances the understanding of statistics perceived as historical sources.

The first section of this chapter depicted the rise of statistical reasoning, seen as the combination of the rules of the science of probability and the needs of public policy. This fusion created an administrative context whereby human resources, technical language, methodologies and tools join to generate and accumulate information, constituting a national statistical system. As part of the process of state building, gathering statistical data reflects a complex political and bureaucratic mechanism that fosters discussion and debate. All this then feeds back into the legitimisation of the state. In moments of uncertainty, related to wars or economic downturns, statistics become a particularly powerful tool to overcome it. All these elements constitute crucial dimensions of the history of the Argentine CLI, which in turn, Chapter III will argue, influenced the history of the Argentine statistical system.

The review of CLIs in the second section of this chapter demonstrated that indices are not perfect and that there have been many debates around them before they became crucial depoliticisation mechanisms. This thesis suggests that the three histories show that their trajectories are subject to discontinuous progress, much as was the case in Argentina. Not only were indices not established immediately, not least due to struggles between different sectors, but statistical blackouts also occurred. Reaching a consensus amongst the different sectors of society was essential for the CLIs to become a trustworthy guide with practical uses, despite their methodological failures and the theoretical debate around them. In all cases, the indices were official estimates, which influenced their perceived reliability. Moreover, from the beginning, they were all national indices. WWI was a turning point in the history of CLI theory and practice as prices rose sharply and consumption patterns shifted. Due to their use in arbitration or collective bargaining agreements, cost of living figures have financial implications, which influence the (lack) of questioning of their methodology. These characteristics suggest the need to consider the political economy when analysing the history of CLIs, a fundamental factor behind the Argentine indicator. Unlike the latter case, in none of these histories was there a significant role for the ILO's conference of statisticians. Along these lines, this thesis provides another example of how statistics is not unique *per se*, nor is it static, suggesting that all case studies must be analysed in their own right. A comparison of

different national indices, as pursued in Chapter VI, provides more insight into the history of CLIs.

Several relevant issues discussed in the Introduction and in this chapter are taken up throughout this thesis. Context matters: the development of statistical knowledge depends on the historical, political, economic and social contexts. In turn, institutions and the state are partly reshaped by statistics. Consequently, statistics is not just numbers or a mathematical discipline, but rather a logic of inquiry, a practice of government and a rhetorical mode.²⁰⁸ It helps objectify the economy, the labour world and the nation. This suggests that statistics is not static. Countries went statistical following their own individual trajectories, but each in its own way developed similar institutions to produce public numbers. As Desrosières shows, the differences between states are reflected in the histories of their statistical systems.²⁰⁹ Country trajectories also relate to the (lack of) influence of international developments. The pressure to follow global standards as well as the need to live up to what was happening elsewhere, as Curtis, Loveman, Patriarca and this thesis show, shaped domestic statistics.²¹⁰ The history of statistics is a part of an international or transnational venture, where the ISC, the ISI, and the ILO's statistical conferences played a fundamental, although not always crucial, role. Moreover, the existing state of the art and the individuals that are behind the indicators impacted upon the numbers produced. Individuals' knowledge, political connections and aspirations are an important part of the process, which is demonstrated in this thesis by analysing Bunge and Figuerola's public lives in conjunction with the production of each CLI.

²⁰⁸ Prévost and Beaud, *Statistics*, p. 4.

²⁰⁹ Desrosières, *The Politics*, pp. 147-209.

²¹⁰ Curtis, *The Politics*; Loveman, *National Colors*; Patriarca, *Numbers and Nationhood*.

Chapter III - The Argentine national statistical system, 1869-1943

Julián Bertranou et al argue that the Argentine state has been historically deficient in the generation and preservation of public information and in the feedback connection between the academic sphere and state institutions.²¹¹ However, Platt,²¹² Díaz Alejandro²¹³ and Felix Weil²¹⁴ highlight the quality and quantity of statistics produced early on in Argentina. Yet the historical analysis of Argentina’s public statistics is relatively unexplored territory. In part, this is due to the intricate trajectory, depicted in Figure 2, of Indec, the country’s main statistical office.

Figure 2: The Indec, the result of a long-term process

Year created	Agency's name	Dependency it belonged to
1864	Office of National Statistics (<i>Oficina de Estadística Nacional, OEN</i>)	Ministry of Finance
1876	Commercial Statistics Office (<i>Oficina de Estadística Comercial, OEC</i>)	Ministry of Finance
1884	National Department of Statistics (<i>Departamento Nacional de Estadística, DNE</i>)	Ministry of Finance
1894	General Bureau of Statistics (<i>Dirección General de Estadística de la Nación, DGEN</i>)	Ministry of Finance
1943	General Bureau of Statistics and Censuses (<i>Dirección General de Estadística y Censos</i>)	Ministry of Finance
1944	National Board of Statistics and Censuses (<i>Consejo Nacional de Estadística y Censos</i>)	Interior Ministry
1946	National Bureau of Reseach, Statistics and Censuses (<i>Dirección Nacional de Investigaciones, Estadística y Censos</i>)	Home Office and Technical Secretariat of the Presidency
1950	General Bureau of Statistical Service (<i>Dirección General del Servicio Estadístico</i>)	Ministry of Technical Affairs
1952	National Bureau of Statistical Service (<i>Dirección Nacional del Servicio Estadístico</i>)	Ministry of Technical Affairs and Ministry of Finance
1956	National Bureau of Statistics and Censuses (<i>Dirección Nacional de Estadística y Censos</i>)	Ministry of Finance
1968	National Institute of Statistics and Censuses (<i>Instituto Nacional de Estadísticas y Censos, INDEC</i>)	Ministry of Economy

Sources: author’s elaboration based on Daniel, ‘El estado argentino’, p. 152; González Bollo, ‘La estadística pública’, pp. 65-6; Mentz, ‘Sobre la historia’, p. 507.

The General Bureau of Statistics (*Dirección General de Estadística de la Nación, DGEN*) was the first state agency to collect national data. Raúl Mentz identifies it as Indec’s

²¹¹ J. Bertranou et al, ‘Introducción’, in Bertranou et al (eds.), *En el país del no me acuerdo*, pp. 11-15.

²¹² Platt, *Mickey Mouse Numbers*, p. 35.

²¹³ Díaz Alejandro, *Ensayos*, p. 380.

²¹⁴ F. Weil, *The Argentine Riddle*, New York, 1944, pp. 222-97.

predecessor,²¹⁵ although other authors find antecedents further back.²¹⁶ Figure 2 shows that Indec resulted from a long historical process that is indicative of Argentina's early concern with statistics.²¹⁷

Mentz was the principal scholar of Argentine public statistics until the mid-1990s.²¹⁸ Since then, however, interest has increased, fostered by the Indec crisis mentioned in the Introduction. While some authors have the national statistical system at the centre of their study, others, aiming to comprehend different issues, only look at aspects of it. This thesis suggests that despite the quantity of numbers it produced – agreeing with Platt, Díaz Alejandro and Weil –, the weakness of the Argentine statistical system in the first half of the twentieth century related to the quality and periodicity of public statistics – specifically the CLI, one of its crucial elements – in line with Bertranou et al.

Before analysing the ideas, institutions and individuals behind the first two Argentine CLIs, the domestic statistical context in which the estimates were developed must be understood. Sociology of quantification examines the dynamics of the national statistical system because statistics is not static and changes in response to shifts in context. Non-neutral numbers contribute to state knowledge and the appropriation and generation of a national reality. Research on Argentine public statistics following this approach is mainly carried out by Daniel, González Bollo and Otero. Their investigations concentrate on the period between the first (1869) and the fourth (1947) national censuses.²¹⁹ They focus on the link between the Argentine statistical system and the state by analysing the combination between the science of probability and public policy, and how the administrative context, human resources, technical language, methodologies and tools together generate and accumulate information. Consequently, the history of the Argentine statistical system between 1869 and 1943 depicted in this chapter is built on their work. These authors provide the necessary, essential examination of the Argentine statistical system from the sociology of

²¹⁵ R. Mentz, 'Sobre la historia de la estadística oficial argentina', *Estadística Española*, 33:128, 1991, p. 506.

²¹⁶ C. Daniel, 'El estado argentino y sus estadísticas. El derrotero de un largo proceso de institucionalización (1864-1968)', *Illapa*, 2:5, 2009, p. 152; H. González Bollo, 'La estadística pública y la expansión del estado argentino: una historia social y política de una burocracia especializada (1869-1947)', PhD diss., Universidad Torcuato Di Tella, 2007, pp. 65-6; M. Novick, 'Aspectos jurídico-políticos de los censos en la Argentina', *Documento de Trabajo del Instituto de Investigaciones Gino Germani*, 39, 2004, pp. 5-7.

²¹⁷ Daniel, 'El estado', p. 152; Novick, 'Aspectos', p. 3.

²¹⁸ Mentz, 'Sobre la historia'.

²¹⁹ Though not exclusively, see C. Daniel, *Números públicos*, Buenos Aires, 2013; C. Daniel, 'Modernización desarrollista y estadísticas sociales en Argentina', paper presented at 38th Annual Meeting of the Social Science History Association, Chicago, 21-23 November 2013; H. González Bollo, 'Estado, ciencia y sociedad: Los manuales estadísticos y geográficos en los orígenes de la Argentina moderna, 1852-1876', *Anuario IEHS*, 14, 1999, pp. 23-42; H. González Bollo, 'Retomando la rutina perdida: la Dirección Nacional de Investigaciones, Estadística y Censos (1946-1949)', paper presented at Segundo Congreso de Estudios sobre el Peronismo (1943-1976), Universidad Nacional Tres de Febrero, 4-6 November 2010.

quantification perspective needed to be able to de-construct/construct/re-construct one of its crucial indicators. That is, Daniel, González Bollo and Otero supply the background research on Argentina's statistical organisations as systems of power and knowledge that is required to then analyse statistics as historical sources.²²⁰

González Bollo's periodisation of the national statistical system conceived as the *fábrica de las cifras oficiales* (factory of official figures)²²¹ is pursued here because his work is comprehensive and this thesis shows that the history of the Argentine CLI has a similar pattern.²²² He defines the *fábrica* as the dynamic and decentralised network of offices with dissimilar administrative capacities located in different Argentine ministries, which operated within a larger context of administrative dispersion, and regularly produced numbers between 1869 and 1947. However, this chapter and the history of the CLI developed in this thesis suggest a twist in the notion of *fábrica*, by proposing that of *talleres* (workshops), as is explained later on. In contrast to Daniel, González Bollo and Otero, this chapter argues that the system's trajectory was one of discontinuous progress. It also suggests a close relationship between Bunge and the monetary allocations of the system, and claims that the General Bureau of Railways (*Dirección General de Ferrocarriles*, DGFFCC)²²³ should be considered part of it. Moreover, the de-construct/construct/re-construct methodology used in this thesis advances the existing literature on the Argentine statistical system by establishing, in Chapter IV, a tight link between Bunge and the CLI, which influenced the sombre period. In Chapter V, there is evidence that Figuerola acted as head of the Statistical Division (*División de Estadística*, DE) of the DNT before being officially named. The advances of the three-step methodology can only be understood on the basis of the analysis of the history of the Argentine national statistical system carried out in this chapter.

The period starts with the beginning of the Argentine statistical era,²²⁴ when public statistics were being configured and consolidated. It ends in 1943 because the coup in June of that year and Juan Domingo Perón's prominence thereafter led to changes in the administrative structure of the statistical system, pushing it towards greater centralisation.

²²⁰ Apart from Daniel, González Bollo and Otero, other scholars tangentially shed light on the Argentine statistical system. Their research is referenced here, but only analysed if it is relevant to this thesis. To distinguish the works of the three authors from those that contribute from a distance, the works of the former guide the main text, while the others are only mentioned in the footnotes.

²²¹ The periodisation follows González Bollo, *La fábrica*.

²²² For a normative and legal periodisation, see Novick, 'Aspectos', p. 73.

²²³ It had different names throughout its existence.

²²⁴ Otero, 'Crítica de la razón estadística', pp. 299-330.

Also that year, the DNT became the Labour and Social Welfare Secretariat (*Secretaría de Trabajo y Previsión*, STyP), and its DE was transformed into the Bureau of Social Statistics (*Dirección de Estadística Social*, DES).²²⁵ Given the years covered in this thesis, particular emphasis is placed on the periods of González Bollo that overlap with them. Within this long time span, special attention is here paid to the DGEN and the DE of the DNT, given that they are the key statistical institutions covered in this research, and also to Bunge and Figuerola, the men behind the CLIs. The analysis of each agency and individual will, nonetheless, be restricted by the amount of existing literature on each.

To account for the history of the Argentine statistical system between 1869 and 1943, the chapter is structured as follows. The first section depicts the configuration of the system (1869-1898). It is followed by the analysis of its consolidation (1900-1916/7). The third part analyses the methodological and cognitive revolution of Argentine public statistics (1916/7-1932) to then consider the advance of state managers (1932-1943). The last section concludes.

Configuration, 1869-1898

Until the election of Julio A. Roca in 1880, Argentina was still undergoing its ‘national organisation’, setting its political, legal and economic foundations.²²⁶ A conservative-liberal regime consolidated after 1880.²²⁷ Together with the centralisation of the administrative and governance capacities of the national state,²²⁸ an apparatus to produce knowledge gradually took shape. The relevance gained by statistics was founded on the administration’s need to be based on scientific principles, a pre-requisite of modern states highlighted in Chapter II. This was the period of the configuration of a specialised bureaucracy,²²⁹ which set the grounds for the development of a decentralised national statistical system, fostered economic transactions, mobility and settlement of the immigrant workforce, and made the nation.

²²⁵ González Bollo, *La fábrica*, pp. 219-49. As for the norms passed, see Novick, ‘Aspectos’, p. 73.

²²⁶ T. Halperin Donghi, *Una nación para el desierto argentino*, Buenos Aires, 1982; R. Hora, *Historia económica argentina del siglo XIX*, Buenos Aires, 2010.

²²⁷ Until the 1916 elections, a restrictive electoral system existed that guaranteed the predominance of the beneficiaries of the agricultural export model. See N. Botana, *El orden conservador. La política argentina entre 1880 y 1916*, Buenos Aires, 1985; Cortes Conde, *El progreso argentino*; E. Gallo and R. Cortes Conde, *La república conservadora*, Buenos Aires, (1984) 2005; J.F. Sábato, *La clase dominante en la Argentina moderna: formación y características*, Buenos Aires, 1988.

²²⁸ O. Oszlak, *La formación del Estado Argentino*, Buenos Aires, 1999.

²²⁹ Ricardo Salvatore examines the expansion of expert bureaucracies more broadly and their contribution to public goods provision between 1870 and 1930, R.D. Salvatore, ‘Between *Empleomanía* and the Common Good: Expert Bureaucracies in Argentina (1870-1930)’, in M.A. Centeno and A.E. Ferraro (eds.), *State and Nation Making in Latin America and Spain: Republics of the Possible*, Cambridge:MA, 2013, pp. 225-46.

The decentralised network of statistical agencies was formed, as González Bollo explains, by the Department of Immigration (*Departamento General de Inmigración*, DGI), the Rural Economy and Statistics Bureau (*Dirección de Economía Rural y Estadísticas*, DERE),²³⁰ the Commerce and Industry Bureau (*Dirección General de Comercio e Industria*, DGCI), the National Demographic Office (*Oficina Demográfica Nacional*, ODN) and the DGEN. Seven national censuses were taken, focusing, for example, on immigration, foreign trade, and agriculture, which were all topics related to the ruling elite's concerns for a country endowed with vast and fertile land that was entering the world economy as an exporter of commodities but that lacked sufficient human resources. An important statistical agency that Daniel, González Bollo and Otero ignore was the DGFFCC, created in 1888.²³¹ An 1891 decree established that railway statistics should be collected by it, and was released annually in *Statistics of Railways in Operation* (*Estadísticas de los ferrocarriles en explotación*). This again illustrates how the interests of the ruling elite determined what statistics would be collected, as railways were considered fundamental to Argentina's economic development. The DGFFCC was therefore tasked with collecting data from the railway companies and publishing it. Today its statistics are still seen as reliable and legitimate.²³²

The Ministry of Finance's need to organise the public accounts, especially during the foreign trade crises of 1873/6 and 1890, fostered the expansion and methodological enhancement of economic statistics.²³³ In 1894, Law 3,180 was enacted, transforming the National Department of Statistics (*Departamento Nacional de Estadísticas*, DNE) into the DGEN, which established statistical confidentiality. The law generated an office with the

²³⁰ For a sociology of quantification analysis, see H. González Bollo; 'Transformar la campaña argentina: los expertos de la Dirección de Economía Rural y Estadística del Ministerio de Agricultura, promotores de la cooperación rural (1907-1930)', in E. Bohoslavsky and G. Soprano (eds.), *Un estado con rostro humano: funcionarios e instituciones estatales en Argentina: de 1880 a la actualidad*, Buenos Aires, 2010, pp. 121-50; H. González Bollo, 'Medir el agro argentino: la Dirección de Economía Rural y Estadística, Ministerio de Agricultura, 1898-1948', *Estadística e Sociedade*, 1, 2011, pp. 104-26. Views that analyse overall rural developments considering the DERE include T. Halperín Donghi, 'Canción de otoño en primavera: previsiones sobre la crisis de la agricultura cerealera argentina (1894-1930)' *Desarrollo Económico*, 24:95, 1984, pp. 36-86; C. Solberg, 'Descontento rural y política agraria en la Argentina, 1912-1930', in M. Giménez Zapiola, *El régimen oligárquico. Materiales para el estudio de la realidad argentina (hasta 1930)*, Buenos Aires, 1975, pp. 246-311.

²³¹ See E. Salerno, 'Los comienzos del Estado empresario: la Administración General de los Ferrocarriles del Estado (1910-1928)', *Documento de Trabajo CEED*, 6, 2003; E. Salerno, 'La burocracia técnica de los ferrocarriles del estado en Argentina, 1910-1948', paper presented at IV Congreso de Historia Ferroviaria, Málaga, 20-22 September 2006.

²³² A. Herranz Loncán, 'El impacto directo del ferrocarril sobre el crecimiento económico argentino durante la primera globalización', *Revista Uruguaya de Historia Económica*, 1, 2011, p. 39. However, Salerno highlights that contemporaries doubted this, E. Salerno, 'La construcción de una empresa estatal: la Administración General de los Ferrocarriles del Estado a la luz de la Historia de Empresas (1910-1943)', paper presented at the workshop La empresa ayer y hoy. Nuevas investigaciones y debates, Buenos Aires, 13-14 June 2005, p. 6.

²³³ González Bollo, *La fábrica*, pp. 66-75.

administrative autonomy to elaborate statistics. The budgetary allocation of the DGEN tripled, staff increased and research topics expanded.²³⁴ Nevertheless, the 1894 Law did not mention the collection of price data.²³⁵

González Bollo highlights that in these configuration years, politics had a hesitant attitude towards statistical authorities. While Congress approved several censuses, it did not sanction decennial population censuses or update the apportionment mechanism dictated by the 1853 Constitution. Afraid that the growth of the Federal District and the provinces of Buenos Aires and Santa Fe would alter representation in favour of these constituencies, lawmakers of the Interior and of some Littoral districts opposed the population enquiry.²³⁶ The lack of regularity in the demographic census extended throughout the first half of the twentieth century. Much as Margo Anderson argues for the United States,²³⁷ the depoliticisation aimed at when establishing apportionment became extremely politicised, which shows that numbers are not neutral.

Otero demonstrates that the 1869, 1895 and 1914 national population censuses were discursive matrices, functional to building a specific image of the Argentine. Rather than being an instrument of unquestionable neutrality, demographic statistics had an ideological undertone.²³⁸ Following ISC recommendations, like its Latin American peers, Argentina's censuses combined official numbers with descriptions to determine the country's degree of civilisation. Daniel argues that between 1869 and 1914 official statistics posed a synthesised description of the nation, becoming the first Argentine social observatory, showing traces of German *Statistik*. She highlights that statistics reinforced an image of an urban, modern and healthy society, the product of the bonding of nationals and immigrants,²³⁹ but also fostered representation of dangers behind urban life. Moral statistics, *à la* Hacking, began to be elaborated.²⁴⁰

²³⁴ H. González Bollo, 'Para medir el progreso de la Argentina moderna. Formación y consolidación de una burocracia estadística en el Estado conservador', MSc diss., Universidad Torcuato Di Tella, 2000, p. 63.

²³⁵ *Ibid.*, p. 71.

²³⁶ H. González Bollo, 'Sobre la amenazante mayoría de dos provincias y una ciudad: los tres primeros censos demográficos y su impacto político en la Argentina (1853-1920)', *Estadística Española*, 52:174, 2010, pp. 299-319.

²³⁷ Anderson, *The American Census*.

²³⁸ *Estadística y Nación* is Otero's *magnum opus*. See also H. Otero, 'Estadística censal y construcción de la Nación. El caso argentino, 1869-1914', *Boletín del Instituto de Historia Argentina y Americana "Dr. Emilio Ravignani"*, 3:16-7, 1999, pp. 123-149; H. Otero, 'Demografía política e ideología estadística en la estadística censal argentina, 1869-1914', *Anuario IEHS*, 14, 1999, pp. 43-70.

²³⁹ C. Daniel, 'Un imaginario'.

²⁴⁰ Hacking, *The Taming*, C. Daniel, 'Medir la moral pública. La cuantificación del delito en Buenos Aires, 1880-1910', *Estadística e Sociedade*, 1, 2011, pp.149-65. For another perspective on moral statistics, see R.D. Salvatore, 'Criminología positivista, reforma de prisiones y la cuestión social/obrera en Argentina', in J.

Throughout this period, regional distrust, administrative order and optimism founded upon the notion of progress coexisted. Numbers were needed for administrative reasons. The decentralised statistical system was configured through political, institutional, and statistical tasks.²⁴¹ For González Bollo, the topics researched depict the achievements and limits of the expansion of public activity. The themes constructed and stabilised a national reality determined by immigration, the location of agricultural colonies and external trade. The configuration of the specialised bureaucracy contributes to the understanding of the existing power relations within the state and the influence of the better-organised interest groups. Towards the end of the nineteenth century, the Argentine was an “informed state, according to the routines and methodologies developed by specialists and put forward in the academic-scientific circuits of the western metropolis”.²⁴²

Consolidation, 1900-1916/7

As the economy diversified and society became more complex, the state was transformed. To keep up with these changes, the decentralisation of public statistics was reinforced, leading to its consolidation. For González Bollo, consolidation implied that the number of formally-employed individuals increased substantially, together with the amount of institutions with statistical agencies. The “production platform of original knowledge”²⁴³ developed in the Agriculture, Finance and Interior Ministries.²⁴⁴ The national statistical system improved its internal organisation, recruiting bureaucrats and introducing stable routines. Related to the birth of the social question and the subsequent rise in conflict, urbanisation became another theme of enquiry.²⁴⁵

González Bollo describes the national statistical system in this period as a three-storey building: the DGEN and the DERE at the top; followed by the DE and the DGI; and the ODN, the DGCI and the Demography and Medical Geography Section (*Sección Demografía y Geografía Médica*, SDGM) of the National Health Department (*Departamento Nacional de*

Suriano, *La cuestión social en la Argentina, 1870-1943*, Buenos Aires, 2000, pp.127-58; R.D. Salvatore, ‘Sobre el surgimiento del estado médico legal en la Argentina (1890-1940)’, *Estudios Sociales*, 2001, 20, pp. 81-114.

²⁴¹ Daniel, ‘El estado’, p. 152.

²⁴² González Bollo, *La fábrica*, p. 39, author’s translation.

²⁴³ *Ibid.*, p. 79, author’s translation.

²⁴⁴ *Ibid.*, pp. 108-17.

²⁴⁵ Authors that link the social question, demand for information, public policy and statistical agencies include Golbert, *De la sociedad*; L. Golbert and E. Rocca, ‘Desde la sociedad de beneficencia a los derechos sociales’, *Revista de Trabajo*, 6:8, 2010, pp. 29-51; J. Suriano, ‘El estado argentino frente a los trabajadores urbanos: política social y represión (1880-1916)’, *Anuario*, 14, 1991, pp. 109-16; J. Suriano, ‘Notas sobre los primeros pasos en política social del estado argentino a comienzos del siglo XX’, *Cuadernos del Ciesal*, 1:1, 1994, pp. 9-20.

Higiene, DNH)²⁴⁶ at the bottom. The difference between the offices in the top two levels and the rest was the formers' ability to maintain a stable routine. The DGEN had a leading role, collecting external trade, public revenue and expenditure figures. In 1900 it had a permanent employee base of 30, reaching 51 in 1915, with vacancies filled through promotion.²⁴⁷

The DNT, part of the Interior Ministry, was created in 1907 to “collect, coordinate and publish all the information related to the Republic’s labour, especially concerning the relationship between capital and labour, and with respect to the administrative and legislative reforms capable of improving the material, social, intellectual and moral situation of workers”.²⁴⁸ It was a proposal of lawyers and Social Catholics, rather than a result of pressures from labour market participants. The aim was to develop non-coercive state policy that would benefit the working class,²⁴⁹ which suggests that the underlying principle was that the state should intervene in social matters. Indeed, Social Catholics wanted to understand the situation of the working class in order to legislate.²⁵⁰ Despite surviving different governments, the administrative functions of the DNT persisted and expanded,²⁵¹ and so did its foundational project as regulator in capital-labour relationships.²⁵² Its DE began to impose a quantitative grid as the official cognitive matrix for understanding the working class,

²⁴⁶ For research on the DNH, see R. González Leandri, ‘Breve historia del Departamento Nacional de Higiene. Estado, gobernabilidad y autonomía médica en la segunda mitad del siglo XIX’, in Bohoslavsky and Soprano (eds.), *Un estado con rostro humano*, pp. 59-83.

²⁴⁷ González Bollo, *La fábrica*, pp. 80-7.

²⁴⁸ *BDNT*, ‘Creación del DNT’, 1:1, 1907, pp. 19-20, author’s translation.

²⁴⁹ G. Soprano, ‘El Departamento Nacional de Trabajo y su proyecto de regulación estatal de las relaciones capital-trabajo en Argentino. 1907-1943’, in J. Panettieri (ed.), *Argentina: trabajadores entre dos guerras*, Buenos Aires, 2000, pp. 31-54. For the DNT’s history, see G. Soprano, ‘“Haciendo inspección”. Un análisis del diseño y aplicación de la inspección laboral por los funcionarios del Departamento Nacional de Trabajo (1907-1914)’, in Bohoslavsky and Soprano (eds.), *Un estado con rostro humano*, pp. 85-119; J. Suriano, ‘El Departamento Nacional del Trabajo y la política laboral durante el primer gobierno de Hipólito Yrigoyen’ in M. Ben Plotkin and E.A. Zimmermann (eds.), *Los saberes del Estado*, Buenos Aires, 2012, pp. 35-62. Studies that analyse DNT outputs (laws and numbers) include M.Z. Lobato, ‘Instituciones laborales, funcionarios y política: notas a partir de un proyecto de investigación’, *Revista de Trabajo*, 6:8, 2010, pp. 105-17; J.M. Palacio, ‘Legislación y justicia laboral en el ‘populismo clásico’ latinoamericano: elementos para la construcción de una agenda de investigación comparada’, *Revista Mundos do Trabalho*, 3:5, 2011, pp. 245-65; K. Ramaciotti, ‘De la culpa al seguro. La Ley de Accidentes de Trabajo, Argentina (1915-1955)’, *Revista Mundos do Trabalho*, 3:5, 2011 pp. 266-84.

²⁵⁰ Paralleling the trends mentioned in Chapter 2, the notion of observing in order to legislate comes from O.G. Brunati et al., ‘Observar para legislar. Métodos etnográficos e inspección del trabajo en la Argentina a principios del siglo XX’, in S. Visacovsky and R. Guber, *Historias y estilos de trabajo de campo en la Argentina*, Buenos Aires, 2002, pp. 79-126.

²⁵¹ H. González Bollo, ‘La cuestión obrera en números: la estadística socio-laboral y su impacto en la política y la sociedad, 1895-1943’, in Otero (ed.), *El mosaico argentino*, pp. 345-58.

²⁵² Soprano, ‘El Departamento’, contradicting E. Garguin, ‘Relaciones entre estado y sindicatos durante los gobiernos radicales: 1916-1930’, in Panettieri (ed.), *Argentina*, pp. 87-117; D. Rock, *El radicalismo argentino, 1890-1930*, Buenos Aires, 1997; Zimmerman, *Los liberales reformistas*.

allowing government actions to be based on scientific principles.²⁵³ According to González Bollo, the hierarchisation of the socio-labour data of the DE was a consequence of: the enactment in 1912 of Law 8,999, which produced the DNT's legal framework; the participation of Social Catholic experts,²⁵⁴ which defined the social space of the working class; and the regular use of its outputs. In 1912 a list of variables to be measured was established, including the prices of working class consumption goods.²⁵⁵ Between 1913 and 1915, Bunge, a Social Catholic, headed the DE.²⁵⁶ With his publication of *La desocupación en la República Argentina*²⁵⁷ began the official registry of the labour and urban worlds.²⁵⁸ Among other topics, Bunge introduced family budget surveys, following Le Play's monograph model. The methodology to determine the average worker's budget mimicked Engel's average of all the cases collected.²⁵⁹ The DE did not collaborate in the national censuses and the labour world "was a veiled reality for the census records".²⁶⁰ In 1914 the DE had a peak of fourteen employees and a financial allocation of around m\$800,000.²⁶¹ In 1915 and 1916 they dropped to eight and m\$300,000, which was similar to the 1913 level of ten and m\$354,000.²⁶² The 1913 figures suggest that the decline related to the effects of WWI, rather than indicating any reduction in Bunge's influence within the statistical system. Given the relationship between its personnel and the amount of information produced, the DE had "very high labour productivity",²⁶³ a result of its linkages with other divisions in the department.²⁶⁴

²⁵³ C. Daniel, 'L'objetivation des risques, le langage des certitudes. Les statistiques du travail en Argentine pendant le période 1930-1943', *Sociologie et Sociétés*, 43:2, 2011, pp. 177-200.

²⁵⁴ The Socialist Party was against the appointment of the Social Catholics in 1912, leading to a permanent questioning of the DE's statistical practices. González Bollo, 'Para medir', p. 117.

²⁵⁵ *BDNT*, 'Funciones de la División Estadística. Ley 8999', 30, 1915, p. vi.

²⁵⁶ Bunge, born in Buenos Aires in 1880, died there in 1943. For research on Bunge see J.L. De Imaz, 'Alejandro E. Bunge, economista y sociólogo', *Desarrollo Económico*, 55, 1974, pp. 545-67; M. Falcoff, 'Economic Dependency in a Conservative Mirror: Alejandro Bunge and the Argentine Frustration, 1919-1943', *Inter American Economic Affairs*, 4:35, 1982, pp. 57-75; J.J. Llach, *La Argentina que no fue*, Buenos Aires, 1985; J. Pantaleón, 'El surgimiento de la nueva economía argentina: el caso Bunge', in Neiburg and Plotkin (eds.), *Intelectuales y expertos.*, pp. 175-201; Pantaleón, *Una nación*.

²⁵⁷ Ministerio del Interior, *La desocupación en la República Argentina*, Buenos Aires, 1915.

²⁵⁸ H. González Bollo, 'Ciencias sociales y sociografía estatal. Tras el estudio de la familia obrera porteña, 1899-1932', *Estudios Sociales*, 9:16, 1999, pp. 20-2; González Bollo, 'La cuestión obrera', pp. 345-8.

²⁵⁹ Bunge was surrounded by Engel's ideas while studying in Germany, González Bollo, 'Ciencias sociales', p. 27.

²⁶⁰ González Bollo, *La fábrica*, p. 114, author's translation.

²⁶¹ m\$ refers to the currency at that time, the *peso moneda nacional*. The budget estimate is produced using figures from González Bollo, 'Ciencias sociales', p. 37; González Bollo, 'Para medir', p. 117; González Bollo, 'La estadística pública', p. 117, figure 5.

²⁶² Figures from González Bollo, 'Para medir', p. 117; González Bollo, 'La estadística pública', p. 117, figure 5.

²⁶³ González Bollo, *La fábrica*, p. 83, author's translation.

²⁶⁴ Daniel, 'L'objetivation', p. 178.

Following Hacking, González Bollo identifies an “authentic census avalanche”²⁶⁵ in this period, on different topics with dissimilar geographical coverage, including the third national population census. These enquiries consolidated a routine that combined technical resources, political support and the cooperation of society, even as politics continued to play a fundamental role in delaying the population census.²⁶⁶ Anticipating the resistance to each census, statisticians conducted extensive advertising before taking them.²⁶⁷ Despite these activities, this thesis suggests that citizens distrusted statistics,²⁶⁸ which impacted on the CLI, as shown in Chapter IV.

The modernisation of the state and its functions generated a demand for specialised public statistics with defined powers, established regulations, hierarchies and intellectual autonomy. The amount and type of information collected allowed different interpretations of and solutions to the changing economic and social situations. Statisticians positioned themselves within different places of the ideological spectrum: from the liberal, free trade orthodoxy that aimed at maintaining the *status quo* to those that started to develop “meta-sectoral illustrations of the economy”.²⁶⁹ Incipiently, headed by Bunge, a vision that favoured expansive, countercyclical economic policies and saw the potential of the domestic market began to emerge, although it needed a new image of the nation. In turn, “the decision-making power and professionalism reached by public statistics became fundamental components of the modern liberal Argentine state”.²⁷⁰ Despite a common claim in the literature that he moved directly from the DE, it was only after several months away from the national statistical system that Bunge became head of the DGEN.²⁷¹ This indicates that liberal statisticians with reformist ideas began to be substituted for by heterodox thinkers, bringing an end to the period of “signature statistics”.²⁷²

²⁶⁵ González Bollo, *La fábrica*, p. 90, author’s translation.

²⁶⁶ *Ibid.*, pp. 89-98.

²⁶⁷ González Bollo, ‘Para medir’, p. 80.

²⁶⁸ Novick identifies distrust as one of the main obstacles to the development and consolidation of statistical activity in Argentina, Novick, ‘Aspectos’, p. 87.

²⁶⁹ González Bollo, *La fábrica*, p. 80, author’s translation.

²⁷⁰ González Bollo, ‘La estadística pública’, p. 107, author’s translation.

²⁷¹ Caravaca and Plotkin, Daniel, De Imaz, and Pantaleón claim that Bunge moved directly from the DE to the DGEN in 1915. For González Bollo this happened in 1916. However, Bunge left the DE in 1915 and became the head of the DGEN in September 1916. See *REA*, ‘Alejandro E. Bunge’, 25:300, 1943, p. 187; A.E. Bunge, ‘Publicaciones de la estadística nacional’, *REA*, 3:27-28, 1920, p. 275.

²⁷² H. Otero, ‘La historia de la estadística en las universidades y en los institutos nacionales de estadística. El caso argentino’, in N.de.C. Senra and A.P.R. Camargo (eds.), *Estadísticas nas Américas: por uma agenda de estudos históricos comparados*, Rio de Janeiro, 2010, pp. 68-71.

Silent revolution and transformation, 1916/7-1932

For much of the interwar period, Argentina experienced a gradual expansion of citizen participation in politics, rapid economic growth²⁷³ with an increase in the share of manufacturing in economic activity, and the subsequent rise in the number of industrial workers.²⁷⁴ Trade crises, disruptions and increasing social unrest – such as the *Semana Trágica* (Tragic Week),²⁷⁵ which has an important role in the history of the Argentine CLI, as Chapter VI explains – impacted on the state's bureaucratic structure and the economy's diversification. According to González Bollo, Radical Party (*Union Cívica Radical*, UCR) administrations (1916-1930) developed public statistics to enhance the knowledge of the changing domestic economy. Between 1916 and 1930, the national funds allocated to statistical agencies rose from m\$573,000 to m\$1.2 million.²⁷⁶ Throughout this period, public statistics experienced a cognitive and methodological revolution, producing an embryonic interpretation of the economy from a macro perspective. The existing agencies renewed their position in the national statistical system due to innovation and structural changes. Statisticians had multiple parallel tasks: they were the technicians, government advisors and scientific consultants of the private sector. They had a new sphere of action, designing measures within an economic programme.²⁷⁷ The period of “anonymous statistics” began.²⁷⁸

The DGEN and the DERE continued to be the most powerful agencies, joined by the DE and the newly-formed Office of Development, Economics and Statistics (*Oficina de Fomento, Economía y Estadística*), part of the national bank, *Banco de la Nación Argentina*.²⁷⁹ Routines became increasingly impersonalised and focused, as tasks were

²⁷³ Between 1918 and 1928, the economy grew almost as intensely as the first fifteen years of the twentieth century, P. Gerchunoff and H. Aguirre, ‘La economía argentina entre la gran guerra y la gran depresión’, *Serie Estudios y Perspectivas*, 32, 2006.

²⁷⁴ This period is seen as the ‘great delay’, see Di Tella and Zymelman, *Las etapas*.

²⁷⁵ In a nutshell, a series of strikes, demanding less working hours as well as pay rises, occurred in the Vasena metal works in the City of Buenos Aires towards the end of 1918. The protest continued until January 7, when the police intervened and five workers were killed. A new clash between the workers and the police, followed by more deaths, occurred in the premises of the cemetery when the workers were going to be buried. This led to a general strike after which the government conceded to the workers' demands, E. Bilsky, *La semana trágica*, Buenos Aires, 1984. In fact, after the *Semana Trágica*, the efficiency of Yrigoyen's interventions to deal with labour conflicts declined. In 1921, he abandoned that strategy, an attitude that his successor, Alvear, maintained. See Garguin, ‘Relaciones entre estado’, pp. 103-6; J. Horowitz, ‘Argentina's Failed General Strike of 1921: A Critical Moment in the Radicals' Relations with Unions’, *Hispanic American Historical Review*, 75, 1995, pp. 57-80.

²⁷⁶ González Bollo, ‘La estadística pública’, p. 164, figure 8.

²⁷⁷ González Bollo, *La fábrica*, p. 123.

²⁷⁸ Otero, ‘La historia de la estadística’, pp. 71-5.

²⁷⁹ In 1928 it was re-named Office of Economic Research (*Oficina de Investigaciones Económicas*, OIE). Its origins are discussed in G.A. Portoniero, ‘La formación de una elite técnica estatal en la Argentina durante el

mechanised. A crucial step in this revolution involved hiring university students and graduates with statistical training,²⁸⁰ together with the introduction of index numbers in 1917 and IBM's Hollerith punch-card machines in 1925.²⁸¹ Punch-card machines allowed a quicker, more efficient processing and tabulation of data, and a better use of staff, so statistics were published more frequently and survey scales expanded.²⁸² The appointment of knowledgeable individuals helped develop index numbers, fostering time series comparisons, first of all by the DGEN to establish the prices and quantities of foreign trade.²⁸³ Other novel measurement instruments used in those years were national income estimates, and cost of living and wholesale price indices. These tools, together with small-scale censuses, depicted the shifts in sectors and areas perceived as relevant. Notably, Bunge's differentiation between the value and quantity of foreign trade foresaw the Prebisch-Singer theory,²⁸⁴ while the analysis of Bunge's CLI in Chapter IV suggests that the use of import prices as a proxy for the price of manufactured goods made him a proto-Latin American structuralist.²⁸⁵

The DGEN – headed by Bunge between 1916 and 1921 and from 1923 to 1925 – collected data on external trade, public revenue and expenditure, and banking, and also developed price indices. The DE gathered information on the working class. Expenditure surveys were carried out using Bunge's methodology in 1919, 1922 to 1926, 1928 and 1929. Its experts were asked to draft questionnaires for parliamentary investigations and to provide them with advice,²⁸⁶ allowing DNT members to participate in the development of labour legislation. The economy was seen as “a holistic entity constituted by the relationship between a limited number of highly-aggregated variables”,²⁸⁷ excluding industrial activity data.²⁸⁸ Though not put forward officially, the perspective placed the productive, tax and consumption capacities of the national economy at centre stage.

González Bollo claims that the 112% nominal rise in the money allocated to public statistics throughout the UCR governments was a factor behind this period's statistical

periodo de entreguerras: la Oficina de Investigaciones Económicas del Banco de la Nación Argentina', paper presented at Primeras Jornadas de Historia de la Industria y los Servicios, Facultad de Ciencias Económicas, UBA, 9-10 August 2007.

²⁸⁰ González Bollo, *La fábrica*, p. 125. Sponsored by his university professor Bunge, Raúl Prebisch entered the DGEN in 1925. On Prebisch's early career, see R. Cortes Conde, 'Raúl Prebisch: Los años de gobierno', *Revista de la Cepal*, 76, 2001, pp. 83-7; E.J. Dosman, *The Life and Times of Raúl Prebisch*, 1901-1986, Montreal, 2008.

²⁸¹ Higher ranking state officials initially resisted their purchase, Dosman, *The Life*, p. 54.

²⁸² González Bollo, 'La estadística pública', p. 159.

²⁸³ DGEN, *El intercambio económico de la República Argentina en 1916*, Buenos Aires, 1917.

²⁸⁴ H. González Bollo, *La teodicea estadística de Alejandro E. Bunge (1880-1943)*, Buenos Aires, 2012, pp. 21-2.

²⁸⁵ Latin American structuralism argues that, among other factors, inflation is imported.

²⁸⁶ González Bollo, 'La cuestión obrera', p. 335.

²⁸⁷ González Bollo, 'La estadística pública', pp. 161-2, author's translation.

²⁸⁸ *Ibid.*, pp. 173, 188.

revolution. However, this chapter suggests that not all offices shared the benefits and, more importantly, that funds allocated to the statistical system followed Bunge, which is another indication of his importance. Between 1916 and 1930, the DGEN's financial allocation in nominal terms increased by 209.3% and the DE's declined by 8.6%, while the number of employees rose by 168.6% and dropped by 25% respectively.²⁸⁹ This uneven trajectory shows the DE's loss of relevance after Bunge's departure,²⁹⁰ which was capitalised on by the DGEN, where he moved. When Bunge headed the DGEN, its allocation rose above that of the other agencies.²⁹¹ More resources and personnel did not mean efficient and qualified staff, however, which affected Bunge in a contradictory way. The money assigned to the DGEN and its employees spiked in 1920.²⁹² The monetary increase, which represented 86% of the rise in the allocation to all agencies,²⁹³ was an update due to inflation, allowing an administrative reorganisation and the creation of four areas within the DGEN.²⁹⁴ Bunge's departure from the DGEN in 1921 – “in disagreement with the reorganisation of the agency's staff”²⁹⁵ – related to his dissatisfaction with the working ability of the recently hired employees.²⁹⁶ His discontent did not re-appear, nonetheless, when he returned in 1923, stating that there was no need to increase the DGEN's financial and human resources.²⁹⁷ However, that year the allocation rose again by almost 16%, with the number of employees jumping from 95 to 137.²⁹⁸ González Bollo omits this contradiction between what Bunge stated and what happened, arguing instead that with the additional resources Bunge “increased the amount of official information and renewed publications”,²⁹⁹ including the 1924 official release of the CLI. All these changes were embodied in standardised methods

²⁸⁹ Figures from *Ibid.*, graph 1.

²⁹⁰ Between 1916 and 1920, it lost 16% of its financial allocation and 25% of its employees. No further changes occurred until at least 1926. Figures from González Bollo, ‘Para medir’, p. 117; González Bollo, ‘La estadística pública’, p. 165, graph 1.

²⁹¹ The DGEN managed to maintain its monetary allocation in 1918, despite the decline in the budget of all statistical agencies. In 1920 the DGEN's allocation rose 120%, while for all statistical agencies it increased 44%. Figures from González Bollo, ‘La estadística pública’, pp. 165-6.

²⁹² Figures from González Bollo, ‘La estadística pública’, pp. 159,166; *Ley de presupuesto general de la República Argentina 1917*, Buenos Aires, p. 211.

²⁹³ Figures from González Bollo, ‘La estadística pública’, p. 164, chart 8, p. 166.

²⁹⁴ González Bollo, *La teodicea*, p. 47.

²⁹⁵ ‘El director general de Estadística renunció’, *La Nación*, 16 November 1921, p. 5, author's translation.

²⁹⁶ González Bollo, ‘La estadística pública’, p. 159.

²⁹⁷ ‘DGEN. Ideas y planes de la importante dependencia que vuelve a dirigir el ingeniero Alejandro E. Bunge’, *La Razón*, 6 February 1923, p. 1.

²⁹⁸ Estimates made on the basis of the figures from González Bollo, *La teodicea*, p. 77.

²⁹⁹ *Ibid.*, p. 77, author's translation.

agreed upon in the 1925 First National Statistical Conference (*Primera Conferencia Nacional de Estadística*, PCNE).³⁰⁰

Official statistical institutions and statisticians had a better interpretative capacity. Bunge, Prebisch and Julio César Urien, the key statisticians of this period, were also economists who were versatile in their political relationships and their contacts with the private sphere. The accumulation of expertise and information contributed to the design of the Herrera Vargas Plan in 1922/3,³⁰¹ the first Argentine economic programme that integrated fiscal, financial, and tariff measures. Based on a limited number of variables, it was elaborated thanks to the embryonic macroeconomic vision taking shape at the time.³⁰² The analysis of the CLI in Chapter IV shows its relevance within this emerging understanding. The case of the CLI also confirms González Bollo's argument that the progress of Argentine public statistics in this period was enhanced by international developments.³⁰³ As discussed previously, CLIs began to be estimated in the United States, Germany and the United Kingdom in this period. The Argentine CLI was not an exception to this international trend.

Daniel and González Bollo conceive the statistical standardisation and homogenisation between 1890 and 1930 as a creative progression. Until 1916, the press of both the ruling and working classes took part in the debates regarding the ideal profile for official data production – publicity which helped mitigate, though not eradicate, society's resistance to enquiries. Between 1916 and 1930, the press became active in the discussion about the quality of official data, transforming itself from being a mere narrator of the conflicts into a protagonist.³⁰⁴ That the press helped legitimise statistics is a view supported by the CLI history.

Overall, González Bollo presents a positive view of this phase. However, the years 1916/7-1932 include the sombre period of the Argentine CLI. Thus, due to the relevance of the index within the Argentine statistical system, this thesis has a less optimistic appraisal. González Bollo claims that the modernisation of government services, the complexity of tasks involved, the advance of heterodox economic ideas, and the continuity in intellectual autonomy brought about a revolution in the system. For him, the closure of the *Caja de*

³⁰⁰ González Bollo presents a very positive take on this gathering of statisticians and civil servants. González Bollo, *La fábrica*, pp. 141-5. Due to the timing of the PCNE, the meeting is commented upon later on, where a less optimistic view is presented.

³⁰¹ Bunge contributed to the Plan's draft, De Imaz, 'Alejandro E. Bunge', p. 557.

³⁰² González Bollo, *La fábrica*, pp. 141, 147-59.

³⁰³ *Ibid.*, pp. 122-3.

³⁰⁴ C. Daniel and H. González Bollo, 'Las estadísticas oficiales en la prensa escrita porteña (Argentina, 1890-1930)', in Senra and Camargo (eds.), *Estadísticas nas Américas*, pp. 179-203.

*Conversión*³⁰⁵ between 1914 and 1927 helped generate an original set of variables to fill the vacuum that the new context generated. Nevertheless, he still points out that in 1928 the second Yrigoyen administration (1928-1930)³⁰⁶ meddled with the national statistical system by firing Alfredo Lucadamo and Urien, heads of the DGEN and the DERE respectively. This generated a delay in the former's release of foreign trade figures, although the DE did not suffer major consequences.³⁰⁷ Furthermore, González Bollo highlights that in 1931, during José Félix Uriburu's de-facto government (1930-1932),³⁰⁸ there were downward budgetary adjustments.³⁰⁹ González Bollo believes that the positive transformations of the first twelve years outweighed the negative developments in the last four, yet a notable finding of this thesis is that these episodes occurred during the CLI's sombre period, which suggests that the effects of Yrigoyen's statistical dismissals, the 1931 cuts, the re-establishment of the *Caja*, and Bunge's distance from the statistical system after 1925 impacted on the index and thus on the statistical system. During Yrigoyen's second tenure there had been no reduction in the money allocated to public statistics or in the DGEN's personnel, which remained stable until 1932.³¹⁰ Yet, the statistical dismissals illustrate the political character of statistics. In line with the path followed by the CLI and what contemporaries like Prebisch believed regarding the stagnation of the Argentine statistical system relative to countries like Australia,³¹¹ this thesis suggests that public statistics suffered discontinuous progress and was undermined towards the end of this period.

³⁰⁵ The *Caja de Conversión*, or Conversion Office, exchanged gold reserves for paper currency at a fixed rate, monopolising currency emission. It functioned as a currency board in the Gold Standard era, leaving no room for autonomous monetary policy. It was a crucial piece of the export-oriented economic structure. For its history see G. della Paolera and A.M. Taylor, *Straining at the Anchor: The Argentine Currency Board and the Search for Macroeconomic Stability, 1880-1935*, Chicago, 2001.

³⁰⁶ Yrigoyen, elected in 1916, was replaced by Marcelo T. de Alvear, another UCR president, between 1922 and 1928.

³⁰⁷ González Bollo, *La fábrica*, pp. 128-9.

³⁰⁸ In September 1930, a *coup d'état* headed by Uriburu overthrew Yrigoyen.

³⁰⁹ The DE's allocation declined 24.6%, while the DGEN's dropped 10.5%. Figures from González Bollo, 'La estadística pública', p. 164, figure 8; 'Alcanzan a 8,908,000 pesos las economías que se han efectuado en el Ministerio de Hacienda', *La Nación*, 17 March 1931, p. 5. The adjustment was part of a larger set of orthodox cuts aimed at dealing with the impact of the Great Depression, N. González and D. Pollock, 'Del ortodoxo al conservador ilustrado. Raúl Prebisch en la Argentina, 1923-1943', *Desarrollo Económico*, 30:120, 1991, p. 482.

³¹⁰ The agencies' allocation remained at m\$1 million in 1927 and 1928, increasing to m\$1.2 million in 1929 and 1930. The DGEN's rose in 1927 and 1929. Figures from González Bollo, 'La estadística pública', p. 164, figure 8; González Bollo, *La teodicea*, p. 77.

³¹¹ Dosman, *The Life*, p. 50.

State managers with an expansionist view, 1932-1943

Agustín P. Justo became president in 1932.³¹² By 1933, Argentina had begun to overcome the effects of the Great Depression. In the 1930s, the industrial sector had a leading role in the economy,³¹³ although without the active encouragement of economic policies based on a belief in import substitution industrialisation as a rational alternative,³¹⁴ but rather founded on the belief that it was a provisional and temporary strategy to undermine the effects of international events.³¹⁵ It was, rather, the orthodox, monetary-based view that prevailed, although exchange controls and devaluation encouraged an expansion of manufacturing, given the pre-existence of an industrial structure.³¹⁶ The number of agencies that regulated productive activities multiplied. These changes and the semi-autarchy conditions imposed by WWII brought about an active state, with a regulating and mediating role in the economy and in the relationship between workers and employers. Declining population growth and urbanisation,³¹⁷ due to the demand created by industrialisation, generated significant social changes, which fostered public policy. Throughout this period,³¹⁸ public statistics expanded and had a “starring role” at a time of increasing state intervention.³¹⁹ They broadened their geographical and subject coverage, aiding and participating in ministerial and parliamentary commissions, which González Bollo sees as a leap forward. Agencies and statisticians with techno-bureaucratic roles oversaw private activities as mediators and inspectors in markets, and participated in the design of the Economic Action Plan (*Plan de Acción Económica*) of 1933-34³²⁰ and the 1940 Economic Reactivation Plan (*Plan de Reactivación de la Economía*

³¹² The election was fraudulent and the UCR was proscribed, generating legitimacy problems for Justo, A. Rouquié, *Poder militar y sociedad política en la Argentina*, Buenos Aires, 1981, pp. 251-3.

³¹³ Between 1930 and 1939, the annual industrial growth rate reached 7.1%, M.I. Barbero and F. Rocchi, ‘Industry’, in della Paolera and Taylor, *A New Economic History*, p. 272.

³¹⁴ Peralta Ramos, *La economía política argentina*, p. 54.

³¹⁵ Like during WWI. This changed in 1943. See C. Belini, ‘El grupo Bunge y la política económica del primer peronismo, 1943-1952’, *Latin American Research Review*, 41:1, 2006, pp. 33-4.

³¹⁶ A. O’Connell, ‘La Argentina durante la Depresión. Los problemas de una economía abierta’, in R. Thorp, *América Latina en los años treinta*, Mexico, 1988; J. Villanueva, ‘El origen de la industrialización’.

³¹⁷ In 1914, 53% of the population lived in urban areas, reaching 62% by 1947, G. Germani, *Estructura Social de la Argentina. Análisis estadístico*, Buenos Aires, (1955) 1987, p. 67.

³¹⁸ From Justo’s government (1932-1938) to the June 1943 coup.

³¹⁹ González Bollo, ‘La estadística pública’, p. 253, author’s translation.

³²⁰ The plan contained Keynesian tools aimed at strengthening the balance of payments and enhancing production. Thus, the year 1933 can be identified – by contemporaries and in the literature – as a watershed between the orthodox and heterodox periods of economic policy, González and Pollock, ‘Del ortodoxo’, pp. 471. For a different view see Alhadef, ‘The Economic Formulae’.

Nacional).³²¹ Given their direct links with the economy, statisticians were transformed from technicians focused on routine activities to state managers.³²²

By restoring Urien and Lucadamo as heads of the DERE and DGEN in 1932, Justo aimed to normalise the national statistical system after the negative developments of 1928-31. Also in that year, a presidential decree determined that the DE should elaborate a CLI,³²³ a turning point in the history of the index. The OIE, the DGEN, the DE and the DERE “were the synthesis of the numerical production achieved, and privileged strongholds of the updated measurement techniques and the most prestigious statisticians”.³²⁴ The administrative structure of the offices broadened as they established more divisions. Their permanent staff rose substantially.³²⁵ Each agency was in charge of at least one periodically-released measure. Their activities were endorsed by decrees of the executive or ministry resolutions. The offices designed, advised and participated in regulatory agencies. Trade; agricultural production, its commercialisation and its socio-labour conditions; the balance of payments; money in circulation; wholesale and retail prices; industrial production, employment and unemployment; and the income and purchasing power of the families of urban workers were the most important variables. A more refined collection of information delivered a view of a “standardised, global and dynamic economy”.³²⁶ This perspective, however, was not evenly spread amongst the statistical agencies. The OIE had a monetary-based view which disregarded industrialisation, mimicking the perception that it was a temporary strategy. On the other hand, linked to Bunge’s embryonic economic vision, the DE aimed at enhancing the internal market. The OIE became a “primus inter pares”, subordinating the DGEN and generating a “virtual centralisation”.³²⁷

After the Great Depression, the 1930 coup and the 1931 fiscal adjustment that impacted on the statistical system, the DE entered a “vegetative state”,³²⁸ with five

³²¹ Known as the Pinedo Plan, it was the first official document that considered the possibility of altering the country’s development strategy, J.J. Llach, ‘El plan Pinedo de 1940, su significado histórico y los orígenes de la economía política del peronismo’, *Desarrollo Económico*, 23:92, 1984, pp. 515-58.

³²² González Bollo borrows the notion of state managers from T. Skocpol and D. Rueschemeyer, ‘Introduction’, in T. Skocpol and D. Rueschemeyer, *States, Social Knowledge, and the Origins of Modern Social Policies*, Princeton, 1996, pp. 3-14.

³²³ *BIDNT*, ‘Costo de la vida. Reglas para proceder a la investigación del costo de la vida de la población obrera. Encuesta básica y rectificaciones periódicas’, 15:163, 1933, pp. 3548-52.

³²⁴ González Bollo, *La fábrica*, p. 165, author’s translation.

³²⁵ Between 1932 and 1943, the number of employees in the DGEN rose 60% to 190 individuals. In the DERE the jump was of 200% to 405 employees. No disaggregated figures exist for the DE. *Ley de presupuesto general de la República Argentina 1932*, Buenos Aires, pp. 9,19; *Ley de presupuesto general de la República Argentina 1943*, Buenos Aires, pp. 334, 840-1.

³²⁶ González Bollo, *La fábrica*, p. 163, author’s translation.

³²⁷ *Ibid.*, p. 166, author’s translation.

³²⁸ *Ibid.*, p. 172, author’s translation.

employees,³²⁹ the bottom of its U-shaped trajectory,³³⁰ which this thesis interprets as the likely consequence of those events. For González Bollo, the DE was re-launched with the sanctioning of the law for the 1932 unemployment census, which saw its permanent staff increase to ten individuals and the acquisition of a punch-card machine,³³¹ while the 1934 decree reorganised its tasks, strengthening its technical autonomy.³³² In this revival, González Bollo did not include the 1932 CLI decree, which, as this thesis demonstrates, played a critical role as part of the greater task of making up the working class. This shows the existing literature's disregard of the sombre period of the Argentine index, particularly as a determinant of the discontinuous progress of the national statistical system. Together with the government's increasing mediation of capital-labour relationships, the DE began to take part as a moderator in them.³³³ It perfected its statistical research, extended its geographical coverage, regularly updated its data and introduced methods, concepts and innovative calculations. Due to this and its administrative and intellectual activity, the agency gained legitimacy in the workers' milieu. Hence, the CLI was backed by the main workers' organisation, the General Confederation of Labour (*Confederación General del Trabajo*, CGT).³³⁴ Consequently, the DE experienced an "institutional metamorphosis that turned it into a government policy system".³³⁵ This period was the agency's heyday. The official appointment of Figuerola as its head in 1934, despite acting as such since at least 1932, as Chapter V explains, contributed greatly to this process.³³⁶ He imparted a corporativist ideology on the DE's work,³³⁷ helped by his stable team. Chapter V shows that he introduced the ILO's statistical innovations in Argentina, fostering the relationship between this

³²⁹ 'Alcanzan', *La Nación*, p. 5

³³⁰ H. González Bollo, *La División de Estadística del Departamento Nacional de Trabajo y su transformación en la Dirección de Estadística Social del Consejo Nacional de Posguerra (1932-1945)*, mimeo, 2012, p. 2.

³³¹ In the second half of the 1930s, staff reached 25 people, mostly typists and auxiliaries that handled data, see González Bollo, *La fábrica*, p. 207. In 1937, m\$7,680 was budgeted to purchase four punch-card machines, *Ley de presupuesto general de la República Argentina 1937*, Buenos Aires, p. 138.

³³² The decree gave the DE the autonomy to determine criteria and quantification procedures and to establish operational definitions, *BIDNT*, 'Estadística. Decreto N°50720 modificando el artículo 8° del decreto de enero de 1913, reglamentario de la ley 8999-Reorganización de los servicios de Estadística del trabajo', 26:177-8, 1934, pp. 4032-5

³³³ Workers' and employers' organisations were increasingly present. The reconfiguration of the links between these actors opened the door for the cooperation of experts.

³³⁴ 'Algo de lo que enseña la estadística sobre el costo de la vida en la Capital Federal', *CGT*, 3 May 1935, p. 4.

³³⁵ González Bollo, *La División*, p. 1, author's translation. In this metamorphosis, the DE became the DES, a government policy advisory agency.

³³⁶ Figuerola, born in Barcelona in August 1897, passed away in Buenos Aires in September 1970, J. Figuerola, *El gran movimiento social argentino*, Buenos Aires, 1961, p. 5; 'Necrológicas', *La Vanguardia*, 18 November 1971, p. 35.

³³⁷ See H. González Bollo, 'José Francisco Figuerola: de funcionario del estado interventor conservador a experto de la coalición peronista (1930-1944)', paper presented at Primer Congreso de Estudios sobre el Peronismo: la primera década, Mar del Plata, 6-7 November 2008. A similar point is made in R. Rein, 'Los hombres detrás del hombre: la segunda línea de liderazgo peronista' *Araucaria*, 10:19, 2008, pp. 78-92.

organisation and Argentina. Wages and occupation by type of activity and for several urban areas, and working class family budgets constructed for different income levels, added to the previous list of topics. The regular release between 1937 and 1943 of the DE's publication *IS*, a compendium of statistics, showed that this agency had the capacity to annually collect a fixed data set. The number of reports on different sectors grew substantially, two unemployment censuses were taken, and industrial statistics were collected. The publication of numbers included interpretive and retrospective analyses. Its reports formed an “official encyclopaedia”³³⁸ and a detailed taxonomic elaboration of the Argentine worker. This thesis believes that these developments were needed because Argentina’s economic and social structure was changing, so a new image of it, different from the one elaborated during the configuration period, was needed.

The 1934 decree that reorganised the DE stated that a CLI be determined periodically. Work for a new estimate had already begun in 1933 and the result was released in 1935. The index was developed using ILO resolutions, adopting Halbwachs’ methods. The estimate was based on the consumption of a family of the City of Buenos Aires. Subsequent efforts were made to expand the coverage, though the family budget was not updated accordingly. When explaining the upward trajectory of the DE in this period, González Bollo identifies the CLI as “the tool that endowed the DE with legitimacy”.³³⁹ However, this thesis argues that both the DE and the index legitimated each other. The CLI was used and endorsed by workers, and eventually there was a state plan to use it to maintain the purchasing power of wages,³⁴⁰ which was a mechanism of depolitisation.

Socio-labour statistics became a channel of communication between the state and different actors, while also contributing to the design and monitoring of policies and markets, fostering the DE’s “institutional metamorphosis”.³⁴¹ Statistics provided cognitive support for the performance of the DNT as a mediator between capital and labour. Statisticians tried to incorporate workers into their statistical studies. However, the technical bureaucracy had a monopoly of the knowledge and kept workers at bay. Socio-labour statistics were capitalised on by the working class to inform and shape the social security debate.³⁴² The data provided the basis for the legislation promoted by the Socialist Party.³⁴³ Statistics were also the basis

³³⁸ González Bollo, *La División*, p. 8, author's translation.

³³⁹ *Ibid.*, p. 25, author's translation.

³⁴⁰ DNT, *Adaptación de salarios a las fluctuaciones del costo de la vida. Problemas que suscita, Normas de aplicación práctica*, Buenos Aires, 1943.

³⁴¹ González Bollo, *La División*, p. 5, author's translation.

³⁴² Daniel, ‘L’objetivation’, pp. 195-9.

³⁴³ Lobato, ‘El Estado’.

for the extension of collective agreements from a corporatist stance.³⁴⁴ From the Special Services (*Servicios Especiales*) unit of the DE, Figuerola took part in the National Commission for the Control of Provisions (*Comisión Nacional de Control de Abastecimientos*) in 1939 and the Wage Advisory Commission (*Comisión Asesora de Salarios*) in 1943.³⁴⁵ Numbers helped Figuerola and his team develop ideas that enhanced domestic market consumption and, consequently, endorsed industrialisation. They became symbolic capital that was “crucial for attracting the electorate of Buenos Aires and Greater Buenos Aires to Peronism”.³⁴⁶ The history of the CLI suggests that although Figuerola learned by doing, the developments of the 1930s were mostly a conscious strategy, as he had *a priori* aims that guided his actions.

This period had another avalanche of censuses, all sanctioned by a law, although with no national population enquiry. Censuses were a joint effort between agencies.³⁴⁷ The topics covered were unemployment, secondary activity and construction, mortgages, agriculture and schooling. For the first time, there was an official monitoring of both industrial activity and the socio-labour conditions of urban workers.

The fluctuations of 1937/8, the consequence of a global recession,³⁴⁸ were a turning point. There developed an economically expansionist view with a positive stance on industrialisation, the purchasing power of the domestic market, the role of wages in consumption and the financial power of the state.³⁴⁹ As González Bollo argues, this represented a shift in power within public statistics away from the OIE and towards the DE and the DERE, which was symptomatic of the demise of the orthodox view and contributed to the DE’s upward trajectory. Despite Bunge’s absence from the public statistics sphere since 1925, González Bollo argues that traces of his piece ‘¿Por qué esperar?’ can be found in Figuerola’s work.³⁵⁰ From this, it can be inferred that Bunge’s ideas influenced Peronism.³⁵¹

In the 1930s, public statistics encouraged the creation and development of the Argentine interventionist state, which in turn influenced public statistics. For example, in 1940, four of the 43 founding members of the Inter American Statistical Institute (IASI) were

³⁴⁴ R. Gaudio and J. Pilone, ‘Estado y relaciones laborales en el periodo previo al surgimiento del peronismo, 1935-1943’, *Desarrollo Económico*, 24:94, 1984, pp. 235-73.

³⁴⁵ González Bollo, ‘José Francisco Figuerola’; González Bollo, *La División*, pp. 12-8.

³⁴⁶ González Bollo, ‘La estadística pública’, p. 261, author’s translation.

³⁴⁷ *Ibid.*, p. 215.

³⁴⁸ The US situation was critical, which coupled with falling prices of Argentine exports. The collapse of foreign trade impacted on domestic economic activity, Gerchunoff and Llach, *El ciclo de la ilusión*, pp. 139-41.

³⁴⁹ González Bollo, ‘La estadística pública’, pp.245-8. González and Pollock also see in this year as a moment in the shift between economic orthodoxy and heterodoxy, González and Pollock, ‘Del ortodoxo’, pp. 483-4.

³⁵⁰ González Bollo, *La fábrica*, pp. 199-217.

³⁵¹ Also via the members of the REA, as explained in Belini, ‘El grupo’.

Argentine, a figure only surpassed by the US, Mexico and Brazil. A year later, the IASI identified 35 statistical personnel in the country, compared to 386 in the whole of the Americas.³⁵² Fostered by the government, public statistics were resurgent after being undermined between 1928 and 1931, becoming “specialised, creative, deliberative, in charge of implementing government decisions. They held an alternative and complementary power to the legitimacy emanating from the legislatures”.³⁵³ A proto-industrialist and heterodox view of the economy was elaborated. The DE’s collection of socio-labour information is an example of the accumulation of “detailed, continuous and periodic knowledge about a specific population: the industrial worker and his or her family, based on a corporatist view”.³⁵⁴ In this process, the CLI had a fundamental role, as this thesis shows. The DE also collected evidence on the consumption of the working class, the transformation of regional economies, and the potential of the internal market compared to the traditional model of placing surplus agricultural production on the international market. To strengthen their work, DE statisticians promoted the organisation of corporations and associations, of business and labour, and encouraged the unionisation of workers. In Daniel’s words, “the expansion of a corporatist framework in the Argentine society became the platform for the success of statistical activity”.³⁵⁵ From a reading of these authors and the original analysis of the CLI, this thesis suggests that a feedback relationship existed between the data collected and the novel analysis of the economy, contributing to building a new image of the nation in which the working class began to have a leading role. The monitoring of economic variables and socio-labour phenomena, only possible due to the collection of data, contributed to the planning and distribution of resources of the Peronist era. Perón’s arrival at the DNT in 1943 would then become a new starting point for socio-labour statistics.

Conclusion

To set the background for the study of the Argentine CLI, this chapter has analysed the history of Argentine public statistics between 1869 and 1943. The account has drawn on the sociology of quantification-based works of Daniel, González Bollo and Otero. In light of this review and this thesis, this chapter suggests a compromise between Bertranou et al’s pessimistic stance on Argentina’s deficient public statistics and Platt, Díaz Alejandro and Weil’s praise for it. Between 1869 and 1943, the Argentine statistical system was formed by a

³⁵² IASI, *Statistical Activities of the American Nations. 1940*, Washington DC, 1941, pp. 679-737, 822-5.

³⁵³ González Bollo, *La fábrica*, p. 162, author’s translation.

³⁵⁴ González Bollo, ‘La estadística pública’, p. 209, author’s translation.

³⁵⁵ Daniel, ‘L’objetivation’, p. 186, author’s translation.

dynamic and decentralised network of offices that became the birthplace of a statistical bureaucracy. Throughout this period, Argentine public statistics professionalised its methods, its staff and its tools, thanks to laws that granted administrative autonomy in the collection of data and in the selection, training and specialisation of human capital. Crises fostered the development and consolidation of statistical agencies rather than holding it back, as Furner and Supple explain when depicting how statistics, as a technology of distance, contribute to overcoming uncertainty.³⁵⁶ Despite the irregularity of national censuses, an overall view of the economy and of society was established – the Argentine was made – and eventually re-elaborated with the changes industrialisation brought about. The documentation of the worker was deepened and perfected, fostered by urbanisation and industrialisation, rendering a representation of an empirical worker,³⁵⁷ thanks to the DE's "ethnographical fieldwork".³⁵⁸ By 1943, Argentine socio-labour statistics enjoyed a scientific and administrative position, *à la* Desrosières, because numbers were perceived as objective and reliable knowledge. Thus, agreeing with Platt, Díaz Alejandro and Weil, in this period the Argentine statistical system consolidated through the production of a large amount of numbers. Nonetheless, Chapters IV to VI of this thesis show that the quality and periodicity of statistics were key deficiencies of the Argentine statistical system, which supports Bertranou et al's argument.

Different views accordingly helped shape and re-shape an ideological image of the Argentine nation, following international developments and requirements. The Argentine statistical system trailed the trajectory of statistics depicted in Chapter II, with the characteristics of a follower of international developments and not a trend setter, as described by Curtis, Loveman, and Patriarca.³⁵⁹ Its decentralised character was not unique, as the proliferation of agencies and their lack of coordination was a "normal feature"³⁶⁰ of statistical systems at their beginnings. After its configuration and until 1932, Argentine public statistics standardised demographic, economic and socio-labour indicators under a liberal framework. Several changes occurred in the 1930s, which were linked to a corporatist framework and engendered an incipient expansionist and heterodox macro understanding of the economy. These modifications show how statistics is not static. Tasks, capacities and objectives change over time as they adapt to different social, political and economic contexts. This thesis argues that the Argentine CLI followed these changes.

³⁵⁶ Furner and Supple, 'Ideas', p. 24.

³⁵⁷ The SGDM also contributed to this, see González Bollo, 'Estado', pp. 9-15. An analysis on the DNH and the DNT as mediators is found in Haidar, *Trabajadores en riesgo*.

³⁵⁸ González Bollo, *La fábrica*, p. 79, author's translation.

³⁵⁹ Curtis, *The Politics*; Loveman, *National Colors*; Patriarca, *Numbers and Nationhood*.

³⁶⁰ Prévost and Beaud, *Statistics*, p. 71.

The socio-labour data collected by the DE throughout its lifetime is an example of the classification and re-classification of the industrial world and had a crucial role in the re-elaboration of the view of the economic and social structure,³⁶¹ and thus of the Argentine. Together with the statistical system, the DE evolved and adapted to the changing context. Following the analysis of Hacking,³⁶² it also shaped the image workers had of themselves, as this thesis shows how they increasingly trusted and used the CLI in their wage negotiations. Particularly during the 1930s, the labour movement was able to capture these quantitative tools and capitalise on them politically. Official figures gave unions authoritative arguments to support their demands, as statistics became a means to prove scientifically the fairness of the workers' claims,³⁶³ as will be shown in the following chapters. The history of socio-labour statistics demonstrates how the legitimacy of numbers is constructed, and that a virtuous cycle exists between confidence, cooperation and legitimacy. It also reveals how the authority of public statistics derives from the methodology used to produce them and from the regularity and consistency of the information. Legitimacy is constructed by how numbers are perceived by the social milieu as well as by the usage of third parties.

Argentine statisticians defined themselves as operators of a neutral method that allowed them to consolidate as a technical elite of state intellectuals possessing a specific knowledge.³⁶⁴ They modelled styles of thought by choosing the problems and questions, establishing the rules, and pre-determining the vocabulary to be used.³⁶⁵ However, as the trajectory of the demographic censuses indicates, they did not escape the influence of politics and political economy. This thesis suggests that the faith in the CLI was also closely tied to the political economy and that Bunge and Figuerola had particular aims behind their apparently 'neutral' CLIs.

This thesis understands that the CLI was a crucial indicator within the Argentine statistical system. Why? It was one of the pillars of Bunge's embryonic macroeconomic vision in the late 1910s and 1920s. It was the tool that provided legitimacy to the DE in the 1930s. Moreover, Bunge and Figuerola, the main men behind the CLI, were key statisticians

³⁶¹ The DE's view contrasted with Gino Germani's perspective on the rise of the middle class, González Bollo, 'Estado', p. 17.

³⁶² Hacking, *The Taming*.

³⁶³ Daniel, 'L'objetivation', p. 186.

³⁶⁴ J. Caravaca and M. Plotkin, 'Crisis, ciencias sociales y elites estatales: la constitución del campo de los economistas estatales en la Argentina, 1910-1935', *Desarrollo Económico*, 47:187, 2007; C. Daniel, 'Una escuela científica en el Estado. Los estadísticos oficiales en la Argentina de entreguerras', in Ben Plotkin and Zimmermann (eds.), *Los saberes del estado*, pp. 63-102.

³⁶⁵ As depicted in H. Capel, 'Factores sociales y desarrollo de la ciencia: el papel de las comunidades científicas', *Suplementos. Materiales de trabajo intelectual*, 43, 1994, p. 11.

within the national statistical system. Consequently, digging deep into the history of the Argentine CLI using the de-construction/construction/re-construction methodology provides further insight into the Argentine statistical system from the sociology of quantification perspective and by looking at statistics as historical facts.

While drawing on the research of Daniel, González Bollo and Otero, this thesis moves a step forward by de-constructing/constructing/re-constructing one of its key elements, the CLI. It suggests that several issues they raise must be re-considered. For González Bollo, the national statistical system is a *fábrica de las cifras oficiales*. However, his use of the term of *fábrica* is misleading and contradicts his own meticulous research. Even if it correctly gives the sense of an organisation that produces numbers, it also implies that its tasks are carried out in a structured, integrated and coordinated manner. Following González Bollo himself, this chapter shows how the national statistical system between 1869 and 1943 was a decentralised network of agencies with different relevance and capacities at dissimilar points in time. This dynamic is evidenced particularly, as this thesis suggests, in the history of the Argentine CLI. The indicator fluctuated from being produced in the DGEN in the 1920s to the DE in the 1930s, with no clear connection between the estimates. Adhering to González Bollo's analogy of the statistical system as a place where numbers are produced, this study conceives of it in this period as a system formed by *talleres*. Before it was a centralised production unit, a *fábrica*, the Argentine statistical system was a sum of *talleres*. Why? The DGEN and the DE – the two offices featured in this research – were not standalone offices, but *talleres* within the national statistical system. The CLI fluctuated between the two, had different objectives, and its components were produced by different agencies. The PCNE was neither as relevant as depicted, showing the overlapping of tasks especially in the case of prices, nor as authoritative as described, as no price series can be re-constructed.

For Daniel, González Bollo and Otero, the accomplishments of each period laid the foundations for the statistical advancements of the following stage and generated knowledge that contributed to the design of policies in the subsequent phase, in addition to their immediate effects. The expansion of the statistical system between 1890 and 1930 was a foundation needed to establish the interventionist state in the 1930s.³⁶⁶ The auditing of economic variables and socio-labour phenomena with the aim of sustaining and increasing consumption capacity laid the bedrock for the planning and distribution of resources that

³⁶⁶ Daniel and González Bollo, 'Las estadísticas', p. 199.

boomed in the Peronist era.³⁶⁷ Generally speaking, these authors argue that Argentine public statistics presented continuous progress within the context of several controversies and disputes.³⁶⁸ For Jorge Pantaleón, the fact that Bunge's active years overlapped with the period where national censuses did not take place paints a positive view of them.³⁶⁹ However, this thesis shows that the trajectory of the CLI, a pillar of the statistical system, was not only discontinuous, but methodologically questionable. This is not to undermine the progress made by Argentine public statistics as a whole, as clearly the developments were important and substantial, but from the index's perspective not so positive. The underlying aim of this thesis is to encourage focused studies on certain aspects of the history of Argentina's public statistics. For example, Yrigoyen's 1928 statistical dismissals of Urien and Lucadamo and the budgetary cuts of Uriburu's government, which coincided with the sombre period of the Argentine CLI, had an impact on public statistics. Their effects were not thoroughly examined by González Bollo. Another unexplored element is how the close linkages Argentina had with other economies encouraged or not the gathering as well as the standardising of data.

The DE's U-shaped trajectory relates to its activity. González Bollo also identifies changes in the type of data gathered. These two analyses can be merged, because after the lowest point of the trajectory, the recovery also implied modifications in the data. González Bollo's U-shaped path does not consider the budgetary cuts of the 1920s nor does it account for the changes that took place in 1912, which he also highlights as fundamental in the agency's history. However, as the latter modifications were so early on in the DE's history, it is argued here that González Bollo's idea still stands. The development of the CLI depicted in this thesis closely follows that of the national statistical system. Moreover, the index had a similar shaped trajectory as the DE.

Well known academics highlight the quality and quantity of Argentine statistics during this period. González Bollo states that "there is no doubt that the DE's investigations had biases, [particular] emphases, censorship and tendentious interpretations".³⁷⁰ However, he does not explain any of those allegations and rapidly proceeds to emphasise the "qualitative contributions" of the agency.³⁷¹ Elsewhere, he simply mentions that the 1920s

³⁶⁷ González Bollo, *La fábrica*, p. 164.

³⁶⁸ So does Novick, 'Aspectos', pp. 3-4.

³⁶⁹ Pantaleón, *Una nación*, pp. 15-7.

³⁷⁰ González Bollo, *La División*, p. 11, author's translation.

³⁷¹ *Ibid.*, p. 11, author's translation.

index had some biases in its measurement.³⁷² Indeed, Daniel, González Bollo and Otero do not question the numbers produced by the national statistical system. This thesis, by contrast, demonstrates that number quality and periodicity relate to the deficiencies described Bertranou et al, although this chapter shows that the Argentine statistical system *per se* and the amount of numbers produced cannot be considered a state deficiency. To investigate these issues and enhance the existing knowledge of the national statistical system and its individuals, the CLI must be de-constructed/constructed/re-constructed. For that exercise to be substantial and fruitful, it is important to understand the history of Argentina's national statistical system, as was explained in this chapter.

³⁷² González Bollo, *La fábrica*, p. 139. A very brief analysis, without critiques, of the procedures followed by Bunge is found in González Bollo, 'Ciencias sociales'; F. Sember, 'The Reception of Irving Fisher in Argentina: Alejandro Bunge and Raúl Prebisch', *The European Journal of History of Economic Thought*, 20:2, 2013, p. 376. A synthetic review of the 1933 and 1935 budget surveys as a representation of workers' standard of living, not as a basis for the CLI exists in E. Elena, *Dignifying Argentina: Peronism, Citizenship and Mass Consumption*, Pittsburgh, 2011, pp. 39-40.

Chapter IV - De-construction and construction: The comprehensive price index and the sombre years, 1918-1931

Introduction

Estimating CLIs became a widespread practice in the early twentieth century and Argentina was no exception. In the 1918 issue of the *REA*, Bunge published a CLI. The DGEN, headed at that time by Bunge, released it officially in 1924. After that publication, the Argentine index entered a gloomy period. Throughout what is called here the CLI's sombre years (1925-1931), the progress made at an international level, headed by the ILO's gathering of statisticians working on socio-labour statistics in general and cost of living estimates in particular, was not reflected in the Argentine series. In 1925 delegates of different Argentine statistical offices met to discuss and coordinate national statistical procedures, yet almost entirely neglected the issue of the cost of living.

This chapter will pose a series of questions related to the early history of Argentina's CLI: How was the index elaborated? Why and by whom was it developed, in which context and with what aim? What were its most important assumptions? What were its most important pitfalls? Could they have been avoided? Why do these pitfalls matter? Why did the CLI experience a sombre period? To answer these questions, the chapter analyses the history of the Argentine CLI between 1918 and 1931 by de-constructing and constructing the index, then seeks to explain why so little progress was made after 1925. Figure 3 illustrates the statistical publications and events of the period 1913-1930 linked to the Argentine index.

Figure 3: Events and publications related to the Argentine CLI, 1913-1930

Date	Name of event (E)/publication (P)	Description	Reference in chapter
October, 1913	Bunge named Head of DE of DNT (E)	-	-
April, 1915	Anuario estadístico del trabajo. Año 1913 (P)	Compilation of labour statistics. Survey on expenditure of the working class. Author: DE of DNT.	Statistical Labour Yearbook, 1913
1915	Bunge leaves the DE (E)	-	-
January, 1916	Anuario estadístico del trabajo. Año 1914 (P)	Compilation of labour statistics. Survey on expenditure of the working class. Author: DE of DNT.	Statistical Labour Yearbook, 1914
September, 1916	Bunge becomes Director of DGEN (E)	-	-
1917	El intercambio económico de la República Argentina en 1916 (P)	Values and quantities of foreign trade and price statistics. Author: DGEN.	-
1918	Intercambio económico de la República. 1910-1917	Values and quantities of foreign trade and price statistics. Author: DGEN.	Intercambio
July, 1918	Costo de la vida en la Argentina de 1910 a 1917 (P)	First publication of the comprehensive price index. Author: Bunge, published in REA.	1918 REA article
1919	Creation of ILO (E)	-	-
October, 1919	Costo de la vida en la Argentina. Sus variaciones de 1910 a 1918 (P)	Update of the comprehensive price index. Author: Bunge, published in REA.	1919 REA article
April, 1920	Costo de la vida en la Argentina de 1910 a 1919 (P)	Update of the comprehensive price index. Authors: Valle and Ferrari for the REA.	1920 REA article
November, 1921	Bunge leaves the DGEN (E)	-	-
February, 1923	Bunge returns as Director of the DGEN (E)	-	-
October-November, 1923	First ICLS (E and P)	First international conference of labour statisticians.	First ICLS
February, 1924	El costo de la vida y el poder de compra de la moneda (P)	First official publication of the comprehensive price index. Author: Bunge, published by the DGEN.	1924 DGEN article
April, 1925	Second ICLS (E and P)	International conference of statisticians that discussed cost of living estimates.	Second ICLS
June, 1925	Bunge leaves the DGEN (E)	-	-
November, 1925	PCNE (E and P)	Argentine conference of statistics, report published by DGEN.	PCNE
October, 1926	Third ICLS (E and P)	International conference of statisticians that discussed family budget surveys.	Third ICLS
September, 1928	El costo de la vida y los salarios en la Argentina (P)	Update of the comprehensive price index. Author: Bunge, published in REA.	1928 REA article
June, 1930	Los salarios nominales y reales en la Capital Federal (P)	Update of the comprehensive price index. Author: Bunge, published in REA.	1930 REA article

Notes: DE of DNT= Statistics Division of the National Labour Department (División de Estadística del Departamento Nacional de Trabajo); DGEN= General Board of Statistics (Dirección General de Estadísticas de la Nación); ICLS= International Conference of Labour Statisticians; ILO=International Labour Organisation; PCNE= First National Conference of Statistics (Primera Conferencia Nacional de Estadística); REA= Review of Argentine Economics (Revista de Economía Argentina)

Source: author's elaboration.

By analysing the events and publications of Figure 3, the de-construction and construction of Bunge's index show that the indicator was mainly grounded on price data. For this reason, this index is re-named the comprehensive price index. A re-estimation of the CLI using information available to Bunge suggests a subjective decision in its elaboration. The de-construction and construction of this chapter aim to understand and assess critically the index to demonstrate that the indicator released in 1935 was actually the first Argentine CLI.

The first part of this chapter focuses on the Argentine CLI between 1918 and 1924. It de-constructs the four articles released during this period that relate to the estimate. The de-construction puts together the scattered information on the index to then undertake its construction by looking at the context, its uses, reception and meaning, followed by an analysis of its pitfalls and its re-estimation. The second part examines the sombre years of the Argentine CLI, explaining why, after a period of relatively regular updates, it ceased to be published. To understand why it occurred, there is an appraisal of the relationship between certain aspects of the ILO, its relationship with Argentina, and the PCNE. The third part concludes.

The comprehensive price index, 1918-1924

To de-construct Bunge's CLI, this section begins reviewing, in chronological order, four publications. It then constructs it, starting with the analysis of the uses, meanings and the contemporary reception of the estimates and the assumptions underlying them. Using data published by or accessible to Bunge, the pitfalls of the index are highlighted in order to then re-estimate it.

De-constructing the comprehensive price index

The 1918 article: what the first publication shows

In 1918, when Bunge was fully embedded in the Argentine statistical system, as shown in Chapter III, the inaugural July issue of the *REA* had an article on the Argentine CLI. The journal, founded and headed by him, published pieces on different topics and was the forerunner in the debate on “development strategies and economic policies capable of returning the country to the economic dynamism lost during WWI”.³⁷³ Financed by official

³⁷³ Llach, *La Argentina*, p. 52, author's translation.

and private advertising, its research was grounded on public and private numbers.³⁷⁴ This article began by highlighting that, despite the availability of information and interest in the subject, by 1918 there was no research on Argentine wage and price trends between the nineteenth century and 1910, making the indicator the first CLI published in Argentina. It was a quasi-official index, released privately using information from the national statistical system.³⁷⁵ In spirit, however, the indicator was developed by the public sector.

The elaboration of the index began with the analysis of the expenditure structure published in the DE's *Statistical Labour Yearbooks* of 1913 and 1914.³⁷⁶ Based on a sample of 377 worker families from different neighbourhoods in the City of Buenos Aires, Bunge asserted that 42% of their wages purchased food, 19% paid rent, 31% was used on other expenditure, and 8% was saved. As occurs with CLIs, Bunge omitted the savings component. Without specifying the procedure behind the re-arrangement, he established that food accounted for 50%, rent for 20%, and clothing, electricity and other expenditure (hereafter, 'other expenditure') for the remaining 30% of the budget. These became the three CLI components. Bunge claimed that the results were valid by comparing them with the budget composition used for elaborating the German and US CLIs (see Figure 4). He stated that "considering the equivalence seen *everywhere* in the distribution of expenditure when grouped in those three categories, we can adopt such a structure for the country as a whole".³⁷⁷ Bunge believed, then, that his index was representative for Argentina as a whole because the expenditure shares were similar in Buenos Aires, Germany and the United States.

Bunge proceeded to explain the methodology used to estimate each sub-index, although he did not use that term, which is employed here when considering the food, rent and other expenditure components. His calculation of the yearly index was a weighted average of the three sub-indices. The base of the estimate was 1910 and it extended until 1917.

In Argentina, Bunge wrote, "the two main consumption goods are meat and bread; each of them absorbs 30% of the value invested in food".³⁷⁸ Other food items accounted for the remaining 40%. The food sub-index was the weighted average of the three components. Bunge stated that 80% of the meat consumed was beef, 15% lamb, and 5% pork, generating

³⁷⁴ Pantaleón, 'El surgimiento', p. 185.

³⁷⁵ González Bollo, *La teodicea*, p. 39.

³⁷⁶ *BDNT*, 'Anuario estadístico del trabajo. Año 1913', 30, 1915; *BDNT*, 'Anuario estadístico del trabajo. Año 1914', 33, 1916.

³⁷⁷ A.E. Bunge, 'Costo de la vida en la Argentina, de 1910 a 1917', *REA*, 1:1, 1918, p. 43, author's translation and italics.

³⁷⁸ *Ibid.*, p. 45, author's translation.

the meat indicator as the weighted average of the price indices of those meat types. These shares, as it is explained later on, were not far from reality. The bread component was elaborated using the price of second-class bread. For meat and bread there was no information on the source and kind of prices utilised. The other food items component was estimated as a simple average of 14 price indices.³⁷⁹ The prices used were those of the public statistical system. Looking at *Intercambio económico de la República*, the DGEN publication quoted later by Bunge that examines foreign trade index numbers, the prices of the 14 goods, meat and bread, were those of the 1918 *REA* article, and it states that they were wholesale prices.³⁸⁰

Bunge argued that the trend in rent prices between 1910 and 1917 was registered by the DNT, but he did not specify how it was estimated. It cannot be discerned if the price reflected the rent of a room, a flat, or a house and what characteristics it had, a feature assessed in the construction phase, where the rent sub-index is analysed in greater detail.

As for the other expenditure sub-index, Bunge stated that “the variations in the price of wool, cotton and other textile items (excluding silk), tools, appliances, kerosene and other goods that are grouped in this category are regulated by the fluctuations in the *prices of imported goods* that, on top of representing a large share of total consumption, generate oscillations in the internal market”.³⁸¹ *Intercambio* was quoted as the data source.

The 1919 and 1920 publications: updating the series

After 1918, the *REA* released two articles that updated the CLI. In 1919 a great part of the piece was copied word-by-word from its predecessor because the first issue of the journal was sold out. An important difference between the 1918 and the 1919 estimates relates to the shares of the sub-indices. Bunge claimed that in 1918 there was an increase in rent prices of around 30% with no equivalent rise in wages. Arguing that workers could not reduce their living space as they generally lived in one room, Bunge inferred a change in their consumption that reduced the proportion of the other expenditure sub-index to 24%, increasing rent to 26%.³⁸² Taking Bunge’s assumptions as fact, although this is questioned in the construction phase, the changes in the shares have a *raison d’être*. Looking in detail at the

³⁷⁹ Oil, rice, sugar, milk, charcoal, firewood, coffee, tea, *yerba*, flour, fat, potatoes, wine and tobacco. *Yerba* is used in *mate*, an infusion widely consumed in Argentina.

³⁸⁰ DGEN, *Intercambio económico de la República. 1910-1917*, Buenos Aires, 1918, pp. 158-67.

³⁸¹ Bunge, ‘Costo’, p. 53, author’s translation and italics.

³⁸² A.E. Bunge, ‘Costo de la vida en la Argentina. Sus variaciones de 1910 a 1918’, *REA*, 3:16, 1919, p. 321.

numbers published, the change in the shares was only used for the 1918 estimate, which was presented as a continuation of the 1910-1917 values without the corresponding splice.

The 1920 *REA* piece began by claiming that “the results of the estimates carried out until today” considered “the fluctuations of *wholesale* prices”.³⁸³ A footnote explained why that piece was not written by Bunge: Juan Carlos Valle and Ludovico Ferrari, students of the School of Economic Sciences of the University of Buenos Aires, had updated the CLI to 1919.³⁸⁴ The footnote, written by Bunge, also stated that other students of the same institution carried out research to estimate indices of different provinces. According to him, that investigation confirmed that the fluctuations of the cost of living in the City of Buenos Aires “represent very closely those of the country as a whole”.³⁸⁵ The footnote is interpreted as Bunge’s endorsement of the 1920 *REA* piece, a continuity of his estimates and not just students’ figures. The article had practically no text, as it was mainly charts and calculations.

The 1924 article: the official publication of the cost of living

In 1924 Bunge’s DGEN released the CLI, transforming the quasi-official index into an official estimate. This explains its continuities and similarities with the journal articles. Apart from being director of the DGEN, Bunge’s name appeared at the end of the piece. The CLI was extended to 1923, and its base was 1914. The methodological explanation was similar to the *REA* articles. Bunge stated that the prices used were from the City of Buenos Aires. The annual values were the average of the monthly prices. Since the relationship between wholesale and retail prices was almost constant,³⁸⁶ Bunge believed that the type of prices used did not matter. In the food sub-index, the other food items component consisted of 18 instead of 14 goods.³⁸⁷ Bunge altered the weightings of the three sub-indices for the estimates starting in 1919, when in the *REA* articles that change was made for 1918. Once again, he did not use a proper splicing method, presenting one estimate (1914-1918) followed by the other (1919-1923). These procedures are revised in the construction phase.

The de-construction of Bunge’s index shows that all four publications need to be considered to understand it, as no article provides all the information required to comprehend how the index was estimated.

³⁸³ J.C. Valle and L.A. Ferrari, ‘Costo de la vida en la Argentina de 1910 a 1919’, *REA*, 4:22, 1920, p. 254, author’s translation and italics.

³⁸⁴ The students took Bunge’s university seminar on the cost of living and the purchasing power of money.

³⁸⁵ *Ibid.*, p. 254, author’s translation.

³⁸⁶ DGEN, *El costo de la vida y el poder de compra de la moneda*, Buenos Aires, 1924, p. 12.

³⁸⁷ Adding cheese, eggs, fish and butter.

Constructing the comprehensive price index

Context, uses, contemporary reception and meaning of Bunge's index

Statistical reports are in themselves objects of study. Based primarily on them, the analysis of the context, uses, contemporary reception and meaning of Bunge's CLI enhances our understanding of it.

Context, uses and reception

Bunge had a leading role in all four publications, suggesting that between 1918 and 1924 a strong association existed between him and the CLI. This liaison not only relates to his signature and participation in all articles, but also to his introduction of index numbers and his centrality within the Argentine statistical system, as was highlighted in Chapter III. In 1917, he released *El intercambio económico de la República Argentina en 1916*, where – despite Pantaleón's claim that index numbers were used first for the CLI and subsequently for foreign trade³⁸⁸ – index numbers were first used for export and import prices. It is likely that Bunge based this work on Arthur Bowley's,³⁸⁹ as he referenced him when constructing the CLI.³⁹⁰

Together with González Bollo, this chapter suggests that the political, economic and intellectual context of the times influenced Bunge's concerns and statistical developments, which were not elaborated in a vacuum. The toolbox of statistics helped Bunge create a more convincing stance, based on the idea of objective and neutral knowledge. Bunge believed that a phase in the life and in the economic policy of Argentina had ended with WWI.³⁹¹ Thus, the elaboration of the CLI had a historical explanation and contextualisation. After years of growth, Argentine GDP contracted by 19.6% between 1913 and 1917.³⁹² As explained in Chapter III, the *Caja de Conversión* was abandoned in August 1914, and a new set of phenomena had to be analysed. Argentina, like the rest of the world, was experiencing general price rises. When comparing the CLIs for Argentina and other European and North American countries, Bunge asserted that the Argentine peso was one of the soundest currencies as it had not lost much purchasing power due to WWI.³⁹³ He wanted to shed light on the “causes of the current high food prices in our country”³⁹⁴ and explain the post-war

³⁸⁸ Pantaleón, ‘El surgimiento’, p. 190.

³⁸⁹ A.L. Bowley, ‘Import and Export Index-Numbers’, *The Economic Journal*, 7:26, 1897, pp. 274-8.

³⁹⁰ Bunge, ‘Costo’, p. 49.

³⁹¹ Llach, *La Argentina*, p. 52.

³⁹² Díaz Alejandro, *Ensayos*, p. 62.

³⁹³ DGEN, *El costo*, p. 2.

³⁹⁴ Bunge, ‘Costo’, p. 48, author's translation.

fluctuations in the purchasing power of money. A means to measure those variations and a definition of a constant unit of value were, therefore, needed, which were established with index numbers, a tool used “in almost all the great nations”.³⁹⁵ Bunge also emphasised the need to understand how price fluctuations influenced the purchasing power of wages, explaining that index numbers had advantages when determining the standard of living. In contrast to the *REA* pieces, which were released as soon as the war was over, the *DGEN* publication showed how these estimates had applications to policy. It had a more political tone, seen in Bunge’s analysis of real wage trends. Like his contemporaries, Bunge had the “motivation to contribute to the quantitative knowledge of society, so that, far from merely describing it, he would help public authorities achieve incremental progress in social organisation”.³⁹⁶ Bunge, trained as an engineer in Germany, was exposed to and influenced by the ideas of Friedrich List,³⁹⁷ who believed in the need of nation states to develop using customs duties to encourage industry. For González Bollo, Bunge can be associated with scholars that questioned Say’s law when using statistics to demonstrate the instability and periodical crises of capitalism. This helps explain Bunge’s need to develop ideas and measurement tools to estimate the purchasing power of currencies, national income and the new foreign trade figures that established an embryonic national macroeconomic vision. This standpoint moved away from the existing orthodox consensus that the Argentine economy should and would return to the pre-war economic dynamic.

The CLI was, for Bunge, the basis for the coefficient of money correction, a tool to quantify the purchasing power of the domestic currency relative to others, due to the impossibility of having the Gold Standard as a regular measure for such comparison.³⁹⁸ Following the ILO classification presented in Chapter II, it had an economic purpose. According to González Bollo, the release of the CLI meant that the Argentine peso ceased to have a constant value – an acknowledgement that the Gold Standard and the *Caja de Conversión* had been abandoned. The index also contributed to the contemporary debate on improving the purchasing power of wages, in order to strengthen the consumption capacity of the domestic market.³⁹⁹ Working class family budget surveys, established by Bunge at the

³⁹⁵ *DGEN*, *El costo*, p. 2, author’s translation.

³⁹⁶ González Bollo, *La teodicea*, p. 11, author’s translation.

³⁹⁷ M.C. Lucchini et al., ‘El pensamiento industrialista argentino en el periodo de entreguerras-el estudio de un caso: la influencia de List en Bunge’, *Estudios Interdisciplinarios de América Latina y el Caribe*, 11:2, 2000. <http://eial.tau.ac.il/index.php/eial/article/view/1005/1040> (accessed on November 05, 2015)

³⁹⁸ A.E. Bunge, *The Coefficient of Money Correction: The Use of Index Numbers in the Determination of Fluctuations in the Purchasing Power of Money*, Washington D.C., 1920.

³⁹⁹ González Bollo, *La teodicea*, p. 39.

DE, and CLI updates allowed the real income of urban workers to be monitored. In 1920 seven draft laws were presented to freeze rents due to the increased cost of living – laws that were based on and discussed using Bunge’s CLI.⁴⁰⁰ In 1921 Prebisch used Bunge’s indicator to justify wage indexation in an academic paper.⁴⁰¹ National deputies designed bills to control the rise in the cost of living that were never fully discussed, and the municipality of the City of Buenos Aires elaborated its own specific analysis and solutions.⁴⁰² Numbers were used in the newspaper *La Prensa* to explain the increase in the cost of living.⁴⁰³ González Bollo argues that the exposure of the CLI was thanks to the *REA* and releases in the printed press, which this chapter confirms. The index symbolised “public opinion’s concern about the economic and social uncertainty after WWI”.⁴⁰⁴

The coefficient of money correction was crucial to Bunge’s international career. In January 1920 he presented it at the Second Pan American Financial Conference, where he met Irving Fisher. It is likely that the coefficient contributed to his appointment as a member of the Editorial Board of Corrado Gini’s journal *Metron*.⁴⁰⁵ However, the coefficient became “one of those curious creations” of the first post-war era,⁴⁰⁶ in that Bunge’s ideas did not survive due to their theoretical uncertainties, which suggests that it did not have a significant impact. The history of the CLI developed here confirms this pessimistic view.

Bunge’s developments were endorsed nationally, contributing to the idea outlined in Chapter III about his centrality to the national statistical system.⁴⁰⁷ One of the main supporters of Bunge’s estimates was the Dean of the School of Economic Sciences of the University of Buenos Aires, where Bunge was a statistics professor. He publically praised the 1918 *REA* article and asked Bunge to deepen the results with the help of the school’s students,⁴⁰⁸ which led to the 1920 *REA* piece. Bunge’s work was backed by other sectors as well. *La Nación* and *La Prensa* released his articles. *The Buenos Aires Herald* was also positive about Bunge’s publications,⁴⁰⁹ and both it and the US consulate in Argentina were

⁴⁰⁰ Pantaleón, ‘El surgimiento’, p. 190.

⁴⁰¹ R. Prebisch, ‘Planes para estabilizar el poder adquisitivo de la moneda’, in M. Fernández López, *Raúl Prebisch: Obras 1919–1948*, Buenos Aires, 1991 (1921). Prebisch acknowledged that wage indexation had been proposed by Juan B. Justo, ‘Informe sobre la carestía’, *La Vanguardia*, 13 June 1914, p. 1.

⁴⁰² González Bollo, ‘Ciencias sociales’, p. 29.

⁴⁰³ ‘La carestía de la vida. Sus causas y consecuencias’, *La Prensa*, 27 April 1919, p. 8.

⁴⁰⁴ González Bollo, ‘Ciencias sociales’, p. 20, author’s translation.

⁴⁰⁵ *REA*, ‘Bibliografía: Metron’, 3:25-26, 1920, p. 133.

⁴⁰⁶ González Bollo, *La teodicea*, p. 41, author’s translation.

⁴⁰⁷ Alfredo Lucadamo justified his actions at the DGEN quoting Bunge’s approval of them, A. Lucadamo, ‘Progreso de la estadística nacional’, *REA*, 9:104, 1927, pp. 180-1.

⁴⁰⁸ *REA*, ‘Discurso del Dr Eleodoro Lobos al inaugurar los cursos de 1919’, 1:10, 1919, pp. 269-70.

⁴⁰⁹ H. González Bollo, ‘Alejandro Ernesto Bunge: ideas, proyectos y programas para la Argentina post-liberal (1913-1943)’, *Revista Valores en la Sociedad Industrial*, 22:61, 2004, p. 64.

optimistic about his return to the DGEN in 1923.⁴¹⁰ The 1919 National Economic Conference, sponsored by the Argentine Confederation of Commerce, Industry and Production (*Confederación Argentina de Comercio, Industria y Producción*, CACIP), demanded an expansion of the DGEN when it was directed by Bunge,⁴¹¹ which suggests approval of his work.

Nevertheless, within Argentina Bunge's beliefs and social position, the connections with the economic establishment and the rumour of a hidden agenda impacted on the perception other sectors had of the information produced by him and the *REA*.⁴¹² Why? Due to his upbringing and family history, Bunge was part of the ruling establishment.⁴¹³ The *REA*, which generated "abundant and reliable information",⁴¹⁴ was where Bunge preached his new macroeconomic stance. In 1921 the journal experienced changes in its editorial board and began to have closer connections with establishment associations, like the Argentine Industrial Union (*Unión Industrial Argentina*, UIA) and the Argentine Rural Society (*Sociedad Rural Argentina*, SRA). It also increasingly supported the ideas of the CACIP, which represented the interests of US and major domestic capital. Pantaleón and Juan José Llach argue that the journal was Bunge's network base.⁴¹⁵ For Claudio Belini, it spoke for the UIA and the major domestic economic groups.⁴¹⁶ Bunge began to form part of the boards of directors of different firms and did not abandon these positions during his second term as DGEN Director. For this reason, Tulio Halperín Donghi categorises him as a lobbyist.⁴¹⁷ In the DGEN budget discussion of 1920, Socialist representative Nicolás Repetto denounced a scam. He claimed that the *REA* was using the DGEN's best and most loyal employees to first publish data in newspapers as a scoop, then release it in the *REA* and lastly in the DGEN yearbooks.⁴¹⁸ All this influenced the perception individuals had of Bunge's work.

Moreover, as part of the questioning of the appointment of Social Catholics in the DNT and the general distrust in numbers highlighted in Chapter III, the Socialists doubted the figures Bunge had produced since 1913, which they claimed were developed by an

⁴¹⁰ González Bollo, *La teodicea*, p. 76.

⁴¹¹ *REA*, 'Conferencia Económica Nacional', 2:17-18, 1919, p. 485.

⁴¹² This is also highlighted in Daniel, 'Una escuela', p. 80.

⁴¹³ González Bollo, 'Alejandro'.

⁴¹⁴ Falcoff, 'Economic', p. 62.

⁴¹⁵ Pantaleón, 'El surgimiento', pp. 185-9; Llach, *La Argentina*.

⁴¹⁶ Belini, 'El grupo', p. 31.

⁴¹⁷ T. Halperín Donghi, *Vida y muerte de la República verdadera*, Buenos Aires, 1999, p. 178.

⁴¹⁸ This implied that statistics became a good to be sold, González Bollo, 'La estadística pública', p. 183; González Bollo, *La fábrica*, p. 141.

“accomplished theologian of arithmetic science”.⁴¹⁹ The Socialists believed that the numbers generated by Bunge were tainted by his strong religious beliefs because, for them, they did not match reality. They argued that the inexistence of information on how data was collected implied a lack of honesty in its gathering. The group accused Bunge of using his position at the DGEN to play politics in a “cynical and disloyal” way.⁴²⁰ The Anarchists discredited Bunge for the same reasons.⁴²¹ In 1925 and 1926 the newspaper *Bandera Proletaria*, of revolutionary syndicalist extraction, questioned the veracity of the DE’s strike and price figures.⁴²² Workers associated his numbers with political interests and state manipulation, as some organisations believed official statistics were a new form of surveillance and control,⁴²³ à la Hacking. Notably, working class criticism of Bunge’s numbers started even though he was part of an agency closely linked to that class’ interests. The sector clearly distrusted Bunge’s CLI. In an article that reproduced figures from the 1919 *REA* piece, *La Vanguardia*, the Socialist newspaper, suggested that the rise in the cost of living cannot be “resolved with mathematical formulas or just by doing estimates on paper”.⁴²⁴ The distrust thus related to the novelty of index numbers, rather than being specific methodological critiques. Another important impact of this scepticism, commented on in more detail later, centred on workers’ lack of collaboration in the expenditure surveys. Despite this distrust, however, the Socialists used Bunge’s numbers to advance a political argument about the rise in prices,⁴²⁵ showing that there was a demand for quantitative data to depict the situation of the working class.⁴²⁶ However, this did not provide the estimate with substantial legitimacy, thereby contributing to the CLI’s sombre period.

Despite not being mentioned in the ILO’s *International Labour Review (ILR)*, Bunge’s estimates travelled quickly outside Argentina’s borders, probably thanks to the relationships he tried to establish when disseminating the coefficient of money correction.⁴²⁷

⁴¹⁹ ‘La última estadística sobre la desocupación obrera’, *La Vanguardia*, 13 December 1913, p. 1, author’s translation.

⁴²⁰ *Ibid.*, p. 1, author’s translation.

⁴²¹ González Bollo, *La teodicea*, p. 51-3.

⁴²² González Bollo, ‘La cuestión obrera’, p. 341; ‘El valor de una estadística’, *Bandera Proletaria*, 17 July 1926, p. 1.

⁴²³ Daniel, ‘L’objetivation’, p. 185.

⁴²⁴ ‘Por el abaratamiento de la vida’, *La Vanguardia*, 14 September 1919, p. 6, author’s translation.

⁴²⁵ González Bollo, ‘Ciencias sociales’, p. 29.

⁴²⁶ C. Daniel, ‘Conflictos sociales, controversias técnicas. Las estadísticas del mundo del trabajo en la Argentina (etapa inicial)’, paper presented at the Jornadas Elites Intelectuales y Formación del Estado, Buenos Aires, 28-30 April 2009.

⁴²⁷ *REA*, ‘El coeficiente de corrección de la moneda’, 2:20, 1920, pp. 83-5; *REA*, ‘El coeficiente de corrección de la moneda’, 2:21, 1920, pp. 167-72; *REA*, ‘El coeficiente de corrección de la moneda (1)’, 2:22, 1920, pp. 247-9.

In December 1924 the BLS's journal published the CLI in its monthly review.⁴²⁸ In July 1929 the 1928 *REA* update was commented upon in the same periodical.⁴²⁹ The *Encyclopaedia Britannica* 1921 cost of living entrance written by Bowley referenced the 1920 *REA* issue when he referred to "occasional calculations [of CLIs] on a similar basis" to that of the United Kingdom, United States, Canada, France, among others.⁴³⁰ In *The Making of Index Numbers*, Fisher's list on existing index numbers quoted Bunge's index and his foreign trade figures.⁴³¹ Even though many authors highlight Bunge's international connections,⁴³² they only base this on the information published by Bunge himself. The references listed here, by contrast, are new findings that are independent of his claims. They prove Pantaleón's idea that Bunge experienced unprecedented international acknowledgment,⁴³³ as well as Daniel's notion of how the international network legitimised the work of Argentine statisticians.⁴³⁴

Meanings and implications

The assumptions behind Bunge's CLI have meanings and implications that must be analysed to, then, construct the index.

The 1918 and 1919 *REA* articles described how to estimate index numbers, which were a new statistical tool not explained fully in the previously released foreign trade reports. These methodological innovations needed to be understood and thus legitimised. Following Scott, the beginning of the article becomes a "methodological and theoretical guide, the guarantee of accuracy and of truth".⁴³⁵ The explanation aimed to depict the objectivity and neutrality of the numbers, showing command over the methodology and providing the CLI with a more scientific framework.

Bunge omitted the savings component from the expenditure structure on which he based the CLI because he argued that the increase in prices relative to wages had reduced the possibility to save.⁴³⁶ This is a misleading explanation. Savings should not be part of these indices because they are not part of consumption, the cost of which aims to be determined with a CLI. Thus, savings should have not been mentioned by Bunge at all. From his

⁴²⁸ BLS, 'Prices and the Cost of Living', *Monthly Labor Review*, 19:6, 1924, p. 39.

⁴²⁹ BLS, 'Cost of Living', *Monthly Labor Review*, 29:1, 1929, pp. 232-3.

⁴³⁰ LSE Library collections, COLL MISC 0772, B6.

⁴³¹ I. Fisher, *The Making of Index Numbers: A Study of Their Varieties, Tests and Reliability*, Cambridge:MA, 1922, p. 433.

⁴³² De Imaz, 'Alejandro', p. 548; Daniel, 'Una escuela', p. 74; Pantaleón, 'El surgimiento', p. 190.

⁴³³ Pantaleón, *Una nación*, p. 60.

⁴³⁴ Daniel, 'Una escuela', pp. 72-3.

⁴³⁵ Scott, 'A Statistical', p. 124.

⁴³⁶ Bunge, 'Costo', p. 43.

explanation, however, it is inferred that he believed that WWI had eroded workers' savings capacity by making them poorer.

Bunge validated the shares of the three sub-indices through a direct comparison with the expenditure structures of the United States and Germany. Such a contrast aimed to show that the new estimate was a well-developed indicator that followed well-established procedures and not simply Bunge's invention or that of his students at the university. It placed Argentina on a similar level to these nations, claiming that the same statistics existed elsewhere and the country was in line with international developments. It also provided legitimacy to the index, portraying its objectivity. The assertion of similarity in the expenditure structures aimed to depict similar spending patterns between Argentina and the other two countries. Thus, it is assumed here that Bunge learned from previous criticisms. For similar reasons, in the 1924 DGEN piece, he presented a table contrasting the Argentine CLI with other countries, such as the United States, Denmark, Australia and Italy.⁴³⁷ Such a direct association presented an Argentina that was directly comparable with other countries, contributing to its configuration as a modern nation-state, as happened with population censuses in the late nineteenth century. Consequently, it would seem that the CLI was needed to compare the domestic situation with international trends rather than due to local needs.

The prominence of meat and wheat in the food sub-index linked the importance they had for Argentina at an international level, as they were amongst the country's main exports, to the significance they had domestically. Bunge clarified early on that the prices of bread were of a second class good, the type workers consumed. This implies that for him, workers had access and/or could only afford lower-quality bread, which probably applied to other goods as well. Thus, this thesis infers that Bunge wanted his index to be for a representative family who ate cheaper and basic foodstuffs, a similar assumption to the bare bones basket that is currently used by economic historians.⁴³⁸ The other food items component was relatively trivial, partly because all items were weighted equally. Thus, including in it non-food items like charcoal, firewood and tobacco did not appear as a contradiction. Kerosene (in the other expenditure sub-index), charcoal and firewood are the only elements that suggest that Bunge considered electricity and heating in the index.

According to Bunge's definition in the *REA* and *DGEN* articles, the other expenditure sub-index included textiles, like wool and cotton, and tools and appliances. As, following his

⁴³⁷ DGEN, *El costo*, p. 4.

⁴³⁸ Economic historians analyse the historical evolution of welfare through the bare bones basket; for example, R. Allen et al, 'Wages, Prices and Living Standards in China, 1738-1925: In Comparison with Europe, Japan and India', *Economic History Review*, 64:1, 2011, pp. 8-38.

explanation, no ready-made clothing items were included, wool and cotton can be seen as proxies for such goods. Moreover, the sub-index was estimated using import information, which suggests that only internationally-traded goods formed part of it. The goods Bunge listed when he described the sub-index fit this description. What explains this assumption? Bunge believed that replacing manufactured imports by domestic production and expanding regional crops would generate a certain autonomy from international trade.⁴³⁹ Thus, the use of the import prices was a consequence of the importance imports had in determining local prices and consumption. For Bunge, import prices and import trends drove domestic prices. In that regard, Bunge was a proto-Latin American structuralist. However, using an index that solely reflects the behaviour of imports, not adjusted for goods that were produced locally, implied that all that was imported was consumed. It also meant that manufactures were not produced nationally to the extent that they altered prices. Lastly, this suggests that, for Bunge, workers accessed imports easily.

The characteristics of the household that was supposed to be represented by Bunge's index must be inferred. Given that the 1913 and 1914 expenditure surveys were carried out amongst workers of the City of Buenos Aires and Bunge's statement that prices moved similarly throughout the whole country, it is assumed that the indicator referred to that urban population. For Bunge, concentrating on workers meant focusing on "the greatest share of general consumption".⁴⁴⁰ Due to the way, inferred later, through which Bunge determined the shares of the three sub-indices, this research suggests that the index referred to the average working class family.

For Bunge, consumption patterns in the city determined those in the country. Why? Bunge constantly extrapolated facts from the working class of the City of Buenos Aires, such as the shares of the three sub-indices, to all Argentines, as he saw a clear association between the consumption of workers and Argentines. Working class families, moreover, were perceived as the evidence base for measuring the capacity of domestic consumption,⁴⁴¹ and the working class was situated predominantly in the City of Buenos Aires.

The pitfalls of Bunge's CLI

Bunge's CLI is re-named here the 'comprehensive price index'. Why? The main pieces of information behind it were prices rather than quantities grounded on consumption

⁴³⁹ González Bollo, *La teodicea*, pp. 61-2.

⁴⁴⁰ Bunge, 'Costo', p. 47, author's translation.

⁴⁴¹ González Bollo, *La teodicea*, p. 12.

preferences. A proxy of quantities was only applied in the shares of the three sub-indices and in some items within the food sub-index. For the latter, there was no reference as to where those shares came from. The shares used within the food sub-index were not grounded on a budget survey. The food sub-index was updated using wholesale prices. No specifications were made regarding the type of housing and the prices considered when estimating the rent sub-index, and the percentage weight it received changed without a proper splicing of the series. The other expenditure sub-index was estimated using import data. Moreover, great emphasis was placed in the *REA* and the *DGEN* articles on explaining the methodology behind the estimates. However, Bunge provided little information about the characteristics of the household the index was meant to represent. While it clearly sought to reflect the working class of the City of Buenos Aires, its goal to characterise the average working class family is implicit and must be inferred.

The *Statistical Labour Yearbooks*, compiled when Bunge was head of the DE, had data on the expenditure surveys of the working class of the City of Buenos Aires for 1913 and 1914. Thus, he was well aware of their content, the methodological procedure and the data they had assembled. The *Yearbooks* had no specifications regarding how the information was collected, what sampling technique was used, or how the survey was carried out. Nevertheless, a copy of the questionnaire used was published, which sheds some light onto the enquiry. Families were asked how much money they had spent monthly and annually on pre-determined categories,⁴⁴² without a breakdown of the food items. Given the number of categories and the availability of official prices, the CLI could have been developed differently. Fuels and electricity could have been a fourth sub-index, instead of charcoal and firewood being in the food sub-index and kerosene in the other expenditure. Tobacco could have been excluded from the food sub-index, while wine could have been a separate component within it. However, as explained, in the *Yearbooks* the expenditure results were only divided into the categories food, rent, savings and other expenditure. No indication of how and why these categories were determined existed. Given that food was a closed component, the *Yearbooks* could not have been Bunge's source for establishing the shares of the food sub-index. The lack of disaggregation in the data published and used, given the questionnaire, suggests the existence of problems with the information, as presenting highly aggregated data was a way to minimise potential errors that could have been seen to

⁴⁴² Food; clothing; rent; fuel; electricity; taxes; life insurance; furniture and utensils; books and newspapers; private schools; transport; language, music, painting teachers or institutions; religious cult; charity; workers' unions; entertainment; health; wine and liquor; tobacco; and other expenditure.

undermine Bunge's estimates. This inaccuracy is inferred also from the DE's declaration that in the 1920s expenditure surveys there was a lack of workers' collaboration and interest.⁴⁴³ Workers' attitudes reflected their general distrust of official numbers. This only changed towards the end of the 1920s.⁴⁴⁴

The 1913 and 1914 expenditure data was collected to initiate a CLI, suggesting that Bunge had that intention since heading the DE and that he was aware of the need for price and budget information. The 1914 *Yearbook* argued that "when circumstances allow it, a retrospective investigation should be carried out to establish statistically prices of the basic goods, especially from 1900".⁴⁴⁵ The study was delayed given the need to be exact with the data. Systematic research began in 1913 with the creation of the DE, which acknowledged that until then, no price information had been gathered systematically. This statement casts doubts on the accuracy of prices of food items used for the years 1910 to 1912, and also explains why the re-constructions of Chapter VI begin in 1912.

Bunge obtained the average annual wage of workers of the City of Buenos Aires of m\$1,814.5 using a weighted average of the 1913 and 1914 data. However, he did not follow that procedure to achieve the four expenditure shares, as the results using the weighted average are 43.8% for food, 18.7% for rent, 30.3% for other goods, and savings 7.2%.⁴⁴⁶ Even if the gap between the estimates is not substantial, the problems are the inconsistency in the methods and a lack of transparency in the explanation. Bunge compared his data to international studies to justify the percentages of the three sub-indices. In a footnote, he presented expenditure shares for Germany and the United States for different wage categories and for the average of all cases. Assuming that Bunge highlighted in bold for each country the piece of data that should be considered similar to his Argentine numbers, when comparing the international numbers and his data, confusion arises. Following the Argentine procedure, the comparable data indicated by Bunge should have been the average of all the cases. However, that expenditure structure was not in bold, which suggests another inconsistency in his methods. For the United States, the information highlighted corresponded to the wage band with the second highest number of cases. For Germany, the amount of families per band was not presented. Figure 4 shows the discrepancies between the data highlighted by Bunge and the selected information from each country.

⁴⁴³ *CMDNT*, 'Recursos y gastos de la familia obrera; año 1925', 9:97, 1926, p. 1735; *CMDNT*, 'Los presupuestos', p. 1959.

⁴⁴⁴ González Bollo, 'Cuestión social', p. 24.

⁴⁴⁵ *BDNT*, 'Anuario 1914', p. 227, author's translation.

⁴⁴⁶ Those shares become 47.2%, 20.1% and 32.7% respectively if savings are excluded.

Figure 4: Different expenditure structures

	Food	Rent	Other expenditure
Bunge's structure for Argentina	50.0%	20.0%	30.0%
German data highlighted by Bunge	51.0%	18.0%	31.0%
German data, average of all cases	45.5%	18.0%	36.5%
German data, lowest wage band	54.2%	20.0%	25.8%
US data highlighted by Bunge	46.2%	18.4%	35.4%
US data, average of all cases	43.1%	18.1%	38.8%
US data, lowest wage band	50.9%	16.9%	32.2%

Note: Other expenditure for US data is the sum of the items heating, electricity, clothing and other. Other expenditure for German data comprises heating and electricity, clothing and other.

Source: author's elaboration based on Bunge, 'Costo', p. 43.

As depicted in Figure 4, for Germany and the United States, Bunge chose values in between the average of all cases and the lowest wage category. From this it is inferred that for him the expenditure structure of the average Argentine worker was similar to that of its least-earning peers elsewhere. The lowest US wage category presented a more similar structure to Bunge's. Regarding Germany, he seems to have chosen another similar configuration. This latter choice might relate to his better knowledge of German society, as he had studied there. These observations call into question Bunge's claim about the similarities of the expenditure structure to these countries, which he used to justify the rounding up of his sub-index shares.

Bunge's book *Los problemas económicos del presente* had data on Argentina's food consumption throughout the first six months of 1919, which is reproduced in Figures 5 and 6.

Figure 5: Values and shares of food items consumed, 1919

	Value (million m\$ _n)	Share (%)
Bread	420.0	23.0%
Meat (all types)	394.4	21.6%
Wine	159.2	8.7%
Sugar	133.3	7.3%
Tobacco	108.0	5.9%
Milk	70.0	3.8%
Yerba	49.3	2.7%
Beer	38.0	2.1%
Coffee	35.4	1.9%
Oil	19.4	1.1%
Cheese	17.6	1.0%
Rice	16.1	0.9%
Butter	14.6	0.8%
Tea	8.4	0.5%
Other goods	340.0	18.6%
Total	1,823.5	100.0%

Source: Bunge, *Los problemas*, pp. 209-10.

Figure 6: Values and shares of different types of meat consumed, 1919

	Value (million m\$ _n)	Share (%)
Beef	318.2	80.7%
Lamb	52.7	13.4%
Pork	23.5	6.0%
Total	394.4	100.0%

Source: Bunge, *Los problemas*, pp. 209-10.

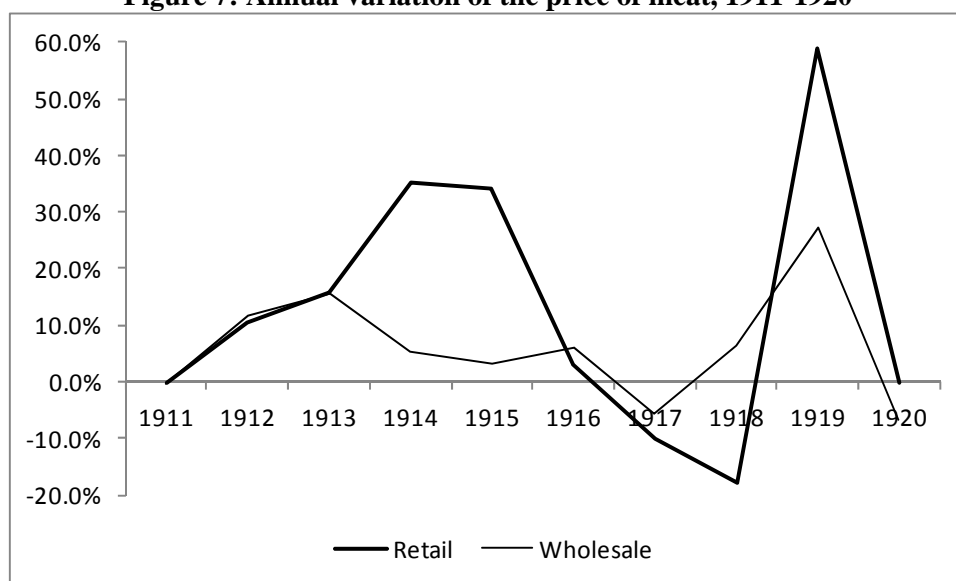
A contradiction is that for the food sub-index Bunge used information for Argentina as a whole when the CLI was meant to reflect the characteristics of an average working class family of the City of Buenos Aires. Figure 5 shows that, as Bunge claimed, in Argentina bread and meat were the two most consumed items. Their shares, 23% and 21.6% respectively, were lower than the 30% attributed to each in the food sub-index, which suggests that Bunge overestimated them. Wine was the third most consumed good, followed by sugar and tobacco. Food items, excluding meat and bread, did not weigh the same. In Figure 6, the shares of the different meat types consumed were similar to the proportions used in the comprehensive price index. No information was given regarding how the data was collected. Bunge claimed that the information came from a study on nourishment in Argentina, analysed by the Director of National Statistics.⁴⁴⁷ Thus, the information was

⁴⁴⁷ A.E. Bunge, *Los problemas económicos del presente*, Buenos Aires, 1920, p.209.

compiled by Bunge at the DGEN. Despite the information in Figures 5 and 6 not being directly comparable to Bunge’s index, he could have incorporated this detailed data into the index in the 1924 official release, adapted (or not) to the City of Buenos Aires.

The comprehensive price index was estimated using wholesale prices. Without providing evidence, Bunge stated that “when trying to study the ‘fluctuations’ of the overall cost of food, it is enough to know the ones relating to the wholesale price of bread, meat and the other items, given the correlation that exists between those fluctuations, when analysing them annually, and that of retail prices as well as the ‘prices the workers pay’”.⁴⁴⁸ This followed Fisher’s suggestion to estimate the index using wholesale prices, but disregarded Bowley’s, who argued for retail prices.⁴⁴⁹ Bunge’s choice was not necessarily based on the lack of retail prices, as the DE had begun to gather that information.⁴⁵⁰ Nonetheless, as he had wholesale prices readily available from his study on foreign trade, he probably used them for convenience. Figures 7 and 8 show the annual variation of wholesale and retail prices of meat and bread.

Figure 7: Annual variation of the price of meat, 1911-1920



Sources: Bunge, ‘Costo’, p. 46; Di Tella, *Precios unitarios de artículos de consumo y servicios, Capital Federal y provincias. 1901-1963. Primera parte*, Buenos Aires, 1964, pp. 5-6; DGEN, *El costo*, p. 13.

⁴⁴⁸ Bunge, ‘Costo’, p. 48, author’s translation.

⁴⁴⁹ Sember, ‘The Reception’, p. 376.

⁴⁵⁰ *BDNT*, ‘Precios de los artículos de primera necesidad’, 38, 1918, pp. 179-86; *CMDNT*, ‘Productos alimenticios’, 5:52, 1922, pp. 833-44.

Figure 8: Annual variation of the price of bread, 1911-1920



Sources: Bunge, 'Costo', p. 47; Di Tella, *Precios*, pp. 15-8; DGEN, *El costo*, p. 14.

Figures 7 and 8 demonstrate that, despite similarities, particularly for bread, wholesale and retail prices did not have the same trends between 1911 and 1920. Generally, retail prices fluctuated more pronouncedly than their wholesale equivalent, undermining Bunge's and Fisher's assumption of a correlation between retail and wholesale prices. The use of wholesale prices did not reflect the workers' situation, as they probably paid for goods according to their retail value. Figures 7 and 8 suggest that wholesale prices altered Bunge's results, producing higher estimates than those experienced by workers.

Bunge also asserted that even if, due to the different consumption patterns, the initial absolute value of the basket differed between Argentina as a whole and the City of Buenos Aires, the annual variations were the same. In January 1921, the *REA* released a chart, reproduced in Figure 9, with index numbers calculated for eight basic food items in different cities for January 1919 to June 1920.⁴⁵¹

⁴⁵¹ The food items were bread, meat, sugar, rice, potatoes, pasta, oil and *yerba*. No explanation existed on how the indices were calculated. *REA*, 'Artículos de primera necesidad', 6:31, 1921.

Figure 9: Evolution of food prices in different Argentine cities, January 1919-June 1920

Base: January 1919=100

	January, 1919	June, 1919	January, 1920	June, 1920
Tucumán (TU)	100	129	137	169
Las Flores (BA)	100	106	117	154
Salta (SA)	100	103	140	152
San Juan (SJ)	100	116	128	149
Azul (BA)	100	105	136	141
Mendoza (ME)	100	110	110	140
Rosario (SF)	100	113	115	139
Mercedes (BA)	100	108	123	138
Concordia (ER)	100	102	126	134
Luján (BA)	100	108	114	133
Santiago del Estero (SG)	100	98	116	133
Córdoba (CO)	100	106	112	133
Paraná (ER)	100	98	110	129
San Luis (SL)	100	107	111	119
Corrientes (COR)	100	93	106	117
Buenos Aires (BA)	100	104	110	116
Tandil (BA)	100	109	109	115
La Rioja (LR)	100	107	111	114
Bahía Blanca (BA)	100	102	93	102

Note: Provinces are in parenthesis. BA=Buenos Aires, CO=Córdoba, COR=Corrientes, ER=Entre Ríos, LR=La Rioja, ME=Mendoza, SA=Salta, SF= Santa Fe, SG=Santiago del Estero, SJ= San Juan, SL=San Luis, TU=Tucumán

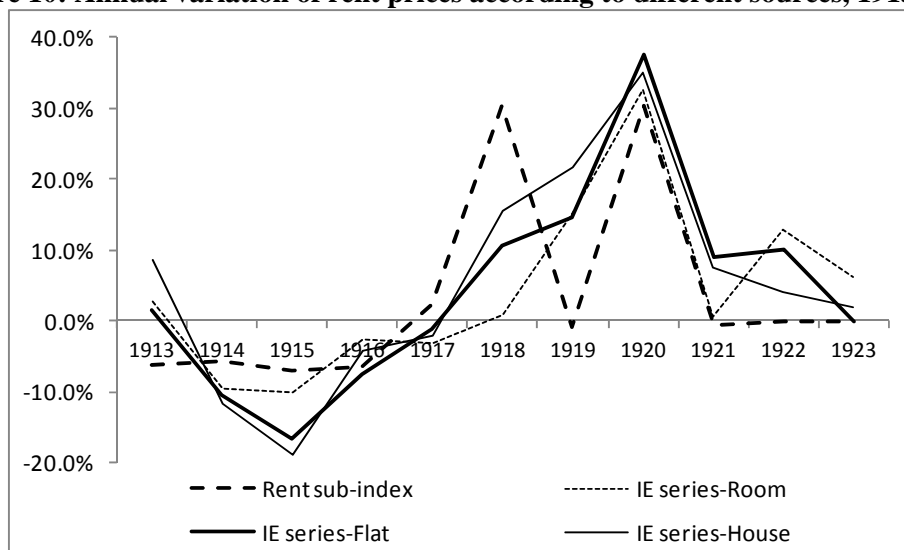
Source: REA, 'Artículos', p. 61.

Between January 1919 and June 1920, prices fluctuated very differently across Argentine cities, as Figure 9 shows. Out of the nineteen locations considered, the City of Buenos Aires ranked sixteenth, with a 16% increase in the period, far from the 69% rise in Tucumán.⁴⁵² Even within the Province of Buenos Aires, for example, dispersion was high. While Las Flores was the second highest in the country, Bahía Blanca was the city with the lowest increase. At least throughout this period, Bunge's assumption that the fluctuations in the CLI were representative for Argentina as a whole was not valid. If the City of Buenos Aires had systematically less price rises than the rest of the country, Bunge's CLI underestimated the price fluctuations of the whole country. This implies that elaborating a 'national' CLI with information from one city was not ideal and that using this index to see what occurred in the country as a whole might produce dubious results.

⁴⁵² 1919 and 1920 were years of intense price rises worldwide, see J.A. Dowie, '1919-20 Is in Need of Attention', *Economic History Review*, 28:3, 1975, pp. 428-50.

This thesis understands that the movement of the rent sub-index was based on all types of rents and leases across the country. Why? The four publications had little information on the issue. When Bunge provided figures for the general cost of all Argentine expenditures in the 1918 *REA* article, he argued that he had estimated the 1914 value of all rents and leases in Argentina. That number then fluctuated according to “the ups or downs relative to that year, given that the *harvested* area has not increased much and that building activity has been more or less paralysed”.⁴⁵³ He specified that the DNT had data for 1912 to 1915 and that the remaining years were estimated by him. The series presented in the general cost section was the same as the CLI sub-index. Figure 10 shows the annual variation of rent prices according to the 1918 *REA* and 1924 DGEN articles (the official series of the graph) and of average prices of just a room, a room in a flat, and a room in a house. The latter three series were compiled by the *Review of Economics and Statistics (Revista de Economía y Estadística)* and referred to the values of the City of Buenos Aires.⁴⁵⁴

Figure 10: Annual variation of rent prices according to different sources, 1913-1923



Note: ‘Room’ referred to the average price of just a room, ‘Flat’ related to the average price of a room in a flat, and ‘House’ indicated the average price of a room in a house.

Sources: author’s calculations based on Bunge, ‘Costo’, p. 52; DGEN, *El costo*, p. 20; IE, ‘Precio medio de la habitación ofrecida en la ciudad de Buenos Aires’, *Revista de Economía y Estadística*, 1:4, 1939, pp. 464-5.

While the three series published by the Statistical Institute (*Instituto de Estadística*, IE) moved relatively closely together, the rent sub-index behaved differently, as Figure 10 shows. The 30% rise in the rent sub-index in 1918, which Bunge used to justify the sub-index’s share change, was only half as intense for a room within a house and of just 0.9% for a single room. According to the IE estimates, rent prices rose more in 1919, peaking in 1920. The latter year

⁴⁵³ Bunge, ‘Costo’, pp. 60-1, author’s translation and italics.

⁴⁵⁴ See the Appendix for the methodological explanation.

was the only one in which the four estimates had a similar variation, when the series increased between 30.4% and 37.5%, with the lowest rise corresponding to the rent sub-index used by Bunge. The IE claimed that its estimates were similar to the DNT's numbers for the period 1933-1938, but never mentioned Bunge's estimates. Despite two spikes in 1918 and 1920, the rent sub-index fluctuated less than the IE numbers, which were probably closer to what workers' paid as they were developed using information from adverts in newspapers. This would result in a lower CLI than that experienced by workers. Figure 10 provides further evidence, then, that the rent sub-index reflected the trends for the country as a whole, undermining Bunge's estimate.

On the basis of the rent rise for 1918 in the official series, Bunge changed the shares of the three sub-indices from 50-20-30 to 50-26-24. He never provided evidence for this share change. Figure 11 synthesises the results of the expenditure surveys released by the DE that followed Bunge's 1913 and 1914 procedures, categorised according to the CLI sub-indices.

Figure 11: Working class expenditure structure, 1913-1929

	1913	1914	1919	1922	1923	1924	1925	1926	1928	1929	Average 1913-23	Average 1913-29
Food	47.9%	46.1%	59.6%	55.0%	53.0%	55.0%	55.0%	48.0%	51.5%	51.0%	52.3%	52.2%
Rent	20.0%	20.3%	17.8%	18.0%	17.0%	18.0%	18.0%	22.0%	22.5%	20.0%	18.6%	19.4%
Other expenditure	32.1%	33.6%	22.6%	27.0%	30.0%	27.0%	27.0%	30.0%	26.0%	29.0%	29.1%	28.4%

Sources: author's elaboration based on *BDNT*, 'Anuario estadístico', p. 128; *BDNT*, 'Anuario', p. 204; *CMDNT*, 'Presupuestos', pp.507-8; *CMDNT*, 'Los presupuestos', pp. 1958-9; *CMDNT*, 'Recursos, 1928', pp. 2695-2700; *CMDNT*, 'Recursos, 1929', pp. 3142-6.

Bunge's claim that the 1918 rise in rent prices led to a corresponding sub-index increase at the expense of other expenditure does not hold when looking at the 1919 numbers in Figure 11. This provides more evidence that the rent sub-index did not reflect what the workers of the City of Buenos Aires paid. Figure 11 shows that the proportion of the different categories of expenditure remained relatively stable and similar to Bunge's 50-20-30 estimates from 1913 to 1923 and 1913 to 1929. If anything, when comparing 1919 and 1923, a decline of food at the expense of other expenditure suggests that workers were getting better wages and thus spending less on food. It also hints at cheaper food prices and bigger margins to purchase other goods if wages remained equal. This evidence undermines the rationale behind the change in Bunge's sub-index shares.

As explained, the way in which Bunge defined the other expenditure sub-index suggests that it only comprised internationally-traded goods. In the 1918 *REA* article, he claimed that the other expenditure sub-index was estimated with the equivalent imported value, meaning that quantities and not only prices changed every year, while the shares of the

food sub-index, for example, remained fixed. Bunge mentioned that 21 annual index numbers were developed using the corresponding groups of articles and several isolated goods, such as charcoal – already considered in the food sub-index – and sackcloth.⁴⁵⁵ There were few further details of the 21 index numbers used, making it difficult to re-estimate the sub-index. His explanation implies that the same index numbers were constructed each year, meaning that the country systematically imported all products, which was a far-fetched assumption. From this it can be inferred that the other expenditure sub-index did not always contain the same items, altering the nature of the CLI. More importantly, a cross-check of primary sources shows that, despite Bunge's definition that hinted mainly at clothing-related items, the numbers used as the other expenditure sub-index referred to Argentina's total imports, and not just to a selected group of goods. This included a list of very diverse items that potentially were not all consumed by worker households. Indeed, a comparison between the other expenditure sub-index⁴⁵⁶ and the official import price index for Argentina⁴⁵⁷ for the years 1910 to 1926 shows that both estimates had practically identical year-on-year fluctuations. Though grounded on Bunge's understanding of the Argentine economic dynamics, as mentioned previously, the other expenditure sub-index did not depict fully what it aimed to reflect.

Bunge's CLI decisions were not, however, due to ignorance. Even if he was not trained as a statistician or an economist, he was well aware of the existing literature and had links with well-known scholars. His engineering studies in Germany put him in contact with the German Historical School,⁴⁵⁸ a discipline that relied heavily on statistics. Bunge's references to the work of his peers, an element of persuasion and strength that generates credibility,⁴⁵⁹ were also proof of his knowledge. He quoted “the retrospective research on wages and the cost of living in the nineteenth century by Sauerbeck, Wood, Levasseur, England's Board of Trade and France's Office du Travail”,⁴⁶⁰ the United State's *Cost of Living and Retail Prices of Food* (1904),⁴⁶¹ Dudoff Auspitz's and Richard Sieben's *Recherches sur la théorie du prix* (1914),⁴⁶² Fisher's *The Purchasing Power of Money*

⁴⁵⁵ Ibid., p. 54.

⁴⁵⁶ From *ibid.*, p. 54; DGEN, *El costo*, p. 21 and Bunge, ‘El costo’, p. 203.

⁴⁵⁷ Dirección Nacional de Investigaciones, Estadística y Censos, *Anuario estadístico de la República Argentina. Comercio exterior, 1947*, Buenos Aires, 1948, p. xv.

⁴⁵⁸ Lucchini et al, ‘El pensamiento’.

⁴⁵⁹ Latour, *Science in Action*, p. 33.

⁴⁶⁰ Bunge, ‘Costo’, p. 39, author's translation.

⁴⁶¹ The 1918 and 1919 *REA* articles quote this report as being released in 1914, but it was actually published ten years earlier.

⁴⁶² For other influences, see González Bollo, *La teodicea*, pp. 17-22.

(1913)⁴⁶³ and Bowley's *Elements of Statistics* (1907).⁴⁶⁴ The latter two were referenced in the index number section of the syllabus of the statistics course Bunge taught at the School of Economic Sciences of the University of Buenos Aires.⁴⁶⁵ Personal contact also existed between Bunge and Bowley. A letter from Bowley to Bunge was transcribed in the *REA* and Bunge claimed to have received from Bowley a copy of his April 1919 presentation to the Royal Statistical Society.⁴⁶⁶ The library of the London School of Economics and Political Science holds a copy of Bunge's *Los problemas económicos del presente* with an inscription from Bunge himself addressed to the "distinguished Professor Arthur L. Bowley", signed June 1920. Even when he distanced himself from the national statistical system after 1925, Bunge and his work continued to be recognised internationally. He was one of the founding members of the IASI.⁴⁶⁷ In 1941 the 1924 DGEN report and the *REA* were referenced by the IASI as Argentina's only work on the purchasing power of money and index numbers.⁴⁶⁸

Thus, Bunge's methodological decisions were not made due to a lack of knowledge, demonstrating how individuals' judgements affect statistics. Sometimes they were deliberate: when explaining index numbers, Bunge focused on methods that allowed him to "the cost of a group of items, disregarding quantities",⁴⁶⁹ showing his awareness of the need to have quantities to estimate a CLI. The anchor on prices, thus, is explained by the CLI's objective: to be the basis for the coefficient of money correction. It was also an established practice.⁴⁷⁰ Other times, choices were made due to data availability, justified by his understanding of the Argentine economy, such as the use of imports as a proxy for the other expenditure sub-index. In some cases, decisions were taken on the basis of wrong assumptions, like the use of wholesale prices instead of retail prices. In other situations, his opacity regarding sources or procedures makes it difficult to understand his reasoning. He tried to adapt international norms to the existing data and/or to the Argentine situation and its constraints. In that respect,

⁴⁶³ On the relationship between Bunge and Fisher, see M. Fernández López, 'La estabilidad monetaria: Fisher, Bunge y Prebisch', *Anales de la Asociación Argentina de Economía Política*, 3:29, 1994, p. 671; Sember, 'The Reception', p. 379.

⁴⁶⁴ Bowley's and Fisher's books led Bunge to conceive the analysis of problems through the use of index numbers, Fernández López, 'La estabilidad', p. 667.

⁴⁶⁵ *Anales de la FCE*, 'Estadística', 1, 1919, pp. 605-6.

⁴⁶⁶ A.L. Bowley, 'The Measurement of Changes in the Cost of Living', *Journal of the Royal Statistical Society*, 82:3, 1919.

⁴⁶⁷ IASI, *Statistical Activities*, pp. 822-5.

⁴⁶⁸ *Ibid.*, p. 179. However, these publications were not referenced in later reports, IASI, *Bibliography of Selected Statistical Sources of the American Nations*, Washington DC, 1947; IASI, *Costo de la vida y materias afines*, Washington DC, 1955

⁴⁶⁹ Bunge, 'Costo', p. 42, author's translation.

⁴⁷⁰ According to Stapleford, economists that analysed worldwide inflation used wholesale, not retail, price indices, Stapleford, *The Cost*, p. 65.

he contributed to the development of index numbers under particular situations. However, political decisions also influenced the CLI.

Re-assessing the comprehensive price index

The simplicity of the method used by Bunge and the availability of certain data he used allows the generation of sounder CLIs for the years 1910 to 1923, focusing on the change in the shares of the three sub-indices. The re-assessment helps explain why, having the relevant information to do so, Bunge decided to maintain his assumption of a change in worker expenditure habits in the late 1920s.

Solely considering the information in the 1918 and 1924 publications, two estimates can be produced. The corrected share change series follows Bunge's alteration. Due to the contradictions in the 1924 DGEN and the 1919 *REA* pieces regarding when to alter the shares, the year suggested in the former, 1919, is used. Why? If prices rise, the adjustment in behaviour might not be immediate. So if rent prices increased in 1918, the adjustment occurred in 1919. The 1928 *REA* article kept the change in 1919. To focus on the impact of the splice of the series due to the alteration in the shares, the information used on the rent and other expenditure sub-indices is Bunge's. The re-estimation was performed for the food sub-index because price data for all the goods was published in the original articles. Discrepancies between the corrected share change estimate and Bunge's series only arise from this sub-index and from when the splice occurred. The corrected no share change series follows the evidence of Figure 11 and maintains the 50-20-30 sub-indices shares, adding another level of analysis.

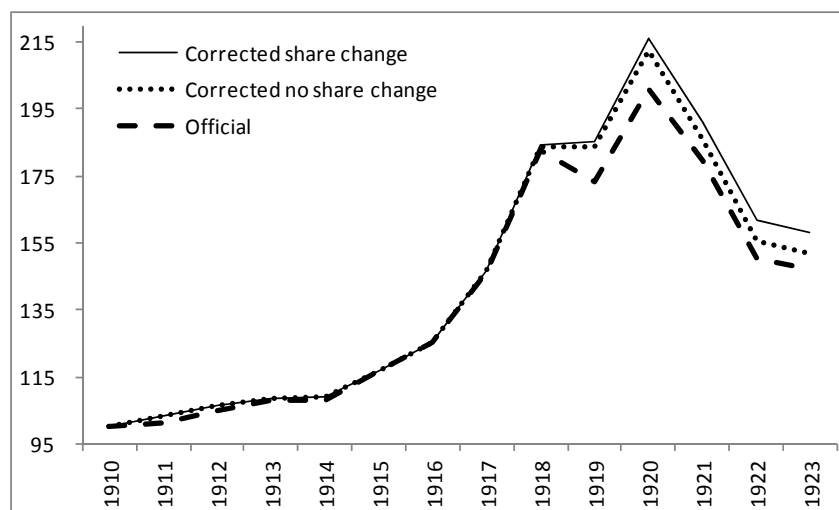
In both re-estimates, for the years 1910 to 1917, the data used is from the 1918 article. However, there are two notable discrepancies in the food sub-index when compared to the official series. Why? Bunge showed all the calculations used to estimate the food sub-index and the CLI. Therefore, any mistakes or typographical errors are made clear. In the 1911 estimate of the food sub-index, Bunge considered the wrong meat indicator number. Instead of using the correct figure, 98, he calculated 85. This rendered a food sub-index 2% lower in 1911 relative to 1910, when it was actually 2% higher. In 1912, there was a typographical mistake in the calculation of the meat indicator. The beef number used was 111, but Bunge arrived at 100. As a result, the meat indicator for Bunge reached 102 instead of 111. Given these issues, the re-estimated series shows higher values in 1911 and in 1912. Though subtle, these discrepancies suggest that, apart from not being objective, numbers are also subject to the mistakes made by individuals. Faults like these are less likely to exist today due to better

information technology. However, in the 1910s and '20s, the probability of individuals making such errors was higher.

The 1918 figure is calculated by applying the annual variation to the 1917 value in both re-estimates. The 1917 and 1918 figures used to estimate such variation have the 50-20-30 shares of the three sub-indices and 14 goods in the other food items category. This is done to keep consistency with the 1910-1917 numbers. For 1919 to 1923, the numbers are calculated applying the corresponding annual variation to the 1918 revised figure. Following the 1924 DGEN procedure, in the case of the corrected share change figures the re-estimated 1919 to 1923 series has the 50-26-24 percentages. The corrected no-share change numbers maintain the 50-20-30 split. Both include 18 goods in the other food items category.

It would appear that Bunge chose to maintain the share change assumption despite the availability of expenditure data that showed that such a variation did not exist. Moreover, he did not splice his estimates properly. Put together, both decisions resulted in a lower index. Figure 12 shows the two re-estimates and a series that combines the 1918 *REA* article and the 1924 DGEN publication data in the same way as the re-estimates, using Bunge's official CLI. Thus, the 1918 figure corresponds to the 50-20-30 share, but considers 18 items in the other food component.

Figure 12: Different estimates of the cost of living index, 1910-1923
Base 1910=100



Sources: author's estimates based on Bunge, 'Costo', pp. 46-55; DGEN, *El costo*, pp. 13-20.

Between 1910 and 1923 the official increase in the cost of living of workers of the City of Buenos Aires was 47.1%. For the corrected share change estimate it reached 58.2%, and for the no-change, 51.8%. What leads to these discrepancies? The smaller rise of the cost of living in the official data in 1911 and 1912 relates to the mistakes in the 1918 publication.

But the mayor differences that start in the late 1910s explain the gaps. In 1918, they are a consequence of the differences in the amount of goods in the other food items category. The divergence is accentuated in 1919, with the share alteration. Bunge did not use an appropriate procedure to merge the two sets of estimates, a method implemented by the BLS during the 1920s.⁴⁷¹ He simply estimated the 1914 to 1918 series with one group of proportions and from 1919 to 1923 with the other. Thus, his estimates were not correctly spliced. Both combinations presented here splice the two sets of numbers. They smooth the variation, rendering a more accurate CLI in the late 1910s. The fluctuations from 1920 onwards are quite similar: the series moved in parallel and the gap did not close. A higher index, like the one introduced here, would imply that workers could afford less goods and services. Given their wages, this would have made them poorer. The re-assessed estimates corroborate that statistics are not neutral or objective; they are subjective as they depend on individuals' choices, doings and mistakes. Regarding Bunge's choices, the rent sub-index spiked in 1918, as Figure 10 shows, so he wanted to incorporate that shock in his index because families could not trade down on their accommodation. However, Figure 11 demonstrates the lack of change in the expenditure structure. Increases were more moderate in the IE series in 1918, an estimate that, unlike the rent sub-index, reflected trends in the City of Buenos Aires. Lastly, in 1920 he decided that 1919 should be the year of the change in shares, when his evidence suggested that in 1919 the rent sub-index had not risen. These contradictions undermine confidence in the shares used and therefore the standard CLI, thereby impacting on the literature referenced in the Introduction that examines Argentine living standards and the effects of industrialisation. When the CLI is re-constructed in Chapter VI, these issues are explored further.

The sombre years of the Argentine CLI, 1925-1931

After its official publication, the use of the CLI shifted and the sombre years began. Why? The index was updated by Bunge in a 1928 *REA* article. The 1914 to 1923 estimates belonged to the 1924 DGEN report. The new estimates for 1924-1926 were attributed to the *REA*. In contrast to previous publications, calculations and the price data underlying the food sub-index were not displayed. Only the three sub-indices and the CLI were published. The change in the shares was in 1919.⁴⁷² A sole estimate for the years 1928 and 1929 grouped

⁴⁷¹ Ibid., p. 116.

⁴⁷² A.E. Bunge, 'El costo de la vida y los salarios en la Argentina (I)', *REA*, 21:123, 1928, pp. 202-3.

together is camouflaged in a 1930 *REA* article on wages.⁴⁷³ As the updated series came from the private sector, once again the indicator became quasi-official. These journal articles focused on the relationship between wages and prices. Hence, the 1928 *REA* article was the first of a three-piece series where Bunge compared Argentine and other countries' wages.⁴⁷⁴ Moreover, from the start, each issue of the journal had a statistical appendix, defined as the section that "will appear in every issue and it will comprise the most recent figures, taken from official reports or partially researched by the Review".⁴⁷⁵ The CLI was published initially under the section 'Index numbers' to become part of the 'Price' segment. The information appeared as index numbers of meat, bread, other food items; total food, rent, the other expenditure sub-indices; and the CLI. The series were updated in 1919 and 1920, in line with the *REA* releases. After the 1924 DGEN report, they were extended to 1923. The information remained the same until 1928, when the indicator was updated to 1926, the last update until the *REA*'s format changed in the early 1930s.

This implies that after its official release the comprehensive price index was not updated regularly or released as before, suggesting that the interest the *REA*, Bunge and the statistical system had in the CLI had changed.⁴⁷⁶ This thesis argues, together with the literature, that Bunge was not fully understood or appreciated by his contemporaries, which undermined his index. For González Bollo, the prosperity of the 1920s weakened the index's political and social impact.⁴⁷⁷ However, he never acknowledges the lack of updates nor puts this in the wider context of the trajectory of the national statistical system as he underestimates the changes that occurred in the late 1920s, as Chapter III argued. Nominal wages did rise substantially in the 1920s, relative to the mid-1910s.⁴⁷⁸ However, a well-established indicator should not cease to exist simply for that reason. Bunge, considering himself satisfied with his work, left the DGEN in June 1925. He never had another substantial post within the national statistical system.⁴⁷⁹ In an article published in the *REA* in 1925, Prebisch, then Deputy Director of the DGEN, claimed that the estimates of the CLI

⁴⁷³ *REA*, 'Los salarios nominales y reales en la Capital Federal', 12:144, 1930, pp. 455-6.

⁴⁷⁴ A.E. Bunge, 'El costo de la vida y los salarios en la Argentina (II)', *REA*, 21:125, 1928; A.E. Bunge, 'El costo de la vida y los salarios en la Argentina (III)', *REA*, 21:126, 1928.

⁴⁷⁵ *REA*, 'Movimiento económico de la República Argentina. Resúmenes estadísticos', 1:1, 1918, p. 81, author's translation.

⁴⁷⁶ A CLI for the period 1910-1940 appears in A.E. Bunge, *Una nueva Argentina*, Madrid (1940) 1980, p. 200.

⁴⁷⁷ González Bollo, *La fábrica*, p. 139.

⁴⁷⁸ Bunge, 'El costo', p. 204.

⁴⁷⁹ He continued to have relevant positions in the private sector until his death in 1943, including his post in the Finance Secretariat of the province of Santa Fe between October 1930 and April 1931. González Bollo, *La teodicea*, pp. 91-128.

were not published permanently due to the lack of staff.⁴⁸⁰ Prebisch's idea of insufficient staff probably related to Bunge's departure because, as Chapter III showed, its number of employees remained the same until 1930. This reinforces the view of a strong link between the comprehensive price index and Bunge. Moreover, the *Caja de Conversión* was re-established in 1927, restoring monetary 'normality' and undermining the relevance of the coefficient of money correction. In 1928 Yrigoyen fired the Director of the DGEN, which for González Bollo generated the delay in the publication of the foreign trade numbers. The greater importance of these figures compared to the CLI suggests that the DGEN and the ruling class prioritised the export-led model and how to measure it. Acknowledging González Bollo's argument regarding the diluted impact of the index, this thesis puts forward the idea of a sombre period of the CLI, which suggests a weakness in the development of the Argentine statistical system, given the CLI's centrality to it, as was stressed in Chapter III. The existence of the sombre period implies that the index had no clear use: it was neither an economic nor a socio-labour indicator. As argued in Chapter II, the context influences the development of statistics. In this case study, the indicator had no role in the existing political economy.

The existence of a sombre period is striking because three important events for the history of the Argentine CLI occurred: the First National Conference of Statistics (PCNE) in 1925 and the International Conferences of Labour Statisticians (ICLSs) of 1925 and 1926. From the perspective of the index, the events went unnoticed at the time. They were not mentioned in the *REA* updates, despite Bunge attending the PCNE. Nevertheless, all three events were named antecedents of the CLI published in 1935. This hints at the idea that either the comprehensive price index was not well established and/or it was not perceived as legitimate. This section tries to understand the lack of relationship between these events and the Argentine CLI.

The ILO as a promoter of labour statistics

In the 1920s and 1930s, the ILO was the main international organisation related to labour matters. Created in 1919 as part of the Treaty of Versailles, participation in the League of Nations involved compulsory membership of the ILO. Countries that remained neutral during WWI were invited to join, making Argentina a member since 1919. By 1931, ILO influence

⁴⁸⁰ R. Prebisch, 'Anotaciones a la estadística nacional', *REA*, 15:86, 1925, p. 99.

reached four fifths of the world population.⁴⁸¹ The ILO was founded on the basis that “universal and lasting peace can be accomplished only if it is based on social justice”.⁴⁸² Social justice was thus seen as an end in itself. Unique in its tripartite structure, it brought together governments, employers and trade unions. A breach of the tripartite principle meant that there was less possibility of agreement between these sectors. It also signified a smaller chance of all parties being informed of what occurred in the meetings, and gave them no opportunity to put forward their views. The International Labour Conference (ILC), the supreme policy-making and legislative section, met annually. After each ILC, conventions and recommendations were published; they were considered standards for national legislation and were expected to be ratified by its members. Promoting legislation and gathering information were the ILO’s primary functions throughout its first ten years. Promoting legislation implied drafting and applying nationally a system of international labour legislation, while the ILO was also tasked with “the collection and distribution of information on all subjects relating to the international adjustment of the conditions of industrial life and labour”.⁴⁸³

This chapter suggests that the relationship between the ILO and Argentina regarding labour statistics, an issue not contemplated by the existing literature, was shaped by the general disregard the organisation had for non-European countries. Albert Thomas, ILO director between 1919 and 1932, visited several South American countries in 1925. Three years later, the Argentine Carlos Saavedra Lamas was president of the eleventh ILC. Nevertheless, major European countries occupied the crucial posts, leading to an organisation “largely dominated by ‘a club of like-minded states’”. Countries like Argentina and Chile “produced some interesting studies with a specific focus on regional problems”,⁴⁸⁴ but the organisation was Eurocentric, an attitude partly fostered by Thomas.⁴⁸⁵ The literature agrees that Latin American countries were not part of the ILO agenda until the 1930s.⁴⁸⁶ The organisation had a limited role on the region’s reform debate until the 1950s because ILO recommendations presumed the region had a context similar to that of industrialised

⁴⁸¹ ILO, *The International Labour Organisation. The First Decade*, London, 1931, p. 42.

⁴⁸² G.A. Johnston, *The International Labour Organisation: Its Work for Social and Economic Progress*, London, 1970, p. 285.

⁴⁸³ ILO, *The International*, p. 90.

⁴⁸⁴ J. Van Daele, ‘The International Labour Organization in Past and Present Research’, *International Review of Social History*, 53, 2008, p. 491. The United States only became a member of the ILO in 1934.

⁴⁸⁵ N.O. Ferreras, ‘Entre a expansão e a sobrevivência: a viagem de Albert Thomas ao Cone Sul da America’, *Antíteses*, 4:7, 2011, pp. 136-7.

⁴⁸⁶ Changes involved the employment of full time correspondents and sending technical missions, Ferreras, ‘La construcción’; Herrera León and Herrera González (eds.), *América Latina y la OIT*.

countries.⁴⁸⁷ Within the Argentine labour movement, interest in the ILO was uneven,⁴⁸⁸ which partly explained the organisation's lack of influence. Only when Raúl Migone was established as a correspondent in Argentina in 1931,⁴⁸⁹ was the country fully incorporated into the ILO.⁴⁹⁰

Part of the existing literature claims that Argentina's relationship with the ILO and with the League were different matters.⁴⁹¹ However, this thesis argues that they must be understood together. Argentina and the League had a strained link, as Yrigoyen did not want to participate in it unless all countries, winners and losers in WWI, joined. Thus, throughout the UCR governments the country remained absent from League assemblies.⁴⁹² An ILO publication commemorating its ten years of existence places the Argentina-ILO and Argentina-League of Nations links at the same level.⁴⁹³ Argentina's tense relation with the League helps explain the lack of reference to ILC conventions in parliamentary debates and that their ratification did not occur until 1933.⁴⁹⁴ Moreover, this tense Argentina-ILO relationship was a concern for Thomas, as can be seen in the correspondence between him and Stephen Lawford Childs, the only correspondent in Latin America in the 1920s.⁴⁹⁵

Until May 1935, there was no reference to Argentine statistics in the appendices of the *International Labour Review (ILR)*. Specifically, Argentine statistics were rarely

⁴⁸⁷ J. Seekings, 'The ILO and Welfare Reform in South Africa, Latin America, and the Caribbean, 1919-1950', in J. Van Daele et al., *ILO Histories: Essays on the ILO and Its Impact on the World During the Twentieth Century*, 2010, Berne, pp. 145-72.

⁴⁸⁸ Ferreras, 'Entre a expansão', pp. 139-40.

⁴⁸⁹ Initially an official of the Argentine Ministry of Foreign Affairs, Migone was the behind-the-scenes negotiator of the rapprochement between the organisation and Argentina in the 1930s as he became the organisation's correspondent, N.O. Ferreras, 'O Premio Nobel e o burocrata: a conformação de um campo intelectual no Direito do Trabalho na Argentina da década de 1930', *Anos 90*, 16:29, 2009, pp. 213-36. Similar appointments existed throughout Latin America in that decade, F. Herrera León, 'Federico Bach, correspondiente en México de la Oficina Internacional del trabajo, 1934-1940', in Herrera León and Herrera González (eds.), *América Latina y la OIT*, pp. 88-112. In 1942, he edited the IASI's *Statistical Yearbook*, R. Migone (ed.), *Inter-American Statistical Yearbook*, New York, 1942.

⁴⁹⁰ Ferreras, 'O Premio', p. 222.

⁴⁹¹ L. Caruso, 'La política laboral argentina en la inmediata posguerra: una perspectiva internacional, 1907-1925', *Relaciones. Estudios de historia y sociedad*, 35:138, 2014, p. 30; Ferreras, 'O Premio'; Ferreras, 'La construcción'.

⁴⁹² M.M. Llairó and R. Siepe, *Argentina en Europa. Yrigoyen y la Sociedad de las Naciones (1918-1920)*, Buenos Aires, 1997; F. Luna, *Yrigoyen*, Buenos Aires, 1986, pp. 225-39.

⁴⁹³ ILO, *The International*, pp. 51-2.

⁴⁹⁴ P.L. Aguilar, 'Tras las huellas de la OIT en la regulación del trabajo femenino: Un ejercicio de archivo "transnacional"', paper presented at II Jornadas Historia, mujeres y archivos. Un debate con perspectiva presente-futuro, Tandil, 25-26 September 2014, p. 3.

⁴⁹⁵ ILO, CAT 5-8-3 (A), Letter from A. Thomas to S. Lawford Childs, 10 April 1926; ILO, CAT 5-8-3 (A), Letter from A. Thomas to S. Lawford Childs, 30 December 1926; ILO, CAT 5-8-3, Letter from S. Lawford Childs to A. Thomas, 19 January 1929. Though not officially named ILO correspondent, as part of the League's High Commissioner for Refugees, Lawford Childs was based in Buenos Aires between 1926 and 1931, and also reported on Peru and Bolivia. He then became part of the ILO Director's Cabinet under Harold Butler. For more information, see N.O. Ferreras, 'La misión de Stephen Lawford Childs de 1934: la relación entre la OIT y el Cono Sur', in Herrera León and Herrera González (eds.), *América Latina y la OIT*, pp. 154-6.

mentioned, if at all, in the ICLS reports. This was due to both the ILO's Eurocentrism and the behaviour of Argentina towards the ILO, which, in turn, was linked to the country's situation with the League. This influenced the sombre period of the Argentine CLI, in a national context where index numbers and socio-labour statistics were questioned, as was explained in Chapter III. Analyses of the *ILRs* published throughout the period and of the reports elaborated for and by the ICLS help explain the lack of ILO influence in the Argentine CLI between 1925 and 1931. Information gathered at the ILO archives and secondary literature support this hypothesis.

Research in the *ILR* and Thomas' visit to South America

The monthly *ILR* is the ILO's flagship journal.⁴⁹⁶ Since it was launched in 1921 and until the end of the 1930s, it had four sections. While 'Bibliography' always referenced Latin American countries, 'Statistics' had no numbers on any Latin American countries until January 1927, when Chile and Peru were introduced.⁴⁹⁷ There was no mention of the Argentine CLI until May 1935.⁴⁹⁸ As with the Chilean and Peruvian indices, once the indicator was quoted, it continued to form part of the subsequent issues, with some delay in the updates.⁴⁹⁹ 'Special articles' and 'Reports and enquiries' did not have specific pieces on the region or its countries until 1925, when Thomas travelled to South America. From then on and from time to time, some articles were published that exclusively concerned the region or a certain country.⁵⁰⁰ In 1932, Juan Ramos released an article on Latin America and the ILC. The piece on Thomas' South American journey and Ramos' analysis bring insight on the link between Argentina and the ILO.

Thomas visited Argentina, Brazil, Chile and Uruguay in 1925. His main concern was with each country's situation relative to the conventions, due to their lack of ratification. While the ILO was positive about the visit,⁵⁰¹ recent literature paints a gloomier picture.⁵⁰²

⁴⁹⁶ Van Daele, 'The International', p. 492.

⁴⁹⁷ *ILR*, 'Statistics', 15:1, 1927, pp. 119-25.

⁴⁹⁸ *ILR*, 'Index Numbers of the Cost of Living', 21:5, 1935, pp.748-69.

⁴⁹⁹ The January 1936 issue had the Argentine CLI until April 1935, *ILR*, 'Cost of Living', 33:1, 1936, pp. 120-4.

⁵⁰⁰ See M. Poblete Troncoso, 'Labour Legislation in Latin America I', *ILR*, 27:1, 1928; M. Poblete Troncoso, 'Labour Legislation in Latin America II', *ILR*, 27:2, 1928; *ILR*, 'Real Wages in Uruguay, 1914-1926', 17:2, 1928; and *ILR*, 'Labour Conditions in the Timber Industry in Argentina, Brazil and the Dutch Indies', 18:4-5, 1928.

⁵⁰¹ For example, Thomas was optimistic about the impact of his conversations regarding the countries' tripartite attendance to the ILCs. He was successful in "interesting the parliamentary committees in the question of rectification", *ILR*, 'The Visit to South America of the Director of the International Labour Office', 13:6, 1925, p. 758.

Norberto Ferreras, based on the notion that there was little mutual interest between these countries and the ILO, argues that Thomas' trip was part of his greater aim to give meaning to the organisation and obtain ratifications of the conventions, which did not occur.⁵⁰³ The history of the Argentine CLI supports the literature, as it is shown here that no progress was made regarding statistics.

The *ILR* journey report stated that Argentina "has continued almost without interruption to collaborate with the ILO", despite certain difficulties,⁵⁰⁴ which were not specified, but probably related to the tense relationship Argentina had with the League. Of the first six annual ILCs, Argentina sent delegations to four and responded to the questionnaires sent beforehand.⁵⁰⁵ A complete delegation travelled to the 1925 ILC, after Thomas' trip. Argentina also had a member in the ILO's Governing Body, that is, its executive council.⁵⁰⁶ From this perspective, Argentina's participation can be interpreted as the *ILR* report suggests: the country's collaboration is seen in the detailed response to those legislation-related questionnaires. According to the ILO, valuable research relations existed at that time between it and Argentina. It stated that the DNT was "in harmony with the remarkable industrial development of the country",⁵⁰⁷ and that it was "a Cinderella of civil service".⁵⁰⁸ It would have been helpful if the *ILR* report had explained in detail those relations, as *a priori* it cannot be understood what it meant. During Thomas' trip, labour offices or departments were visited to collect information and "arrangements were made for the establishment of regular relations with the Office".⁵⁰⁹ The report considered this task as successful, without specifying the type of information collected. The ILO archives have a booklet with figures, but no methodological explanation, which was made especially for Thomas and signed by the then DNT director, Luis García. It had information on rents (1912-1924), work accidents (1922), strikes (1907-1924), and employed worker population (1914-1924),⁵¹⁰ but no CLI, probably because by 1925 it was published by the DGEN. According to the trip's agenda,⁵¹¹ Thomas

⁵⁰² For a different view see D. Bonfanti, 'La OIT y la "Republica conservadora". Políticas sociales uruguayas y organismos internacionales en la primera posguerra', in H. Cairo Carou et al., *XV Encuentro de Latinoamericanistas Españoles*, Madrid, November 2012, pp. 1430-48.

⁵⁰³ Ferreras, 'Entre a expansão', pp. 144-6.

⁵⁰⁴ *ILR*, 'The Visit', p. 762.

⁵⁰⁵ República Argentina, *La República Argentina en la Organización Internacional del Trabajo*, Buenos Aires, 1925.

⁵⁰⁶ That did not attend all the Governing Body meetings, ILO, *The International*, pp. 51-2.

⁵⁰⁷ *ILR*, 'The Visit', p. 771.

⁵⁰⁸ ILO, CAT 5-8-3 (A), Letter from S. Lawford Childs to A. Thomas, 1 April 1926.

⁵⁰⁹ *ILR*, 'The Visit', pp. 771-2.

⁵¹⁰ ILO, CAT 5-8-7, Informaciones suministradas por el Departamento Nacional del Trabajo de la República Argentina al Director de la Oficina Internacional del Trabajo.

⁵¹¹ ILO, CAT 1-25-10, Voyage Argentine (Julliet-Août 1925).

did not meet with DGEN delegates. Regarding the statistics released in the *ILR*, the trip and the material gathered did not help to amplify the Argentine data reproduced in that section. Thus, the meeting was not successful, corroborating Ferrera's analysis.

After his experience as Argentine delegate at the 1931 ILC, Ramos was convinced that the ILO attached great importance to the attendance of the Latin American delegations. Particularly when dealing with the social problems caused by industrial development, Ramos argued that Argentina "has not yet followed the example of European states to set up close and fertile relations with the ILO".⁵¹² He was mainly referring to legislation and not to the production and use of socio-labour statistics. His reasoning, however, omitted the idea that problems have endogenous and local components. It might be the existence of those national factors that pushed the Latin American countries away from the ILO, preventing them from signing conventions, for example.⁵¹³ The main message behind Ramos' article was instead that Latin America had done little to benefit from the ILC by 1932. Ramos argued that Latin America had even contributed to the ILO's Eurocentrism, as "Europe will inevitably resent the light-hearted way in which certain Latin American countries contemplate their responsibility towards the world; and it is unfortunately beyond a doubt that our lack of a sense of realities often justifies such a view".⁵¹⁴ Hence, the ILO's Eurocentrism was not only due to its own dynamics, but also the lack of interest from the region itself. Between 1919 and 1924, for example, an average of just eight Latin American countries participated in each ILC. Moreover, even though Ramos was concerned with legislation, his conclusion can be extended to statistics, given the meagre participation of Latin American countries in the ICLS, which is shown below. His text was published several years after the ILO director's visit to the region, so from Ramos' comments there would appear to have been little improvement in the relationship between Latin America and the ILO in those years, which corroborates the impression that the improvement in the relationship occurred after the Great Depression – a shift that can also be seen in the history of the Argentine CLI.

The experts recommend: the ICLS

In 1920 the ILO established the Statistical Section, which started by solely collecting and compiling data on cost of living, prices and unemployment from periodicals published in various countries. When the section was created, the output of labour statistics was

⁵¹² J.P. Ramos, 'Latin America and the International Labour Conference', *ILR*, 25:6, 1932, pp. 733-40.

⁵¹³ Ferreras, 'La construcción', p. 10.

⁵¹⁴ Ramos, 'Latin America', p. 737.

considered unsatisfactory.⁵¹⁵ To address this situation, a conference of labour statisticians was envisioned “for the purpose of considering the problems involved in the compilation of such statistics”.⁵¹⁶

The first three ICLS are important for this study not only because of their timing, but because the first, carried out in 1923, set the guidelines for the future ones; the second, held in 1925, analysed CLIs; and in 1926, the third discussed family budget surveys. The considerations early on of these topics show the contemporary relevance of these statistics at an international level, enhancing the significance of Bunge’s CLI. For each of the matters to be treated, the office put together and distributed beforehand a technical study that analysed the aims of the statistics and the methods of collecting and arranging the data. After the conference, a set of resolutions on each statistic was released.

This thesis understands that the aims of the ICLSs were unclear, which reduced their impact in countries such as Argentina, where national statistical systems were still developing. To fulfil its aim to attain internationally comparable data, the Statistical Section had to make a “strenuous effort to achieve the fullest possible uniformity in the methods of computing statistics in different countries”.⁵¹⁷ Uniformity did “not mean merely that in each branch of statistics the same methods should be adopted everywhere, but rather that in addition certain general principles should be equally observed”.⁵¹⁸ The decisions made in the meetings did not commit governments but only pointed out the general lines to be pursued and the direction in which improvements should be sought. This belief was grounded on the idea that “statistics are a by-product of the application of legislative and administrative measures” and that they “should enlighten national conditions and international uniformity must always be subordinated to national clarity”.⁵¹⁹ On the one hand, the objective was to establish a set of guidelines, in search of uniformity and standardisation. On the other, given that statistics responded to national necessities, homogeneity ought to be subordinated to local requirements. This contradiction existed throughout the first three statistical conferences. From the analysis of ICLS publications, it can be understood that it seemed more important to generate interest in labour statistics in general and show the need to collect data, than to dictate recommendations about how to do so.⁵²⁰ The tension between

⁵¹⁵ ILO, *The International*, pp. 161-2.

⁵¹⁶ *ILR*, ‘The International Conference of Labour Statisticians’, 9:1, 1924, p. 3.

⁵¹⁷ ILO, *The International*, pp. 162-4.

⁵¹⁸ *ILR*, ‘The Third International Conference of Labour Statisticians’, 15:1, 1927, p. 17.

⁵¹⁹ *ILR*, ‘The International’, p. 4.

⁵²⁰ ILO, ‘International Conference of Labour Statisticians’, *Studies and Reports. Series N (Statistics)*, 4, 1924, pp. 25, 66; *ILR*, ‘The Second International Conference of Labour Statisticians’, 12:1, 1925, p. 18.

universalisation, standardisation and domestic characteristics was not new to the ICLS.⁵²¹ Loveman highlights it when discussing the goals of the ISC and the decisions made by Latin American government delegates when conducting censuses.⁵²² For Prévost and Beaud, “harmonisation was not a reality” when it came to the statistics considered by the ISC.⁵²³ Jeremy Seekings’ notion that the ILO’s lack of influence in Latin America related to its assumptions that did not reflect local situations can also apply to statistics.⁵²⁴ ICLS resolutions were for European countries. They assumed a certain level of development of national statistical systems that might not have been in place in Argentina at that time, contributing to the lack of influence of ICLS guidelines in the 1920s.

The relationship between the ILO and Argentina can be more fully grasped by looking at Argentina’s participation in the ICLS and the delegations sent, as well as the reference to its statistics in the reports analysed in the meetings. Only the publications and topics related to CLI estimates and family budget statistics will be referred to here, as they are the subjects of this thesis.

For the ILO, the delegates sent to the ICLSs had to include the heads of the offices that processed labour statistics because they were behind practical decisions back in their countries. The first statistical gathering followed the 1923 ILC, so delegates and advisors who attended the latter would stay in Geneva for the former. Representatives from eight Latin American countries went to the ILC.⁵²⁵ However, only Brazil participated in the first ICLS, thanks to the attendance of a commercial attaché at the Brazilian embassy in London, who was also a member of the Economic and Financial Committee of the League of Nations.⁵²⁶ The delegate was not a government representative and possibly not a labour statistics expert either.

In the appendix of the second ICLS report on CLIs there was a brief description of the index of various countries. It stated that “the index numbers described are generally those published by the appropriate government departments of different countries and reproduced

⁵²¹ Tension between international guidelines and domestic mechanisms determined the lack of ratification of the conventions, see Ferreras, ‘Entre a expansão’, pp. 139-40.

⁵²² Loveman, *National Colors*, p. 90.

⁵²³ Prévost and Beaud, *Statistics*, p. 60.

⁵²⁴ Seekings, ‘The ILO’.

⁵²⁵ Latin American governments generally sent diplomats that resided in Europe rather than experts on labour matters to meetings, see F. Herrera León and Y. Wehrli, ‘Le Bureau international du travail et l’Amérique latine durant l’entre deux-guerres. Problèmes et enjeux’, in I. Lespinet-Moret and V. Viet, *L’Organisation internationale du travail*, Rennes, 2011, p.160; Seekings, ‘The ILO’, p. 160.

⁵²⁶ ILO, ‘International’, p. 77.

each month in the *ILR*".⁵²⁷ Statistics published by private organisations were also considered. There was no mention of Argentina's comprehensive price index in the report or of any Latin American country, although other countries that were represented at the ICLS were also not included in the reports. Only one Latin American representative attended the second statistical meeting, although the Venezuelan delegate was the country's consul in Geneva, a government representative, but potentially not a labour statistics expert.

The appendix of the family budget enquiries report prepared for the third ICLS referenced surveys of different countries taken by departments of the central or local governments and private investigations.⁵²⁸ Argentina was the only Latin American country cited. The report referenced the DNT surveys on income and expenditure of working class families. Nevertheless, the Argentine enquiries were not quoted in the body of the report, probably because of the methodological doubts that existed.⁵²⁹ The same Venezuelan representative attended together with the Argentine Alejandro Unsain.⁵³⁰ They were not statistics experts. Unsain spoke one time at the conference in the family budget enquiries committee when they were discussing the third resolution.⁵³¹ He suggested "that the last sentence of the paragraph dealing with boarders and lodgers should be omitted from the resolution. In my country working-class families with boarders or lodgers formed an unimportant exception".⁵³² The final resolution was not modified accordingly. Thus, it cannot have been a meaningful intervention.

Unsain wrote a report on his experience at the third ICLS. He claimed that it tried "to achieve the universalisation of labour statistics and the greatest possible uniformity in their presentation to favour international comparisons".⁵³³ However, the ILO clearly stated that uniformity and standardisation related to methods rather than presentation. This confusion reflected the previously mentioned lack of clarity in the aims of the ICLS. Even if there was no requirement to comply with the resolutions, Unsain stressed that abiding by them was a moral obligation. He considered that great benefits would exist if all countries put them into

⁵²⁷ ILO, 'The Second International Conference of Labour Statisticians', *Studies and Reports. Series N (Statistics)*, 1925, p. 48.

⁵²⁸ ILO, 'The Third International Conference of Labour Statisticians', *Studies and Reports. Series N (Statistics)*, 12, 1926, pp. 55-7.

⁵²⁹ ILO, Statistics, T 101/2, Letter from G.E. Di Palma Castiglione to S. Lawford Childs, 27 March 1926.

⁵³⁰ Unsain, a labour law expert, was head of the DNT's Inspections Section since 1912 and DNT president between 1920 and 1922. Acquainted with labour matters and DNT affairs, he was a fundamental piece of the relationship between Argentina and the ILO, see Caruso, 'La política'; L.M. Caterina, 'Alejandro Unsain. Un hombre clave en la construcción del derecho del trabajo', *Revista de Historia del Derecho* [online], 40, 2010.

⁵³¹ The resolution is considered in the following chapter.

⁵³² ILO, 'The Third', p. 29.

⁵³³ A. Unsain, 'Informe del Dr Unsain, como delegado de la tercera conferencia de estadística del trabajo', *CMDNT*, 10:117, 1927, p. 2219, author's translation.

practice, but that complying with them would be problematic. He pointed out three main difficulties for Argentina: the lack of appropriate means, the dispersion of statistics at the national and provincial levels, and the psychology of the local working class population. He was hopeful, claiming that “at least in part it will be possible to modify the methods and the systems in place to present our social facts in the manner required by the conference so as to facilitate international comparisons”.⁵³⁴ Unsain believed that the ICLS put forward resolutions that implied huge efforts even for those nations that had experience in the development of labour statistics, claiming that the resolutions did not fully take into account national psychology. He addressed the importance of the local context, stating that “I find it hard to believe that our country can apply the recommended procedure, which implies the distribution of account books to workers so that they can record daily their income and expenses to establish the family budget”.⁵³⁵ For Unsain, Argentina was not ready to make family budget surveys as the statistical conference specified. This gives support to the notion that ICLS resolutions were made for European countries, as was ILO legislation. Nevertheless, he thought that resolutions that mainly implied changes in the way Argentina presented its statistics could be complied with and that would be beneficial for the country. Unfortunately, he did not specify what those other resolutions were. For Unsain, in Argentina the difficulties of labour statistics were even larger due to the lack of certain laws, without specifying what laws he was referring to. Given the characteristics of the national statistical system analysed in Chapter III, Unsain’s expertise on labour matters and what this chapter has argued, all his comments can be regarded as valid.

Unsain’s account gives substance to the argument that the objectives of the ICLS were unclear for the delegates that participated in the meetings. It also highlights how problematic it was to send individuals who were not experts on socio-labour statistics, as they were unable meaningfully contribute to the discussions. This provides more evidence that the lack of clarity regarding uniformity versus national specifications might have influenced the attendance of delegates, as well as the implementation of the ICLS resolutions in different countries.

The ILO and the sombre period of the Argentine CLI

The role of the ILO as promoter and guarantor of labour statistics began with its creation in 1919. It intensified in the mid-1920s with three ICLS in four years. Nevertheless, the

⁵³⁴ Ibid., p. 2227, author’s translation.

⁵³⁵ Ibid., p. 2228, author’s translation.

conferences' guidelines, which were very broad, as the following chapter argues, had no influence on the Argentine CLI until the 1930s. This lack of relationship also helps explain the sombre years of the Argentine CLI. Through the analysis of the *ILR* and the ICLS, information from the ILO archives and secondary literature, several reasons are identified here to explain the weak influence of the ILO on the Argentine CLI between 1925 and 1931.

Above it was argued that the ILO's Eurocentrism was not only a consequence of its procedures and interests, but also a result of the attitude of non-European countries, especially the Latin American ones.⁵³⁶ In the case of Argentina, it was also related to the weak link the country had with the League of Nations. Thomas' visit to South America did not have a substantial impact on the countries' participation in the ILC or the ICLS in the short term. In the annual meetings, Latin American delegations were small and in many cases breached the tripartite principle. Argentina's cooperation mainly implied replying to legislation questionnaires sent before the ILC and intermittent participation in the meetings. For the first three ICLSs, Latin American countries rarely sent a delegate and when they participated, emissaries were not experts in the field of labour statistics. After the 1935 ILC, a regional ILC took place in Santiago de Chile in January 1936,⁵³⁷ to which 21 countries attended, sending their tripartite delegations. Alcock argues that "the conference was a success". After it, Harold Butler, ILO director at that time, considered that "the ILO was definitely established in Latin America".⁵³⁸ The literature also agrees on it being a turning point in ILO-Latin American relations.⁵³⁹ Given the importance placed in the statistical conferences throughout the elaboration of the Argentine CLI published in 1935, as will be explained in Chapter IV, its publication in May 1935 in the *ILR*, and Figuerola's relationship with Migone, Butler's assertion appears well founded.

The articles about Latin American countries in the *ILR* were exceptions to the rule. Statistical data on these countries only started to appear in the late 1920s, despite existing, at least in the Argentine case, for years previously. The analysis of the three statistical conferences shows a tension between the uniformity and standardisation of labour statistics, on the one hand, and national clarity, on the other. Even if this strain was not unique to the ICLS, the conferences could have been more assertive about the issue, learning from the lessons of the ISC. The contradictions in the aims of the statistical conferences were

⁵³⁶ For policy developments, this argument is also seen in Seekings, 'The ILO', p. 172.

⁵³⁷ For more info see P. Herrera González, 'La primera conferencia regional del trabajo en América: su influencia en el movimiento obrero, 1936', in Herrera León and Herrera González (eds.), *América Latina y la OIT*, pp. 179-219.

⁵³⁸ A. Alcock, *History of the International Labour Organisation*, London, 1971, p. 134-7.

⁵³⁹ Y. Wehrli, 'Prologo' in Herrera León and Herrera González (eds.), *América Latina y la OIT*, p. 14.

misleading, especially for countries where labour statistics in general and cost of living estimates in particular were not fully established. In Argentina there was lack of interest in and development of labour statistics, which mainly referred to urban workers in the second half of the 1920s. The DE was approaching the bottom of its U-shaped trajectory, as Chapter III showed. Maybe the ICLSs were not seen as important enough or the ILO had not emphasised sufficiently their importance. Perhaps in the eyes of countries like Argentina, the ILO did not have enough authority yet for them to consider participating in the conferences.⁵⁴⁰ This reinforces the hypothesis that the ILO's Eurocentrism was also influenced by the attitude taken by Latin American countries.

As for the Argentine CLI, the lack of mention in the different ILO publications appears to have been due to the scarcity of Argentine statistical information that the organisation had. The inexistence of an official, full-time correspondent until 1931 helps explain the little statistical data that reached the ILO. Lawford Childs was probably very busy as he was also in charge of the refugee situation, which he had to report on,⁵⁴¹ and focused on more relevant matters, like describing the political context. Thomas and his team visited the DNT when the Argentine CLI was published by the DGEN, a statistical office not specifically related to the labour world, as the ICLS preferred.⁵⁴² The adoption of the methods proposed by the statistical conferences was not seen as feasible given the Argentine situation in the mid-1920s, according to Unsain. These circumstances help explain the lack of mention of the comprehensive price index in the second ICLS and the lack of consideration of the ICLS's resolutions in Argentina.

The ILO's 1931 account of its relationship with Argentina was less optimistic than the pieces describing Thomas' visit to South America and Ramos' article, and showed the ups and downs of the liaison more clearly. Matters between Argentina and the ILO and Argentina and the League were closely related. On top of the reasons mentioned previously, the ILO's lack of consideration of Argentina and vice versa probably had political motives, because, as mentioned above, under the Radical governments Argentina did not participate in the League. This also contributes to explaining the absence of Bunge's numbers from the *ILR*.

Unsain was a fundamental piece in the early relationship between the ILO and the DNT. Even if there were no ratifications of ILO conventions in the 1920s, the organisation's

⁵⁴⁰ For Thomas, by 1926 Argentina had not attributed to the ILO its full value, see ILO, CAT 5-8-3, Letter from A. Thomas to S. Lawford Childs, 28 June 1926.

⁵⁴¹ ILO, CAT 5-8-3, Letter from S. Lawford Childs to A. Thomas, 15 March 1928.

⁵⁴² However, Thomas visited the Ministry of Agriculture and obtained publications from the DERE, see ILO, Cabinet Albert Thomas, CAT 1-25-10, Letter from Ministry of Interior to A. Thomas, 1 August 1925.

guidelines were used to legitimise labour laws.⁵⁴³ However, he was not an expert on statistics. As a member of the DNT, it must be assumed that he knew about the data produced by its DE. He must have met Bunge when both of them were part of the department. Unsain published a book review in the first issue of the *REA*.⁵⁴⁴ Indeed, they were close enough for Unsain to speak at Bunge's funeral,⁵⁴⁵ and thus it is likely that the former was aware of the latter's work. However, Unsain did not send the CLI to the ILO. Why? Perhaps he did not trust Bunge's estimates. Maybe, Unsain simply avoided numbers in general, as the family budget information quoted in the third ICLS was sent by Lawford Childs in early 1926.⁵⁴⁶ Argentina was aware of the ILO's statistical developments. In 1919, Prebisch published a piece where he acknowledged that the League was debating the coordination and development of national statistics.⁵⁴⁷ In 1920 the DE had used ILO references to establish a definition of the unemployed.⁵⁴⁸ Apart from Unsain's participation at the ICLS, in 1928 Argentina received a letter from Thomas asking about the DNT's plans to release a CLI.⁵⁴⁹ It seems that no one replied saying that such an estimate existed, as ILO archives show that its Statistical Division still believed that Argentina did not have a CLI in 1934.⁵⁵⁰ Thus, the ILO was not aware of what Bunge was doing, which explains the absence of his comprehensive price index from the ICLS report and the *ILR*.

In his article on the general situation of Argentine statistics, Prebisch claimed that due to the sporadic nature of the comprehensive price index, the ILO did not publish the Argentine estimates of that indicator.⁵⁵¹ This statement was true for the sombre period, but not for the years 1918 to 1924. Given that Prebisch wrote this at the beginning of the sombre years, other motives should explain this absence. Several of these reasons are highlighted here.

The sombre period from the local perspective

In parallel to the ICLS, an important event in the history of the Argentine statistical system took place in November 1925 in the city of Córdoba, the PCNE. DGEN Director Lucadamo

⁵⁴³ Caruso, 'La política', p. 39.

⁵⁴⁴ *REA*, 'Bibliografía', 1:1, 1918, pp. 111-2.

⁵⁴⁵ A.M. Unsain, 'Oraciones fúnebres pronunciadas en el acto del sepelio de los restos del Ing. Alejandro E. Bunge', *REA*, 25:301,1943, pp. 295-6.

⁵⁴⁶ ILO, Statistics, T 101/2, Letter from S. Lawford Childs to T.F. Johnson, 24 February 1926.

⁵⁴⁷ R. Prebisch, 'La organización de las estadísticas', *REA*, 3:29-30, 1920, p. 443.

⁵⁴⁸ Daniel, 'Conflictos sociales', p. 21.

⁵⁴⁹ *CMDNT*, 'Nota del director de la Oficina Internacional del Trabajo sobre la Tercera Conferencia de los Estadígrafos del Trabajo', 10: 128, 1928, pp. 2519-20.

⁵⁵⁰ ILO, Information, I 1042/62/2, Information request from Phillips, 13 November 1934.

⁵⁵¹ Prebisch, 'Anotaciones', p. 99.

was its president. Heads and delegates of different national and provincial statistical offices and Prebisch, the Deputy Director of the DGEN, attended the meeting. Bunge, not part of the statistical system at the time, participated as a professor of statistics and headed the economics section. The objective of the PCNE was to “unify the procedures used to collect, compile and tabulate existing statistics across the country, suggest ways to improve them, and establish the most appropriate methods to organise statistics”.⁵⁵² The idea was to determine “real national statistics” because they were “means of government”.⁵⁵³ Lucadamo, in the opening speech of the “technical conference”, defined statistics as an “instrument capable of penetrating the plexus of the economic and social phenomena to unravel, through their numerical expressions, their characteristics and uniformities”.⁵⁵⁴

During the conference, eight commissions took place,⁵⁵⁵ together with a special section on general affairs, which displayed the main principles of the national statistical system. The economics and labour commissions are of interest to this research. The first one dealt with economic statistics that were partially, deficiently or not gathered, particularly industrial, banking and price statistics. The labour section “recommended the norms to unify the corresponding statistics across the whole country, expanding to the provinces the methods used by the DNT for the City of Buenos Aires”,⁵⁵⁶ relating to occupational accidents, wages, strikes, occupation, working class budgets, basic need items and child labour statistics. There was no explicit mention of the CLI in any of the sections, but the components of the index were discussed in the two commissions.⁵⁵⁷

The phrase ‘cost of living’ was mentioned only once and tangentially in the PCNE report. When talking about workers’ budgets, in the labour section, it was claimed that “independently from the calculation of the cost of living that should be carried out by other bureaus, the provincial Labour Departments should develop statistics on the resources and expenditures of the worker’s family”.⁵⁵⁸ The fact that aspects of the index were treated in two commissions suggests the lack of a unified criteria regarding who should study the living

⁵⁵² DGEN, *Recomendaciones de la Primera Conferencia Nacional de Estadística*, Buenos Aires, 1925, p. 9, author’s translation.

⁵⁵³ REA, ‘Conceptos sobre estadística’, 15:90, 1925, pp. 444-5, author’s translation.

⁵⁵⁴ REA, ‘Discurso en la Primera Conferencia Nacional de Estadística’, 1926, pp. 63-4, author’s translation.

⁵⁵⁵ Demography, finance, agriculture and livestock, economics, labour, communications, justice and prisons, and other statistics.

⁵⁵⁶ Ibid, pp. 11-2, author’s translation.

⁵⁵⁷ This differentiation was similar to that of the British Empire Statistical Conference of 1920, see Prévost and Beaud, *Statistics*, p. 121.

⁵⁵⁸ DGEN, *Recomendaciones*, p. 102, author’s translation.

conditions of the working class and estimate a CLI, as well as the lack of interest in the index, which implies confusion about its aims and uses.

Lucadamo believed that the conference had “magnificent results”, given that all the statisticians who took part of it had “an ample collaborative spirit and firm work purposes”.⁵⁵⁹ For González Bollo, the 1925 meeting showed the institutional maturity reached by the Argentine statistical system throughout the Radical governments.⁵⁶⁰ For him and Daniel, the PCNE and the CLI are important features of the Argentine statistical system. Despite the existence of a cost of living estimate, however, it was not important for the participants of the PCNE, Bunge included, to put forward recommendations regarding the indicator, undermining the optimism of González Bollo and Daniel. Propositions were put forward for the most well-established statistics the country had at that time, such as foreign trade. That the CLI was hardly mentioned illustrates the lack of interest in and acceptance of the index, even though it was seen as key in the statistical methodological revolution, which gives an indication of why the sombre period occurred.

Conclusion

Influenced by the German Historical School, Bunge believed that the DGEN must advise those in charge of Argentina’s administration and inform the country. He wrote that statistics enable “acts to be based in reality”,⁵⁶¹ as they are a neutral, descriptive tool and a means for action and solving problems, which foster “the worship of truth”.⁵⁶² Beginning with his headship of the DE in the early 1910s, Bunge aimed to modernise the national statistical system. As González Bollo explains, the price and quantity indices of foreign trade, national income estimates, working class family expenditure surveys and the CLI developed by Bunge were part of a methodological revolution. They were employed to understand the changing Argentine situation and produce an embryonic macroeconomic vision that differed from the existing outward-looking consensus in that it sought to enhance the domestic market. The CLI was released in the first issue of the *REA*, which suggests the importance of the indicator for Bunge. Given that no such indicator had previously existed, it was advertised as the first Argentine CLI. After being published by the DGEN, in 1928 Bunge released an update in the

⁵⁵⁹ *Ibid.*, p. 9, author’s translation.

⁵⁶⁰ González Bollo, ‘La estadística pública’, pp. 176-82.

⁵⁶¹ *REA*, ‘Ideas y planes de la importante dependencia que vuelve a dirigir Alejandro E. Bunge’, 5:57, 1923, p. 248, author’s translation.

⁵⁶² Bunge, ‘La conciencia nacional’, *Anales del Instituto Popular de Conferencias de la Prensa, décimo ciclo*, Buenos Aires, 1926, p. 123, author’s translation.

journal. His innovations, particularly the index, were not part of the dominant consensus, so they were distrusted. Porter suggests that numbers generated by lobbying organisations and business corporations may be accepted, but are more likely to be audited.⁵⁶³ The comprehensive price index was published in a journal linked to specific interests and it was constantly associated with one individual. This influenced its trajectory.

For Patriarca, the content organisation of Italian descriptive statistics had ideological origins, revealing specific conceptions of the state.⁵⁶⁴ In Argentina, a similar conclusion is obtained regarding the release of index numbers. The publication of foreign trade indices followed by the CLI shows the relevance of the former for the Argentine economy. This chapter argues that publishing his works in this order allowed Bunge to evaluate the public's reception of the novel methodological tool. Trade figures were prominent in the Argentine statistical system because of the characteristics of the economic structure. On the other hand, the CLI reflected the shifts that were taking place in the Argentine economy as a consequence of WWI, which was seen in the historical relevance Bunge placed on the need to estimate it. The release order also has to be understood in the context of the working class critics of Bunge's 1913 unemployment figures – criticisms that persisted in later years,⁵⁶⁵ particularly with respect to the lack of methodology in the report, and the general distrust in numbers. Bunge could have released the CLI after the unemployment figures, but the critiques and the novelty of index numbers probably held him back and he focused instead on less controversial, more 'important' figures like foreign trade. These same reasons, together with the questions that surged with the publication of *Intercambio*, explain his decision to initially release the CLI in the *REA* rather than through the DGEN, along with an extensive explanation of index number methodology, which did not exist in the foreign trade reports.⁵⁶⁶ Why? After publishing the foreign trade figures, Bunge believed that the general public was not ready for another official release of this sort, which would have had a different impact on public opinion given the nature of the index. Thus, he opted for a private release that, in theory, would have fewer repercussions. This form of publication, however, provides support to the accusations made by legislator Repetto of the misuse of public funds, which was mentioned earlier.

⁵⁶³ Porter, *Trust*, p. 214.

⁵⁶⁴ Patriarca, *Numbers and Nationhood*, p. 64

⁵⁶⁵ González Bollo, 'Para medir', p. 117.

⁵⁶⁶ A 'controversial' report elaborated by Corrado Gini in 1920 for the League of Nations on raw materials and foodstuffs was published in his journal, *Metron*, before being released by the League, Prévost and Beaud, *Statistics*, pp. 143-5.

This chapter has demonstrated that there was a continuity in Bunge's objectives and aims, which were clear from early on, despite the changes in the context in which he worked that somewhat altered what he did. His first interest in a CLI dated to the DE's *Yearbooks*, when he was primarily concerned with investigating Argentina's social question.⁵⁶⁷ The index then materialised towards the end of WWI, under new circumstances that had made an index necessary for economic reasons. This is a paradox, but it corroborates the influence that the changing context has on statistical development. Thus, its official release was always part of Bunge's plan of "reorganisation" for the national statistical services.⁵⁶⁸ Even if he disagreed with the 1921 reorganisation and notwithstanding his criticisms of the UCR governments, he returned to the DGEN in 1923 with "the aims and hopes to conduct the projects I had when I took the post before, which for various reasons I could not carry out".⁵⁶⁹ However, despite what González Bollo claims, the DGEN's increased financial allocation was not used to develop a sounder index. Some of the problems with the index, which have been highlighted in this chapter, were not revised by Bunge in 1924. Six months after the official release of the CLI, Bunge claimed in a conference that "truthful information and realistic interpretation vigorously make their way, as a method that opposes the old tendency to speak and proceed by perception".⁵⁷⁰ In 1925 he resigned because he "considered that the reorganisation of national statistics is completed".⁵⁷¹ Why was Bunge able to officially publish the index in 1924, although not in the DE? Leading up to 1918, Argentina experienced post-war price rises, while there were annual price decreases leading up to the official release, as Figure 12 shows. This brought a more receptive audience and a less controversial CLI. For Bunge, after the war the index had an underlying economic meaning. Plus, it was Bunge's statistic. He was the only one that had developed and released index numbers in Argentina at the time. There was a clear association between him and the CLI, and he was head of the DGEN. Hence, as Gonzalez Bollo puts it, Bunge's biggest achievement was to "develop and transfer to the state a set of schemes for analysis, adapting new tools of international prestige".⁵⁷² Following Desrosières,⁵⁷³ this chapter depicts the

⁵⁶⁷ Bunge's everlasting interest for the social question is grounded on the fact that a third of his articles related to this topic, Pantaleón, 'El surgimiento', p. 191.

⁵⁶⁸ Bunge, 'Publicaciones', p. 276.

⁵⁶⁹ *REA*, 'Ideas', p. 251, author's translation.

⁵⁷⁰ Bunge, 'La conciencia', p. 123, author's translation.

⁵⁷¹ *REA*, 'Texto de la renuncia de Alejandro E. Bunge', 8:84, 1925, p. 463, author's translation

⁵⁷² González Bollo, *La teodicea*, p. 27, author's translation.

⁵⁷³ Desrosières, *The Politics*.

gestation of an index guided by the norms of the nascent science of probability and the bureaucratic order of the public sector.

The CLI, based on an expenditure survey of the working class of the City of Buenos Aires rather than on a family budget enquiry, was heavily anchored on price data. Given its objective to be the basis of the coefficient of money correction, the foundation in prices is not a problem *per se*. No comprehensive analysis has previously been made of the methodology and meaning of Bunge's CLI, so his estimates have been able to travel in time without being questioned. That gap is filled in this chapter. It has been shown that the estimate had several problems, which were only visible after a de-construction of the four publications that describe how it was produced. Most importantly, Bunge changed the shares of the three sub-indices without sufficient evidence and did not merge the series properly. A revision of Bunge's calculations and a new splice of his estimates show that between 1910 and 1923 the CLI increased more than was officially estimated. The re-estimates thus demonstrate the importance of thoroughly analysing historical statistics to understand fully the way they were produced, as Platt and Tooze argue.⁵⁷⁴ The re-estimates also show how statistics are constructed by individuals who make their own judgements, following their own convictions and interests but potentially leading to mistakes. Bunge's *ad-hoc* adjustment of the weights of the sub-indices was based on dubious evidence, which can only be grasped using the de-construction/construction/re-construction methodology. The result suggests that he had access to the necessary information to make these re-estimates in the 1924 DGEN piece, but chose not to. It can be inferred, then, that Bunge's methodological choices were intentional and that his numbers were not neutral.

Bunge's methodological choices were not made due to a lack of knowledge. They sometimes related to the objective of the CLI, or his understanding of the Argentine economy. He could have mimicked what happened in other countries by elaborating an index for the country as a whole instead of just the City of Buenos Aires. Bunge's procedure has sound historical roots. Until the federalisation of Buenos Aires in 1880,⁵⁷⁵ the disputes between the Province of Buenos Aires and the rest of the country influenced the process of national organisation. Despite federalisation, the city in particular and the province in general have been conceived of as the centre of the country. In many aspects, Argentina has operated

⁵⁷⁴ Platt, *Mickey Mouse Numbers*; Tooze, 'Trouble with Numbers'.

⁵⁷⁵ Federalisation implied the political separation between the province of Buenos Aires and the city. This division was a key factor amongst the disputes between *unitarios* and *federales* in the nineteenth century.

frequently as a centralised entity,⁵⁷⁶ and Bunge's CLI did not appear as an exception, in that it depended heavily on data from the City of Buenos Aires but portrayed it as representing the whole country.⁵⁷⁷

Notwithstanding the critique of the CLI, this chapter still corroborates Daniel's idea that Bunge is a symbol of the members of the new group of Argentine statisticians that rose to prominence in the interwar period. Bunge provided a legitimate definition of statistical activity and provided a way of working that together gave a sense of objectivity and neutrality to his actions.⁵⁷⁸ His CLI transcended the domestic arena and was referenced in academic works abroad. It did not reach the ILO, probably because Bunge cultivated ties with certain international scholars, who focused on the general mathematical technicalities of index numbers rather than producing socio-labour statistics. This was enhanced by his economic affinities, which were closer to the United States. It has been suggested in this chapter that he kept his distance from the ILO/ICLS because he did not foresee the relevance the ILO would gain, and perhaps because the United States was not yet a member.⁵⁷⁹ Thus, his international recognition was hindered, and from the perspective of the international standardisation of socio-labour statistics fostered by the ILO, Argentina was an outcast in this period. His links to international scholars were an exception rather than a rule.⁵⁸⁰ Following Prévost and Beaud,⁵⁸¹ Bunge was a polymath: not only was he an acknowledged state statistician, he also had scholarly credentials. He transformed the local scientific field because when he "readapted" a methodology or nationalised it, [he] internationalised a represented space".⁵⁸² Despite its pitfalls, the CLI allowed Argentina to be depicted, understood and compared to other countries. The adaptation created new knowledge, contributing to the development of index numbers under particular constraints. Florencia Sember highlights Fisher's influence on Bunge regarding index numbers,⁵⁸³ but this chapter has found that she underestimates that of Bowley. Hence, Bunge partially adopted Bowley's notion of only

⁵⁷⁶ Specially since the 1990s a de-centralisation trend has existed, C. Smulovitz and A. Clemente 'Descentralización, sociedad civil y gobernabilidad democrática en Argentina', in A. Clemente and C. Smulovitz, *Descentralización, políticas sociales y participación democrática en Argentina*, Buenos Aires, 2004, pp. 7-38.

⁵⁷⁷ Indeed, until January 2014, the CPI that measured Argentina's inflation has referred to the City of Buenos Aires.

⁵⁷⁸ Daniel, 'Una escuela', pp. 65-80.

⁵⁷⁹ It was also despite his link with Gini, who participated in several ICLS.

⁵⁸⁰ *Ibid.*, p. 74.

⁵⁸¹ Prévost and Beaud, *Statistics*, p. 6.

⁵⁸² Pantaleón, 'El surgimiento', p. 190, author's translation.

⁵⁸³ Sember, 'The Reception',

“leaving the lid of the mysterious black box [of statistics] slightly ajar”,⁵⁸⁴ despite stating that procedures should be disclosed.⁵⁸⁵ While the general methodology of index numbers was explained, there was a lack of transparency in the sources used and in the procedures followed.

The sombre period of the Argentine CLI shows that the indicator was not entrenched in the country’s political economy. It was not a policymaking instrument because it was not seen as a proper, legitimate index. Despite all the progress experienced by the national statistical system, there was dissatisfaction with official statistics, distrust in the existing figures and concern about their discontinuity. The Argentine statistics field in the 1910s and 1920s suffered accusations of manipulation and lack of impartiality because, despite Bunge’s efforts, it was “subject to social pressures and external policies”.⁵⁸⁶ The analysis of the CLI reveals these concerns and generates a less optimistic view of the Argentine statistical system than the one depicted in Chapter III.

The sombre period had several different aspects. The novelty of Bunge’s views and of his quantitative methodology overwhelmed many of his contemporaries, like Unsain, who were unwilling to read or prioritise “topics and reports based on facts and figures”.⁵⁸⁷ Bunge was “unambiguously associated with both conservative politics and economic renovation”,⁵⁸⁸ generating distrust in his numbers from different sectors. The original use of his annual CLI was the coefficient of money correction, given the price rises triggered by WWI and the abandonment of the *Caja de Conversión*. In this context, the deceleration of price increases and the re-establishment of the *Caja* towards the end of the 1920s made the index less relevant. Particularly after the failure of the Herrera Vargas Plan and especially with Yrigoyen’s re-election, Bunge became extremely critical of the government.⁵⁸⁹ This economic and political scenario, coupled with Yrigoyen’s 1928 firings of the DGEN and DERE heads, drove Bunge away from the national statistical system, which impacted on the release of CLI updates, forcing them back to the private sphere. Consequently, publishing cost of living estimates was not as straightforward as before. This did not mean that he stopped estimating it, which contributes to the idea that the long-term series that exists is based on his estimates. As Starr suggests, accounting for something is recognising that the

⁵⁸⁴ Desrosières, *The Politics*, p. 177.

⁵⁸⁵ *BDNT*, ‘Anuario 1914’, p. 7.

⁵⁸⁶ Daniel, ‘Una escuela’, p. 81, author’s translation.

⁵⁸⁷ De Imaz, ‘Alejandro’, p. 548, author’s translation.

⁵⁸⁸ Falcoff, ‘Economic’, p. 40.

⁵⁸⁹ Pantaleón, ‘El surgimiento’, p. 194.

phenomenon is real.⁵⁹⁰ The sombre period – a statistical blackout – began when the coefficient of money correction was no long needed once the *Caja de Conversión* reopened. The uncertainty that its closure and WWI generated had ceased to exist. As a secondary use of the CLI was to measure the standard of living of the working class, the blackout is an acknowledgement that either that class was not relevant or that its standard of living was stable.

Only hesitantly was the CLI used as a socio-labour indicator that reflected the conditions of a nascent working class. As Curtis explains, at the start, Canadian census making was not guided by a project that could generate actionable objects.⁵⁹¹ This was the situation in this period in Argentina regarding the working class. As it was still forming, there was no pressing concern from dominant sectors for measuring the working class' standard of living.

In 1925 Prebisch anticipated the sombre period of the Argentine CLI by pointing towards the DGEN's lack of staff. He also justified the absence of the indicator from the *ILR* due to the inconsistency in the updates. It is argued here that neither of these statements was entirely true. The idea of a lack of staff was closely linked with Bunge's departure from the national statistical system, given his close ties with the index. The CLI's absence from the *ILR* supports the idea that Bunge did not cultivate the international links that would have allowed the index to reach the ILO. To explain the sombre years of the Argentine CLI, however, it is necessary to focus on Bunge's changing position within Argentina, as well as on the relationship between the ILO and Argentina and the country's emerging working class' distrust of the indicator.

Recent literature argues that there was a loose relationship between Latin America and the ILO, with a turning point in the early 1930s. The relationship remained loose despite Thomas' trip to Latin America in 1925, some participation of these countries in the ILC and the ICLS and the presence of Lawford Childs in the Southern Cone. Thomas was Eurocentric and had a lack of interest in the region, which was reciprocated. Letters between Thomas and Lawford Childs suggest that the specific relationship between Argentina and the ILO must be understood within the context of the country's lack of participation in the League of Nations. Much as in the subsequent historical literature, the Thomas-Lawford Childs correspondence focused on legislation and convention ratification, with little attention, if any, placed on statistics. This dimension of the Argentina-ILO relationship has been brought into the

⁵⁹⁰ Starr, 'The Sociology', p. 41.

⁵⁹¹ Curtis, *The Politics*, p. 307.

analysis in this chapter, which has helped explain the almost complete absence of Argentine statistics, particularly the CLI, in the ICLS reports,⁵⁹² despite Unsain's presence at the ILO and the international dissemination of Bunge's estimates. Links with Argentina remained weak in the 1920s, much as the literature suggests in the case of legislation, contributing to the sombre years of the Argentine CLI. As will be suggested in the following chapter, the ILO influence on the Argentine index was greater in the 1930s. The leading role its statistical conferences sought to have with respect to socio-labour statistics is evidence of how numbers are a technology of distance, as defined by Porter.⁵⁹³ The idea of universalisation in the procedures also follows Porter. However, the emphasis on the local components depicts how numbers are social constructs and that their elaboration is subject to individual and societal judgements that are linked to the historical circumstances in which they are developed.

In his publications, Bunge did not quote the ICLS, although he knew of it.⁵⁹⁴ He attended the PCNE, where CLIs were not discussed. Despite his disengagement from the ILO/ICLS world and in a political context that he disagreed with, he probably became more sceptical about the way the comprehensive price index was developed. This thesis claims that the absence of references to the statistical conferences both in the PCNE and the 1928 *REA* article were deliberate. The sombre period was also on the result of Bunge losing faith in his estimate, his disregard for the resolutions of the ICLS and his departure from the national statistical system.

Reinforcing the ILO's lack of influence in Argentina, Bunge's CLI was distrusted by the working class. For Porter, numbers do not stick if they are not accepted as valid by those whose characteristics they aim to measure. This trust must be "anonymous and institutional rather than personal and face to face".⁵⁹⁵ This chapter has shown that the comprehensive price index was closely associated with Bunge – an individual with prestige and director of the *REA*, but who was linked to particular economic and religious sectors – rather than to a statistical agency. Consequently, the index was too closely tied to one individual whose background and interests were perceived as being too far from the social class that it would potentially describe. This made it complicated for these numbers to endure, even when Bunge left the statistical system. Apart from the lack of influence of the ILO, then, the sombre

⁵⁹² An analysis of the reports that circulated before the first three ICLS on other statistics shows that they did not quote any Argentine numbers.

⁵⁹³ Porter, *Trust*, p. ix.

⁵⁹⁴ The resolutions of the third ICLS reached Argentina in July 1928, ILO, T 105/3/6/1, Letter from A. Gallardo to G.E. Di Palma Castiglione, 28 September 1928.

⁵⁹⁵ Porter, *Trust*, p. 214.

period of the Argentine CLI also relates to the distrust in where the index was produced and the person that produced it, especially as it was a new type of methodological tool.

In 1925 Prebisch wrote that “it is better to have no statistics whatsoever than to have wrong statistics that could lead to misguided conclusions”.⁵⁹⁶ Given the characteristics of the comprehensive price index and the sombre years that followed this statement, his argument appears to have been taken literally, as there was little further interest in constructing an Argentine CLI for almost a decade. As the next chapter will analyse, the country had to wait until the 1933 family budget survey for the first genuine Argentine CLI.

⁵⁹⁶ Prebisch, ‘Anotaciones’, p. 97, author’s translation.

Chapter V - De-construction and construction: The first Argentine cost of living index, 1932-1943

Introduction

In 1932, Justo became president. As part of his aim to normalise the national statistical system after the episodes of 1928-1931, as described in Chapter III, a September 1932 presidential decree argued for the need to know the fluctuations in the cost of living of workers and the purchasing power of wages. A research plan was developed to estimate regularly the CLI of the workers of the City of Buenos Aires and other parts of the country.⁵⁹⁷ The tasks were assigned to Figuerola and the DE of the DNT.⁵⁹⁸ The elaboration of the 1933 CLI became an act of government, turning the index once again into an official indicator.

Throughout October 1933, the DE carried out a family budget survey in the City of Buenos Aires to determine the needs of workers. The results helped establish a CLI, published by the DNT in 1935. Partly because the 1933 CLI was based on a family budget enquiry, the estimate is here re-named the first Argentine CLI. Unlike Bunge's articles, the 1935 DNT report lacked a detailed methodological explanation. Problematically, the index was based on a month-long survey, while other issues also arose. This chapter suggests that Figuerola knew the estimate had problems and encouraged a complementary yearlong survey, as part of a learning-by-doing process. The methodology of the 1933 CLI must be understood through the de-construction of several publications, which is a more complicated process than that carried out in Chapter IV. Why did the sombre period end in 1933? How was the 1933 CLI elaborated? Why and by whom was it developed, in which context and with what aim? What were its most important assumptions? What were its most important pitfalls? Could they have been avoided? Why do these pitfalls matter? How does the 1933 index differ relative to Bunge's? To answer these questions, this chapter analyses the history of the Argentine CLI between 1932 and 1943 through the de-construction and construction of the index. Figure 13 illustrates the statistical publications and events of the period 1925-1942 linked to the Argentine CLI.

⁵⁹⁷ *BIDNT*, 'Reglas', p. 3548.

⁵⁹⁸ Prebisch and Ernesto Maloccorro were also mentioned in the decree, but never appeared related to the 1933 CLI. Thus, only Figuerola is identified with the indicator.

Figure 13: Events and publications related to the Argentine CLI, 1925-1942

Date	Name of event (E)/publication (P)	Description	Reference in chapter
April, 1925	Second ICLS (E and P)	International conference of statisticians that discussed cost of living estimates.	Second ICLS
November, 1925	PCNE (E and P)	Argentine conference of statistics, report published by DGEN.	PCNE
October, 1926	Third ICLS (E and P)	International conference of statisticians that discussed family budget surveys.	Third ICLS
September, 1932	Presidential decree passed to elaborate a CLI (E)	-	-
August, 1933	Costo de la vida. Reglas para proceder a la investigación del costo de la vida de la población obrera. Encuesta básica y rectificaciones periódicas (P)	General rules on how to develop the 1933 CLI, published in BIDNT.	Rules
September, 1933	Costo de la vida. Instrucciones para realizar la investigación del costo de la vida de la población obrera de la Capital Federal (P)	Instructions on how to develop the 1933 CLI, guidelines given to all the individuals involved in the process, published in BIDNT.	Instructions
October, 1933	Family budget survey carried out in the city of Buenos Aires (E)	-	1933 budget survey
October, 1933	Costo de la vida. Resumen de casos a que se extiende la investigación del costo de la vida obrera en la Capital Federal, distribuidos por actividad profesional, empresas y sindicatos obreros (P)	Chart that showed dissemination of surveys by distribution channel, published in BIDNT.	-
September, 1934	Figuerola officially named head of the DE of the DNT (E)	-	-
October, 1934	Tasks of DE of the DNT are re-organised (E)	-	-
October, 1934	First release of an estimate of the 1933 CLI (E)	October 1934 value of the 1933 CLI. No data on methodology of index was published.	-
December, 1934	DNT resolution to conduct an annual family budget survey in 1935 (E)	-	-
1935	Working class family budget survey in the city of Buenos Aires (E)	-	Complementary survey
February, 1935	¿Cómo se investiga el costo de la vida? (P)	Figuerola's article on the methodology behind the 1933 CLI.	Figuerola's 1935 article
April, 1935	Costo de la Vida. Presupuestos familiares. Precios de artículos de primera necesidad. Índices del costo de la vida (P)	Official publication of the full results of the 1933 budget survey and of the 1933 CLI, released by the DNT.	1935 DNT report
May, 1935	ILO monthly review publishes the 1933 CLI for the first time (E)	-	-
1936	Census of the city of Buenos Aires (E)	-	-
July, 1937	Condiciones de vida de la familia obrera (P)	Official publication of the 1935 family budget survey and how the results affected the 1933 CLI, published by the DNT.	1937 DNT report
1942	Teoría y métodos de estadística del trabajo (P)	Figuerola's book on labour statistics. Explanation of the 1933 CLI and the complementary survey.	Figuerola's 1942 book

Notes: BIDNT= Newsletter of the National Labour Department (Boletín Informativo del Departamento Nacional de Trabajo); CLI=Cost of living index; DE= Statistics Division (División de Estadística); DGEN= General Board of Statistics (Dirección General de Estadísticas de la Nación); DNT= National Labour Department (Departamento Nacional de Trabajo); ICLS= International Conference of Labour Statisticians; PCNE= First National Conference of Statistics (Primera Conferencia Nacional de Estadística).

Source: author's elaboration.

The 1935 DNT report is the leading publication of the de-construction. Nevertheless, as Figure 13 shows, several DNT articles and two pieces by Figuerola are also de-constructed. The construction of the methodological procedure suggests that a ‘narrowing down process’ of the sample existed that was acknowledged but not explained fully by Figuerola. Moreover, the family structure used as the basis of the index was not the typical family; it was selected due to the lower values it presented.

This chapter begins with a de-construction, in chronological order, of six publications that explain the 1933 CLI,⁵⁹⁹ focusing on the information put forward in the pieces and on the discrepancies between them. The de-construction not only describes the articles, but in some instances briefly highlights issues that are examined later. The second section is the construction of the 1933 CLI, which begins with the analysis of the context, uses, reception and meaning of the estimate. Because the ICLS and the PCNE are cited as antecedents of the 1933 index, these episodes are analysed to determine the extent to which the DE pursued their recommendations. This is followed by an analysis of the pitfalls of the 1933 CLI. The third section concludes.

De-constructing the 1933 CLI

Establishing Rules and Instructions

The August and September 1933 editions of the National Labour Department Information Bulletin (*Boletín Informativo del Departamento de Trabajo, BIDNT*)⁶⁰⁰ contained articles explaining the Rules and Instructions to carry out the October 1933 budget survey.

The Rules

According to the Rules, a budget survey should be conducted among worker families living on a monthly wage of m\$120, m\$140, m\$175, m\$200 or m\$230. Within each wage category, booklets should be distributed among households comprised of couples without children and couples with two, four and six children. 150 questionnaires should be handed out per wage category and family type, providing 3,000 cases. Among employees, the same procedure should be performed for those with monthly earnings of m\$250, m\$300, m\$350, m\$400, and m\$500, adding another 3,000 surveys. Hence, 6,000 surveys were to

⁵⁹⁹ The 1935 DNT report is de-constructed before Figuerola’s 1935 piece because the former is the official publication of the 1933 CLI.

⁶⁰⁰ The *BIDNT* was the DNT’s chronicle, which collated its reports and research.

be distributed proportionally by intermediaries: DNT labour inspectors, labour unions, and employers and their associations. Wage categories are here named the monetary condition of budgets, while family structures are called the demographic condition. Both are assessed in detail in the construction phase.

The Rules stated that each family should record the “daily quantity of all the food and daily household goods purchased, indicating the price paid for them. [...] Long-term household goods and clothing purchases should also be registered”.⁶⁰¹ Price lists should be developed by the DE, drawing from different types of stores and outlets. Once the information was gathered and classified according to wage and family structure, the contents of the budgets were to be grouped under: food, household goods, housing services, clothing, and furnishings, leading to sub-indices for each one.⁶⁰²

The Instructions

Regarding the monetary and demographic characteristics of the households as well as booklet distribution during the 1933 survey, the Instructions synthesised the Rules in a chart, reproduced below as Figure 14.

Figure 14: How booklets should be distributed, 1933 budget survey

Family structure	Monthly income										Total cases to be surveyed
	Workers					Employees					
	120	140	175	200	230	250	300	350	400	500	
Couple	150	150	150	150	150	150	150	150	150	150	1,500
Couple and 2 children	150	150	150	150	150	150	150	150	150	150	1,500
Couple and 4 children	150	150	150	150	150	150	150	150	150	150	1,500
Couple and 6 children	150	150	150	150	150	150	150	150	150	150	1,500
Number of cases	600	600	600	600	600	600	600	600	600	600	6,000

Source: *BIDNT*, ‘Instrucciones’, p. 3575.

A margin of +/-m\$5 for workers and +/-m\$25 for employees was established for the monetary categories, generating what this thesis names wage bands, which are analysed in the construction phase. They were gross incomes, as workers were asked to write down “the total amount of money received from the employer or firm, without deducting the legal discounts that could be made”.⁶⁰³ Only what the head of household earned had to be considered because individuals were told not to specify any other monetary contribution. Intermediaries were asked to allocate 200 booklets and questionnaires per wage category

⁶⁰¹ *BIDNT*, ‘Reglas’, p. 3550, author’s translation.

⁶⁰² The term sub-index was not used by the DE; it is used here in the same way as in Chapter IV.

⁶⁰³ *BIDNT*, ‘Costo de la vida. Instrucciones para realizar la investigación del costo de la vida de la población obrera de la Capital Federal’, 15:164, 1933, p. 3581, author’s translation.

covering all family structures. Booklets should be handed out to an employee or worker that knew how to read and write and “seemed reliable”.⁶⁰⁴ Workers were defined as those who do “predominantly manual jobs, are dependent on an employer or a firm, and are remunerated for periods of less than one month”.⁶⁰⁵ Employees were “commerce or industry assistants that carry out mainly intellectual activities, are dependent on an employer or a firm, and are remunerated on a monthly basis”.⁶⁰⁶

Respondents should “report all daily purchases, indicating the items bought and the amount paid”.⁶⁰⁷ Blank booklets were handed out, giving respondents the margin to record all their purchases. Households would obtain a booklet or notebook to register all their daily spending on food, housing, transport, schooling and entertainment. They would also receive a questionnaire to record their expenditure on clothing and long-term household goods. Daily expenditure was surveyed throughout October, while medium to long-term spending was measured for double that time.

The launch of the 1933 CLI. What the official publication describes

In April 1935 the DNT released the 1933 CLI. In the prologue of the 1935 DNT report, the Interior Minister, Leopoldo Melo, stated that following the recommendations of the second ICLS, the index was based on “a typical family budget, determined through the research of the average expenditure of a number of families” – a statement that is questioned in this chapter. The CLI “was established successfully and it can be compared with other indices published by the ILO”.⁶⁰⁸

How the 1933 index was estimated was explained in four paragraphs. Unlike in the Rules and Instructions described above, seven types of families were surveyed, ranging from couples without children to those with six children, considering all options. Throughout October 1933, families were asked to record the daily amount of money spent on goods and services. Using an official price list, the DE then estimated the quantities consumed. Budget compositions were established for each combination of the monetary and demographic conditions. Only families with children under the age of 14 were chosen. Following the recommendations of the PCNE, prices were collected and published monthly by the DNT.

⁶⁰⁴ Ibid., p. 3580, author’s translation.

⁶⁰⁵ Ibid., p. 3575, author’s translation.

⁶⁰⁶ Ibid., p. 3577, author’s translation.

⁶⁰⁷ Ibid., p. 3582, author’s translation.

⁶⁰⁸ DNT, ‘Costo de la Vida. Presupuestos familiares. Precios de artículos de primera necesidad. Índices del costo de la vida,’ *Investigaciones Especiales. Serie C*, 1, 1935, Buenos Aires, p. 4, author’s translation.

The last section of the report mainly consisted of charts. The relevant synthesis tables depicted the *presupuesto teórico* (theoretical budget) of a worker’s family formed by a couple and three children under the age of 14, whose head of household earned m\$120 a month, and lived solely on that income. The components of the budget were food, housing, rent, general expenditure and clothing. It was based on the average of four cases that declared equilibrium between income and expenditure. The *presupuesto teórico* was not an ideal budget; rather, “it was a rational and mathematical instrument that studied the actual variations” of the CLI.⁶⁰⁹ After the synthesis tables, the raw data of 308 family budgets was presented, grouped by monetary and demographic conditions.

The three DNT pieces shed light on the methodology of the 1933 CLI, particularly on the October 1933 budget survey. Similarities and differences arise between them, as shown in Figure 15.

Figure 15: Similarities and differences between the Rules, Instructions and the 1935 DNT report

	Rules	Instructions	1935 DNT report
Number of booklets to be distributed	6,000	6,000	<u>No information</u> . Raw data for 308 budgets
Monetary condition	Workers wage: m\$120, m\$140, m\$175, m\$200 and m\$230. Employees wage: m\$250, m\$300, m\$350, m\$400, and m\$500. No information of how categories were determined	Workers wage: m\$120, m\$140, m\$175, m\$200 and m\$230. Employees wage: m\$250, m\$300, m\$350, m\$400, and m\$500. No information of how categories were determined. <u>Definition of worker and employee</u>	Workers wage: m\$120, m\$140, m\$175, m\$200 and m\$230. Employees wage: m\$250, m\$300, m\$350, m\$400, and m\$500. No information of how categories were determined
Demographic condition	Households comprised of just a couple, and couple and two, four and six children	Households comprised of just a couple, and couple and two, four and six children	Households of just a the couple, up to one formed by a couple and six children, <u>considering all possible combinations</u>
What to register	Value and <u>quantities</u> of goods purchased	Value of goods purchased	Value of goods purchased
Type of goods registered	Daily and medium/long-term expenditure	Daily and medium/long-term expenditure	<u>Daily expenditure</u> , but information on clothing
Groups of goods	Food, household goods, housing services, clothing, and <u>furnishing</u>	Food, housing, transport, schooling, entertainment (daily expenditures). Clothing and <u>long-term household goods</u> (medium/long term)	Food, housing, rent, general expenditure, and clothing
Who distributed the surveys?	1/3 DNT labour inspectors, 1/3 labour unions, 1/3 firms	1/3 DNT labour inspectors, 1/3 labour unions, 1/3 firms	1/3 DNT labour inspectors, 1/3 labour unions, 1/3 firms

Note: The main differences between the articles in each category are underlined.

Source: author’s elaboration.

⁶⁰⁹ Ibid., pp. 22-3, author’s translation.

The Rules and Instructions stated that 6,000 booklets were to be distributed; information omitted in the 1935 report, as Figure 15 highlights. Regarding the value of the wage bands, there was agreement across the publications. On the other hand, the demographic characteristics of the households differed. This is particularly important as the *presupuesto teórico* referred to a household that *a priori* was not surveyed. The Instructions and the 1935 DNT report stated that respondents should register the value of the goods purchased, while the Rules mentioned the quantities. The Instructions showed the intention to gather very detailed information, but the 308 budgets only had data on daily purchases.

The comparison between the three official articles highlights the differences and similarities between the intentions and expectations – the Rules and Instructions – and the research actually carried out – the 1935 DNT report.

Figuerola's insight. The explanations of the man behind the CLI

In 1935 Figuerola published the article ‘How to Research the Cost of Living?’ in the journal of the School of Economic Sciences of the University of Buenos Aires, one of the most prestigious in the country at that time. The article provided a lot of detail on the way the 1933 CLI was developed, which was not found on the 1935 DNT report. The two were released almost in parallel. Thus, Figuerola’s article is conceived here as supplementary to the official publication. In 1942, while he was still head of the DE, Figuerola released a book called *Theory and Methods of Labour Statistics*. Compared to the 1935 DNT report, both publications explained, in more detail and with an academic tone, how the 1933 CLI was estimated. They had CLI data and were released together with or after the 1935 DNT publication. Thus, what the articles asserted was what actually happened, putting these publications on a different level than the *BIDNT* pieces.

The 1935 article

Figuerola claimed that to measure the cost of living, the most exact and simple index “is the one obtained by applying the price variations to the components of the family budget”.⁶¹⁰ He highlighted, without providing examples, that many countries aimed at elaborating CLIs based only on the prices of some basic need goods to make up for the absence of data, “which

⁶¹⁰ J. Figuerola, ‘¿Cómo se investiga el costo de la vida?’, *RCE*, 23:163, 1935, pp. 115-6, author’s translation.

can only be obtained carrying out an ample survey, throughout a *long period of time*, and a detailed study of the living conditions of a *large number of families*".⁶¹¹

To determine the *presupuesto teórico* there was a rigorous selection of cases, following the monetary and demographic categories, emphasising children under the age of 14. Cases that did not comply with these criteria "were eliminated from the sample to have the highest homogeneity within the results".⁶¹² Figuerola did not explain the need to consider only the families with children under the age of 14. On top of the demographic and monetary conditions, he mentioned two other important conditions that the budgets had to comply with: families should live in the City of Buenos Aires and households should not have any members other than the ones stated. The former requirement is named here the geographical condition and the latter, the general trait of the households.

Figuerola thought it convenient to base the CLI on the lowest budget, since it gathered all the goods in very low quantities, providing it with "greater perceptibility relative to the other budgets, given that the less amount received monthly, the greater intensity of the repercussions of price changes".⁶¹³ This explains why the m\$120 wage was chosen as the monetary condition of the *presupuesto teórico* – a value that will be questioned in the construction phase. Why was it not the average wage? For Figuerola, the study of the average expenditure budget would have "exclude[d] from the investigation the study of the situation of families with the lowest income".⁶¹⁴ He wanted, then, to understand the situation of the poorest families.

After collecting the surveys, budgets were categorised according to the monetary and the demographic conditions to determine "the average needs and the amount of money needed to satisfy them, [to] study which are the most representative types of families, proving that workers' households are generally comprised of a couple and three children".⁶¹⁵ After this analysis, the *presupuesto teórico* was established. This was the last step of the process – a product of thorough examination. It was designed considering all the available data, and not just using the information related to households of specific characteristics. The implication behind this procedure was that, from the demographic perspective, the *presupuesto teórico* was conceived as representative of the situation in the City of Buenos Aires.

⁶¹¹ Ibid., p. 116, author's translation and italics.

⁶¹² Ibid., p. 119, author's translation.

⁶¹³ Ibid., p. 135, author's translation.

⁶¹⁴ Ibid., p. 120, author's translation.

⁶¹⁵ Ibid., p. 126, author's translation.

Slightly contradicting the 1935 DNT publication, Figuerola stated that in October 1933 the department started compiling a price list with information from different types of markets and stores in working class neighbourhoods. The monthly price was an average of the data registered for a certain good or service in one month. The main assumption was that the “goods purchased each month are the same in terms of quantities and quality”.⁶¹⁶

A *presupuesto teórico*, according to Figuerola, is elaborated when the information gathered is only partial or when it refers solely to theoretical data, and the weights are not established empirically, which was a similar definition to the ILO’s.⁶¹⁷ Even if grounded on information regarding the actual situation of households, in the 1933 budget “the clothing expenditure data was gathered for just a month”. As the clothing sub-index did not reflect reality, the budget rightly received the name of *presupuesto teórico*.

The 1942 book

Figuerola’s book on socio-labour statistics examined many topics that he had been working on as head of the DE. It was a synthesis of his work in that statistical unit, in his transition to becoming a government economist. The book was published just before the DNT became the Labour and Social Welfare Secretariat (*Secretaría de Trabajo y Previsión*, STyP) in 1943. Many of the concepts and ideas that Figuerola highlighted in 1942 were the same as in 1935. Given that this source is a book, Figuerola had even more room than in the 1935 article to discuss methodological and theoretical matters, emphasising the need to generate reliable statements from the families surveyed and what measures departments should take to achieve them. He highlighted the confidence that the departments should impart in respondents and introduced the third ICLS as an antecedent of the 1933 CLI.⁶¹⁸

Figuerola reproduced the same chart published in the Instructions, replicated above as Figure 14, without quoting the previous source. Nonetheless, there was a difference, as Figure 16 demonstrates.

⁶¹⁶ Ibid., p. 123, author’s translation.

⁶¹⁷ ILO, ‘The Second International’, p. 70.

⁶¹⁸ J. Figuerola, *Teoría y métodos de estadística del trabajo*, Buenos Aires, 1942, p. 277.

Figure 16: How booklets were distributed, 1933 budget survey

Family structure	Monthly income										Total cases to be surveyed
	Workers					Employees					
	120	140	175	200	230	250	300	350	400	500	
Couple	150	150	150	150	150	150	150	150	150	150	1,500
Couple and 1-2 children	150	150	150	150	150	150	150	150	150	150	1,500
Couple and 3-4 children	150	150	150	150	150	150	150	150	150	150	1,500
Couple and 5-6 children	150	150	150	150	150	150	150	150	150	150	1,500
Number of cases	600	600	600	600	600	600	600	600	600	600	6,000

Source: Figuerola, *Teoría*, p. 273.

Instead of having 150 cases per wage category for a couple with two children, Figure 16 shows that 150 cases per wage category were gathered for a household with one or two children. Comparing Figures 14 and 16, the only family structure category that remained the same was that of a couple without children. The contrast shows the discrepancy between intentions and results.

Figuerola claimed that “to be complete and totally comparable, the information should refer to a whole year”.⁶¹⁹ If research was only carried out for a couple of weeks or months, he argued that only daily expenditure should be surveyed, which followed, as mentioned later on, ICLS guidelines. Figuerola stated that in the 1933 survey there was no clothing information because research was only carried out for a month. The value given to the clothing component in the CLI was “meagre and insufficient”,⁶²⁰ contradicting his 1935 article. However, his 1942 argument is interpreted here as a justification of why, if information existed, he omitted the clothing data from the 308 budgets of the 1935 DNT report.

Table 22 of the book showed examples of surveys performed in different countries, their duration, and the number of cases consulted. According to Figuerola, the 1933 survey focused only on food and had 3,020 “satisfactory responses” relative to the 6,000 booklets initially distributed.⁶²¹ Just mentioning the food component was probably to avoid the contradiction with previous statements regarding the fact that the survey only had daily expenditure.

For Figuerola, ideally, the family expenditure should be recorded in both quantity and value. In the 1933 survey, listing quantities was optional. He stated, without providing evidence, that in the case of families with very low income “there is rarely a purchase of

⁶¹⁹ Ibid., p. 274, author’s translation.

⁶²⁰ Ibid., p. 327, author’s translation.

⁶²¹ Ibid., p. 279, author’s translation.

consumption goods in full units. Even though the value of the purchase is known, buyers generally ignore the quantity in weight or measure that such value represents”.⁶²²

Figuerola argued that the distribution of blank booklets “is preferred to a booklet that has a pre-established list, because the expenditure recorded is more spontaneous and has greater accuracy”, giving “the highest guarantees because they do not condition the recording [of data]”.⁶²³ Thus, the list of items of the food sub-index of the 1933 CLI was not arbitrary; it was based on the declarations of the different families.

*Information from the 1937 DNT report*⁶²⁴

In the 1933 survey the limits of the wage bands were adopted because “it was understood, *without any previous research and by the mere observation of the environment*, that in the City of Buenos Aires with less than m\$120 it is not possible to satisfy the pressing needs of a family, and with more than m\$500 a distressing situation that should be urgently studied and made manifest is no longer noticeable”.⁶²⁵ To determine the demographic condition of the *presupuesto teórico*, there was a “successive elimination of statements within each family group consulted. That is, it was based on the choice of a number of cases whose characteristics are included in the statements that were more representative and better answered by workers”.⁶²⁶ The 1937 DNT report clarified that the budgets published in 1935 had no clothing component. The value m\$6.36 established for it was “the quantity available for that end in the 1933 budget”.⁶²⁷

Constructing the 1933 CLI

Context, uses, contemporary reception and meaning of the 1933 CLI

To begin the construction of the 1933 CLI, it is worth analysing, following Scott, the context, uses, contemporary reception and meaning of the indicator by digging deeper into the articles previously described.

⁶²² Ibid., p. 283, author’s translation.

⁶²³ Ibid., p. 271, author’s translation.

⁶²⁴ For this thesis’ purposes, reference to this report is only for clarification of the 1933 CLI. With the information gathered from the 1935 annual complementary survey, there was a revision of the value of rent and clothing components of the *presupuesto teórico*.

⁶²⁵ DNT, ‘Condiciones de vida de la familia obrera’, *Investigaciones Especiales. Serie C*, 8, 1937, p. 14, author’s translation and italics.

⁶²⁶ Ibid., p. 13-4, author’s translation.

⁶²⁷ Ibid., p. 36, author’s translation.

Context, uses and reception

Towards the end of the nineteenth century in the US and in Western Europe, industrialisation and urbanisation presented new informational challenges that had an effect on national statistical systems.⁶²⁸ From the end of the 1920s through the Great Depression, the DE began to realise the potential wages had to absorb local production in a context of industrial growth and urbanisation. The “imperative need” to “quickly reach the knowledge of economic and social facts” to solve the problems between capital and labour was embodied in the October 1934 decree that reorganised the DE’s tasks,⁶²⁹ another piece in Justo’s normalisation of the statistical system, as Chapter III explained. That year, Figuerola, a labour matters expert, was hired officially as the DE’s head. The project’s rationale was outlined by Melo in the prologue of the 1935 DNT report, where he claimed that “social justice is highly dependent on the good understanding” of the relations between workers and employers and the living conditions of the former.⁶³⁰ As the agricultural export model view still predominated, this required the building of a new image of the nation where, as Hacking and Curtis describe,⁶³¹ its key protagonist, the working class, needed to be made. The collection of socio-labour statistics was crucial in this process, particularly due to the irregularity of population censuses. With the 1932 and 1934 decrees, the statistical making up of the working class became a state matter, which implied that its recognition was central to Argentine society. Consequently, as Hacking and González Bollo argue, this production of knowledge facilitated the social control of that sub-population,⁶³² which could be understood as the first step to establishing evidence-based policy to encourage or enforce certain behaviours. This need for socio-labour statistics cemented the DE’s positive years in its U-shaped trajectory. While shifting away from the liberal matrix of economic and political thought, in Argentina the 1930s were decisive in the development of economics as a state science and in the advancement of economists as a state elite. The fraudulent and restrictive political conditions that prevailed after the 1932 presidential election contributed to this process.⁶³³ As economists and statisticians feed on each other, it is understood here that these changes also influenced the socio-labour statistics boom and contributed to the persistence of the CLI. This process mimicked the international trend depicted by Tooze, as explained in Chapter II.

⁶²⁸ Prévost and Beaud, *Statistics*, p. 67.

⁶²⁹ *BIDNT*, ‘Estadística. Decreto N°50720’, p. 4032, author’s translation.

⁶³⁰ DNT, ‘Costo’, p. 3, author’s translation.

⁶³¹ Hacking, *The Taming*; Curtis, *The Politics*.

⁶³² González Bollo, ‘La estadística pública’, p. 245.

⁶³³ Caravaca and Plotkin, ‘Crisis’, p. 424.

The release of the 308 budgets can be interpreted as a way to show the neutrality and objectivity of statistics, despite the lack of methodological explanation of the 1933 CLI. Melo highlighted that all acts of government must have a justification and must be based on the knowledge of facts. The 1934 decree conceived of statistics as a neutral and objective descriptor of reality, as did well-known contemporary statisticians. Argentino Acerboni,⁶³⁴ for example, argued that data collection should be impartial and that the mathematical methods used should be explained.⁶³⁵ Along these lines, Figuerola defined socio-labour statistics as those that allow an analysis of the standard of living of social groups and the CLI as a mathematical tool. Necessities must be studied as they appear and observation of the social milieu must be impartial and direct to generate an “honest presentation of the truth”.⁶³⁶ He also argued that statistics are correct and reveal the truth, but are not necessarily explicit.⁶³⁷

Corroborating the existing literature, the notion of social justice in Melo’s prologue suggests the ILO’s increasing influence, as part of the new era, particularly with respect to labour matters,⁶³⁸ that started with the overthrow of Yrigoyen by Uriburu in 1930.⁶³⁹ This was fostered by the appointment in 1931 of Migone as the first official Argentine ILO correspondent, replacing the unofficial Lawford Childs. From the beginning of Migone’s ILO placement, Figuerola and he established a close relationship,⁶⁴⁰ as is explained later on. According to González Bollo, Figuerola encouraged the 1934 decree that gave autonomy to the DE because he believed that the division’s research topics were outdated. This chapter suggests that such a diagnosis related to Figuerola’s acquaintance with Migone and his previous knowledge of the ILO’s work, as the DNT argued that the 1934 reshuffle followed the developments in the methods of study of the labour world. The increasing significance of the ILO enhances the idea of the importance gained by the working class for the Argentine government.

Figuerola’s awareness of the increasing relevance of the ILO and his acquaintance with the contents of its statistical conferences influenced his trajectory as head of the DE and

⁶³⁴ Acerboni, a statistics professor, held posts as a statistician in the province of Buenos Aires and in the national government. IASI, *Directory of Statistical Personnel in the Americas*, Washington DC, 1955, p. 13.

⁶³⁵ A.V. Acerboni, ‘El concepto moderno de la estadística’, *RCE*, 18:105, 1930, pp. 318-24.

⁶³⁶ Figuerola, *Teoría*, p. 270, author’s translation.

⁶³⁷ Figuerola, *El gran movimiento*, p. 60.

⁶³⁸ Ferreras, ‘La misión’, p. 169.

⁶³⁹ J.C. Yáñez Andrade, ‘La OIT y la red sudamericana de corresponsales. El caso de Moisés Poblete, 1922-1946’, in Herrera León and Herrera González, *América Latina y la OIT*, p. 34.

⁶⁴⁰ In a letter to John Nixon, the then head of the ILO’s Statistical Section, Figuerola referred to Migone as his “friend”, ILO, T 102/0/2, Letter from J. Figuerola to J. Nixon, 8 February 1936, author’s translation.

thus the history of the Argentine CLI. Consequently, his work after 1932 was a watershed in the history of the DE. Why? Unlike Bunge, Figuerola, a doctor of Law, was a Spanish native who needed to make an impression when he moved to Argentina. When in Europe, he established links with the ILO.⁶⁴¹ His experience as Secretary General of the Cataluña delegation of the Spanish Labour Ministry under Eduardo Aunós Pérez⁶⁴² during the dictatorship of Miguel Primo de Rivera provided him with knowledge of the labour world,⁶⁴³ political capital and legitimacy of having experienced a government position.⁶⁴⁴ When the dictatorship fell in 1930, with the help of Catalan politician Francisco Cambó, Figuerola was made a legal counsel for the Hispanic-American Electricity Company (CHADE, *Compañía Hispano Americana de Electricidad*) in Buenos Aires. He became the CHADE's representative in the DNT, and due to his "efficient and brilliant" performance, he was invited to join the department.⁶⁴⁵ As the DE was at the bottom of its U-shaped trajectory, it was a good opportunity to make an impression. In 1932 a decree put Figuerola in charge of the CLI and he conducted the unemployment census.⁶⁴⁶ Thus, he acted as a state statistician before being officially entrusted, in September 1934,⁶⁴⁷ with being head of the DE. Apart from his pre-existing knowledge, his link with ILO correspondent Migone played a decisive role in his DE career. Figuerola met Migone in April 1931 at the First National Congress of Labour in Buenos Aires.⁶⁴⁸ The Spaniard immediately started pursuing the relationship⁶⁴⁹ – preparing a dossier for Migone to send to the ILO as well as a report on Argentine social policy⁶⁵⁰ – because, as has been suggested, he knew the legitimacy a link with the

⁶⁴¹ Figuerola was not an official delegate to the first three ICLS or to any ILC, despite Eduardo Aunós Pérez's presence in 1925 and presidency in the 1929 ILC. However, Figuerola claimed to be acquainted with the work of Thomas and the ILO, ILO, C 2-2-1, *Le Correspondant de l'Argentine a Monsieur Albert Thomas, Directeur du BIT a Genève. Rapport N°1*, November 1931; ILO, CAT 5-8-4, Letter from J. Figuerola to A. Thomas, 11 March 1932; ILO, T 102/0/2, Letter from Figuerola to Nixon, 8 February 1936. In the literature, Figuerola has been incorrectly presented as an ILO delegate, J. Delgado, *Hispanoamérica en el siglo XX*, Madrid, 1992, p. 413.

⁶⁴² 'Comida íntima', *La Vanguardia*, 29 November 1927, p. 10. Like Aunós, he was a professor in the Barcelona Social School, see 'Escuela Social de Barcelona. Exámenes', *La Vanguardia*, 22 October 1929, p. 7.

⁶⁴³ Specifically, in the design of collective labour agreements, González Bollo, *La fábrica*, p. 207.

⁶⁴⁴ González Bollo, 'Estado', p. 14.

⁶⁴⁵ Delgado, *Hispanoamérica*, p. 413.

⁶⁴⁶ DNT, *La desocupación en la Argentina, 1932. Informe del Jefe del Censo Nacional de Desocupados*, Dr. José Figuerola, Buenos Aires, 1933.

⁶⁴⁷ *BIDNT*, 'Organismos del trabajo', 26:177-178, 1934, p. 4035.

⁶⁴⁸ ILO, C 2-2-1, *Le Correspondant de l'Argentine*.

⁶⁴⁹ Figuerola was also related to other ILO members as he corresponded with Nixon, ILO, Statistics, T 102/0/2, Letter from J. Nixon to J. Figuerola, 2 February 1935; ILO, Statistics, T 102/0/2, Letter from Figuerola to Nixon, 8 February 1936.

⁶⁵⁰ ILO, CAT 5-8-3, Letter from R. Migone to A. Thomas, 12 January 1932; ILO, Cabinet Albert Thomas, CAT 5-8-6, Letter from R. Migone to A. Thomas, 12 February 1932.

organisation provided him.⁶⁵¹ After Thomas' loose proposal to create an ILO branch in Argentina,⁶⁵² Figuerola and Migone designed and submitted an outline that contained a description of tasks and costs with Migone as Director and Figuerola as Secretary. An auxiliary would prepare information on wages, cost of living and family budgets plus other macroeconomic variables.⁶⁵³ The plan was outlined before the CLI became an executive project. Figuerola was aware of the DE's lack of data as the proposal focused on numbers not gathered by it. His efforts paid off because, according to Migone, it was thanks to his negotiation with his friend and then DNT President, Eduardo Bullrich, that Figuerola was offered the leadership of the DE in April 1932,⁶⁵⁴ months before the CLI decree. This confirms that Figuerola was in charge of the index from the start, acting as a state statistician – following Prévost and Beaud's taxonomy explained in Chapter II⁶⁵⁵ – before being named officially. Unlike Bunge, Figuerola's recognition arose from his bureaucratic activities. With the 1934 re-statement of the DE's tasks, Figuerola aimed at not only describing through figures, but also analysing dynamic processes and interpreting them.

Melo's foreword placed the CLI as a crucial tool in making up the working class. The 1933 CLI became a socio-labour statistic, estimated due to local social policy needs. Since its elaboration was required by a presidential ruling, the indicator once again became an official index. The six reports analysed here did not focus on index number methodology because they were not new to the statistical system. The emphasis instead was placed on budget surveys, as the October 1933 enquiry was the first detailed one. That survey, according to Figuerola, was more than research on the cost of living. It was an examination of workers' families to determine "the quantities needed to obtain a *sum of satisfactions or economic utilities*".⁶⁵⁶ Thus, the budget survey had multiple purposes, which explains the wide range of monetary and demographic conditions and the existence of notebooks and booklets, as the Instructions explained.

The 1932 decree entrusted the CLI's elaboration to the DE, whereas the DGEN had published the index before. Why the change? Since Bunge's period as head, the DE had

⁶⁵¹ Figuerola asked Thomas for permission to mention ILO members and publish a photo of the Geneva ILO office in his journal, *Revista de Derecho Social*, see ILO, CAT 5-8-6, Letter from J. Figuerola to A. Thomas, 12 February 1932. Together with Migone, Figuerola lobbied for a DNT subsidy, which required Congress intervention, for the *Revista* to publish ILO data for free, see ILO, CAT 5-8-4, Letter from R. Migone to A. Thomas, 22 April 1932.

⁶⁵² ILO, C 2202/2, Letter from A. Thomas to R. Migone, 23 February 1931.

⁶⁵³ ILO, CAT 5-8-4, Letter from R. Migone to A. Thomas, 11 March 1932.

⁶⁵⁴ ILO, CAT 5-8-4, Letter from Migone to Thomas, 22 April 1932.

⁶⁵⁵ Prévost and Beaud, *Statistics*, p. 6.

⁶⁵⁶ Figuerola, 'Cómo se investiga', pp. 121-2, author's translation, original italics.

collected a wide range of data on the working class. Due to this trajectory and in the context of the making up of the working class, it was only natural that an instrument that traced its living conditions be elaborated by that agency, recalling the idea of the distinct uses of Bunge's CLI and the 1933 estimate. Moreover, when ILO director Thomas enquired about the existence of an Argentine index in 1928, he hinted that he preferred that the task be carried out by the DE,⁶⁵⁷ a wish Figuerola could not overlook.

The 1935 DNT report identified two predecessors of the 1933 CLI that took place in 1925: the second ICLS and the PCNE, which combined "the technical principles that allow international comparisons with knowledge of national patterns".⁶⁵⁸ As mentioned in Chapter IV, Unsain attended the third ICLS in 1926 and the conference's report reached Argentina in 1928. Given these facts, the proximity between the two international conferences and the interest Figuerola had in the ILO, this chapter suggests that the third statistical conference, quoted solely in Figuerola's book, was also an antecedent of the 1933 index. Its initial lack of mention related to the object of study in the 1935 DNT report and Figuerola's 1935 article: the CLI. In his book, Figuerola had more room to analyse family budgets and reference the third ICLS. The claim to have followed ICLS resolutions placed the 1933 CLI at a high standard, worthy of being compared to its international equivalents. The DE relied on the authority of the statistical conferences to validate its proceedings. Melo stated that, apart from the 1924 DGEN publication, there was no regular series with uniform data that determined a long-term estimate. He alleged that, with the 1933 CLI, the vacuum had ceased to exist. However, there was disregard for Bunge's work, effectively undermining it. The splice with Bunge's estimate was published by the DNT, but attributed to the ILO.⁶⁵⁹ Why the lack of recognition? Figuerola defined himself as a disciple of Bunge,⁶⁶⁰ indicating his awareness of Bunge's work. But, as explained earlier, he condemned estimates that were mainly based on price data, like the comprehensive price index. He did not see them as appropriate CLIs. The existence of a sombre period was also a factor, together with the ILO's lack of endorsement of Bunge's indicator. Yet, the 1933 CLI cannot be understood without recalling the DE's previous work. As such, the index had another, unrecognised, antecedent: the DE's expenditure surveys. The link between these enquiries and Bunge and the distrust of the DE

⁶⁵⁷ González Bollo, 'La estadística pública', pp. 180-1.

⁶⁵⁸ DNT, 'Costo', p. 4, author's translation.

⁶⁵⁹ DNT, 'Condiciones', p. 19.

⁶⁶⁰ REA, 'Oraciones', p. 297.

numbers led to their lack of mention as forerunners.⁶⁶¹ The 1932 decree, the reference to international antecedents, the little importance given to previous estimates, and the assertion that the work carried out by the DNT was successful sent the message that the 1933 index was something new and, if anything, a greatly improved version of its predecessor. Indeed, its complexity shows that it was a step forward relative to the comprehensive price index. As such, the 1933 index is here named the first Argentine CLI.

In December 1934, before the 1935 DNT report was released, the DE published a resolution to carry out a yearlong budget survey.⁶⁶² The next labour survey was conducted in 1943, suggesting that there was no plan to carry out these enquiries on a regular basis as had happened under Bunge, and that the 1935 survey was an exception rather than the rule. This indicates that Figuerola believed that the 1933 results were not up to his expectations and/or he encountered faults in them, or simply was not satisfied with/convinced by them and wanted to amend the estimates. Most importantly, there was a need to have data on long-term expenditure that, mainly for reasons of seasonality, could not be gathered in a monthly study. This suggests that, after the index's 'soft-launch' in October 1934,⁶⁶³ critiques arose – an idea that is also supported by the more detailed methodological explanation of the 1933 CLI in the 1937 DNT report. Apart from his previous knowledge, it appears that learning-by-doing encouraged Figuerola to make another survey.

The CLI was conceived as a tool to design social policy, as it was the main proxy of purchasing power. Why? The 1932 decree aimed to determine cost of living and wage statistics, but the latter were not gathered as systematically as the former. Following Halbwegs, the CLI aimed at studying the purchasing power of wages and its variations in time, explaining why the 1933 survey was confined to workers and employees. However, the CLI was not the standard of living to which different social groups can aspire to. For the General Confederation of Labour (*Confederación General del Trabajo*, CGT), as an “instrument to measure poverty”,⁶⁶⁴ the index shaped the objective judgments needed to legislate. Figuerola defined it as “a relative number that shows the intensity of the fluctuations, affecting the funds of the working class family”.⁶⁶⁵ The CLI allowed civil court

⁶⁶¹ Even in the 1960s, Figuerola said that the DE had been gathering meticulous information on family budgets and prices between 1936 and 1939, without mentioning previous efforts. C. Fayt, *La naturaleza del Peronismo*, Buenos Aires, 1967, p. 95.

⁶⁶² *BIDNT*, ‘Costo de la vida. Resolución de 10 de diciembre de 1934, estableciendo que se realice una investigación complementaria durante todo el año 1935’, 17:180, 1935.

⁶⁶³ *BIDNT*, ‘Costo de la vida’, 16:177-178, 1934.

⁶⁶⁴ ‘La carestía de la vida en la Capital Federal’, *CGT*, 16 November 1934, p. 3, author’s translation.

⁶⁶⁵ Figuerola, *Teoría*, p. 265, author’s translation, also pp. 267-8.

judges to implement index-linked severance pay in 1934.⁶⁶⁶ The following year, seamstresses and tailors of the Garment Workers Federation (*Federación Obrera del Vestido*) used the CLI to update their wages.⁶⁶⁷ Bakers and masons aimed to “demonstrate the justice of their [wage] claims” with it.⁶⁶⁸ In 1935 the CGT used it to validate its strike decisions.⁶⁶⁹ In the wake of the 1937/8 economic contraction, the CGT used the index to justify the need to improve the workers’ situation based on the decline of the purchasing power of the m\$120 wage.⁶⁷⁰ In mid-1937, the CGT presented its own explanation for the rise of consumer goods prices, mixing the rationality of figures with common sense.⁶⁷¹ The 1933 and 1935 budget surveys were used to prepare a report on the Argentine housing situation for the First Pan-American Housing Conference, held in Buenos Aires in October 1939.⁶⁷² The CLI was applied in the ruling sanctioned by the Interior Ministry that ended the strike of construction workers in 1941.⁶⁷³ In early 1942 manufacturers in the metal sector compared the 13% CLI rise to the 19.5% increase in wages they had given workers to de-legitimise the claim for a wage update.⁶⁷⁴ Influenced by Bunge,⁶⁷⁵ in March 1943 a scheme was designed by Figuerola to adapt wages to the fluctuations in the CLI.⁶⁷⁶ This indexation attempt was the first that aimed to depoliticise the decision to alter wages. These uses show statistics’ ability to contribute towards conflict resolution, as Starr suggests.⁶⁷⁷

The 1933 CLI had to overcome the existing doubts regarding DE numbers and the distrust of Bunge’s index – a distrust that helps explain the lack of reference to the comprehensive price index. By contrast, the CGT endorsed the 1933 CLI from the start, stating that the work was carried out “without preconceptions and following a rigorous and predetermined method”. The survey was “thorough” and the results were “objective”.⁶⁷⁸ The CGT believed that the budget survey “scientifically proved” workers’ needs.⁶⁷⁹ However, there were still criticisms. Migone’s reports to the ILO claimed that the index was criticised

⁶⁶⁶ González Bollo, *La fábrica*, p. 173.

⁶⁶⁷ ‘Mitin contra la carestía de la vida y la reacción’, *CGT*, 18 October 1935, p. 4.

⁶⁶⁸ Daniel, ‘L’objetivation’, p. 193, author’s translation.

⁶⁶⁹ ‘Contra la carestía de la vida la reducción de la jornada’, *CGT*, 18 October 1935, p. 1.

⁶⁷⁰ ‘Una realidad sombría’, *CGT*, 17 September 1937, p. 1; ‘El insoluble déficit del hogar proletario’, *CGT*, 1 October 1937, p. 1.

⁶⁷¹ Daniel, ‘L’objetivation’, p. 193.

⁶⁷² Elena, *Dignifying*, p. 54.

⁶⁷³ González Bollo, ‘La estadística pública’, p. 242.

⁶⁷⁴ Daniel, ‘L’objetivation’, p. 193.

⁶⁷⁵ A.E. Bunge, *¿Por qué esperar?*, Buenos Aires, 1937, pp. 60-9.

⁶⁷⁶ The June *coup d’état* disrupted the process to put in place this mechanism. DNT, *Adaptación*.

⁶⁷⁷ Starr, ‘The Sociology’, p. 20.

⁶⁷⁸ ‘Algo enseña’, *CGT*, p. 4, author’s translation.

⁶⁷⁹ ‘El salario mínimo y el costo de la vida’, *CGT*, 4 January 1935, p. 1, author’s translation.

by newspapers from all tendencies.⁶⁸⁰ For example, he mentioned that the Socialist newspaper, *La Vanguardia*, questioned its evolution and methodology early on, saying that despite what the number claimed, the cost of living had not declined between 1933 and 1935.⁶⁸¹ The Federation of Commercial Employees (*Federación de Empleados de Comercio*) conducted its own price research because they distrusted government figures.⁶⁸² A review of Figuerola's 1935 article and the 1935 DNT report compared the official results with the figures obtained by the Railway Union (*Unión Ferroviaria*). It questioned the value of the monetary condition of the *presupuesto teórico* and the exclusion of certain goods. However, it claimed that the DE's publication would encourage analysis and future research.⁶⁸³ A study from a magazine related to the financial and industrial sectors asserted that the lack of consideration of several goods led to a superficial index that, translated into laws, could become "disastrous for humble households".⁶⁸⁴ The periodical also highlighted that the CLI referred solely to urban workers.⁶⁸⁵ This chapter argues that because detailed specifications about the monetary and demographic conditions of the budget and its components were provided in the 1935 DNT report, the 1933 CLI was subject to methodological critiques that influenced Figuerola's behaviour. Distrust in its predecessor, however, related to the use of index numbers. The different positions that existed as soon as the index was launched show, following Daniel,⁶⁸⁶ that there was no consensus behind the objectification of the cost of living. The DE needed social power to establish a valid method, and so, it would seem, Figuerola encouraged the complementary yearlong survey to reinforce its position. Yet, notwithstanding Figuerola's claim that the tasks of the DE "still remain hidden and consequently almost ignored",⁶⁸⁷ it is clear that the 1933 CLI was used and criticised, suggesting that it inspired greater trust and was more widely disseminated than its predecessor.

As Migone swiftly sent the 1935 DNT report in February 1935,⁶⁸⁸ the ILO was able to publish the 1933 CLI in the May 1935 issue of the *ILR*. In 1936 the *ILR* highlighted that it was not convinced of certain methodological aspects of it: that it only considered families

⁶⁸⁰ ILO, C 2-2-1, Report from the Argentine Correspondent Aug-Dec 1935.

⁶⁸¹ ILO, C 2-2-1, Report from the Argentine Correspondent Jan-Mar 1935; ILO, Report Aug-Dec 1935.

⁶⁸² Daniel, 'L'objectivation', pp. 184-5.

⁶⁸³ J.D. Mestorino, 'Información bibliográfica. Costo de la vida', *Revista de Ciencias Económicas*, 23:166, 1935, pp. 512-7.

⁶⁸⁴ 'Estadística equivocada', *Véritas*, 15 December 1936, p. 25, author's translation.

⁶⁸⁵ 'El costo de la vida y los gastos de las explotaciones agrícolas', *Véritas*, 15 November 1935, p. 8.

⁶⁸⁶ Daniel, 'L'objectivation', p. 186.

⁶⁸⁷ ILO, Statistics, T 102/0/2, Letter from Figuerola to Nixon, 8 February 1936, author's translation.

⁶⁸⁸ ILO, Statistics, T 102/0/2, Letter from Nixon to Figuerola, 2 February 1935.

living on one wage, and it was hard to make international comparisons with the Argentine data.⁶⁸⁹ The BLS commented on the 1935 DNT report a few months after it was released.⁶⁹⁰ The 1937 DNT piece with the results of the complementary survey was also published in the BLS journal.⁶⁹¹ The IASI quoted reports released in the mid-1940s that compiled the 1933 index,⁶⁹² but not the articles analysed here. In the early publications of the IASI, Figuerola was not referenced as one of Argentina's well-known statisticians.⁶⁹³ This information suggests that the 1933 CLI's recognition and approval surged from organisations linked to socio-labour statistics, partly because Figuerola, unlike Bunge, had an interest in being acknowledged by them. This must be understood in the wider context of the change in the relationship between Argentina and the ILO, Figuerola's aim to legitimise himself and his work, and the importance he placed on the ILO.

Meanings and implications

The 1937 DNT publication stated that during the 1935 complementary survey there was “*still* resistance to providing information” in a field like social statistics, which “requires respondents' sincere and effective support”.⁶⁹⁴ The word *still* suggests that the DE faced the problem in 1933 as well. It is inferred here that such hostility was inherited from when Bunge was head of the DE, as mentioned in Chapter IV. It related to the lack of a procedure to raise awareness of the scheme before the enquiries. The 1937 DNT report claimed that “if those in charge of orienting general opinions contemplate this need [of sincere and effective support from respondents] and convinced about it help allay the fears and suspicions, which so far economic and social information has tended to raise, the country should thank them for their invaluable service to help clarify the true situation”.⁶⁹⁵ This suggests that the DE believed distrust was not its fault.

As explained in the de-construction phase, in the design of the 1933 survey, two types of expenditure were distinguished: the daily/regular and the medium/long-term spending. This is evidence that the DNT was aware that a month-long survey would impact on the results of the types of expenditure. Moreover, this fosters the idea that the information about

⁶⁸⁹ *ILR*, ‘Recent Family Budget Enquiries: Recent Family Budget Enquiries in Latin America’, 33:2, 1936, p. 276.

⁶⁹⁰ BLS, ‘Publications Relating to Labor’, *Monthly Labor Review*, 41:3, 1935, p. 850.

⁶⁹¹ BLS, ‘Recent Publications of Labour Interest’, *Monthly Labor Review*, 45:5, 1937, p. 1287.

⁶⁹² IASI, *Bibliography*, p. 89; IASI, *Costo*, p. 5.

⁶⁹³ IASI, *Statistical*, pp. 679-84. In 1955, however, he was mentioned, IASI, *Directory*, p. 19.

⁶⁹⁴ DNT, ‘Condiciones’, p. 13, author's translation and italics.

⁶⁹⁵ *Ibid.*, p. 13, author's translation.

medium/long-term spending gathered in 1933 was an unsuccessful procedure, if carried out at all.

The plan to use different intermediaries when distributing surveys suggests that the DE reached out to different sectors for help. It also implies that the division was trying to disseminate its work through diverse channels, hoping it would contribute to the legitimacy of the CLI and its other output. Intermediaries were advised to hand out the surveys to those individuals that seemed reliable and knew how to read and write.⁶⁹⁶ The literacy prerequisite, not as powerful for employees, given that they performed administrative tasks, could have biased the sample. As for the reliability requirement, individuals' ideas of what makes a person reliable vary, introducing another bias. All this suggests that intermediaries had a margin to distribute the booklets following their own criteria as random sampling was not a developed technique, so it was not implemented in the 1933 survey,⁶⁹⁷ thereby casting doubts on the sampling decisions and results.

Some of the details included in the Rules and in the Instructions were not mentioned in either of Figuerola's pieces. The *BIDNT* articles were generally not referenced, which casts doubt on the extent to which those Rules and Instructions were used, fostering the impression of a mismatch of expectations and results that was highlighted earlier. For example, given that the 1935 DNT report did not even distinguish between booklets and questionnaires, there was a clear discrepancy between the intentions and expectations and what was finally developed.

The DNT analysed a "significant number of budgets" before eliminating those that "did not fall within the pre-established characteristics".⁶⁹⁸ Figuerola stated that "rather than a larger number of cases what is needed is that the ones selected are representative of the general situation of the groups targeted in the survey".⁶⁹⁹ Thus, it is inferred that he did not aim for a large sample, despite highlighting the 3,020 surveys used in the enquiry, which was favourable when compared to other countries, as mentioned above. The selection of the most representative cases was a conscious decision. This supports Prévost and Beaud's idea of how the notion of typicality was widespread before probabilistic sampling existed.⁷⁰⁰ Moreover,

⁶⁹⁶ In 1930, 69% of the population had primary education and 22% had no education, Galiani and Gerchunoff, 'The Labor Market', p. 151.

⁶⁹⁷ The irregularity of population censuses, the basis to define the samples of surveys, was another obstacle to adopting random sampling.

⁶⁹⁸ Figuerola, 'Cómo se investiga', p. 123, author's translation.

⁶⁹⁹ Figuerola, *Teoría*, p. 272, author's translation.

⁷⁰⁰ Prévost and Beaud, *Statistics*, p. 160.

this acknowledged, but did not explain, a ‘narrowing down process’ from the 6,000 surveys to be distributed to the final 308 published cases, which will be explained below.

The *presupuesto teórico* was established using the preferences of four archetypical families formed by a couple and three children under the age of 14 who spent the whole m\$120 earned solely by the head of household. Unlike Bunge’s index, the characteristics of the household were straightforward. The monetary condition of the *presupuesto teórico* was the lowest wage of the sample, describing the subject of study that interested the DNT and the government: workers with scarce resources and in dire need. In 1937 the department clarified that m\$120 was not sufficient to obtain “the living standard required by the working class family [...] despite the misleading interpretations that existed when the [1935 DNT] report was released”.⁷⁰¹ This justification suggests that the monetary condition of the *presupuesto teórico* was criticised and that the wage did not satisfy all essential needs. As it was the cheapest budget possible grounded mainly on food and rent,⁷⁰² it was a basic items index, just like its predecessor. The survey, restricted to the preferences of individuals that lived in the City of Buenos Aires, became the basis for the CLI of Argentina as a whole, which was a similarity with the comprehensive price index. This contradicted the 1932 decree that sought to elaborate a geographically broader indicator, suggesting the inability of the national statistical system to provide a national measure as well as the difficulty the executive had in imposing statistical procedures as it conceived them. However, unlike Bunge’s index, much less emphasis was placed on the similarities of the fluctuations in the city and in the whole country.

As Hacking argues,⁷⁰³ statistics describe and help individuals perceive themselves. If the CLI was based on the lowest budget, it gave workers the notion that they were very poor and that they lived in a precarious situation. It also contributed to enhance the condition of those that were not the typical Argentine family. The index defined a worker’s family formed by a couple and three children under the age of 14 as a traditional nuclear family, implying that all others behaved or could behave like it. As Scott suggests, this idea of family “is naturalised in the course of presenting the data”.⁷⁰⁴ The actions of this working class family were seen as representative of average of Argentines, highlighting this sector’s relevance relative to the middle class. The notion of representativeness suggests the influence of

⁷⁰¹ DNT, ‘Condiciones’, p. 14, author’s translation.

⁷⁰² These two components comprised 82.5% of the m\$120 budget, DNT, ‘Costo’, p. 22.

⁷⁰³ Hacking, *The Taming*.

⁷⁰⁴ Scott, ‘A Statistical’, p. 136.

Quetelet's average man.⁷⁰⁵ His idea was behind the demographic condition of the first Argentine CLI, and implicit in the way Bunge constructed the shares of the three sub-indices of the comprehensive price index.

The name *presupuesto teórico* places it as an abstraction from reality. The denomination reflected that clothing information was either partial or non-existent. Figuerola's argument behind the name of the budget was coherent. This thesis infers it was a pragmatic choice that highlighted the limitations of the 1933 survey. It also suggests that Figuerola was aware of the problems of carrying out an enquiry for just one month. However, the procedure went against the ICLS resolution,⁷⁰⁶ explaining the name change in the 1937 DNT report when information to estimate the clothing component became available.

While prices vary equally for everyone, the impact of the fluctuations depended on "economic possibilities and the consumption capacity of each family".⁷⁰⁷ This chapter acknowledges that this idea justifies the existence of the monetary and demographic conditions of the household budgets. However, Figuerola did not want to elaborate more than one CLI. For him, only one index number was necessary when trying to elucidate the fluctuations in the cost of living of a city, a country or income group.⁷⁰⁸

The arbitrarily established m\$120 wage was a gross salary, a value assessed later on, and not the actual disposable income, resulting in a lower household budget and an overrepresentation of the expenditure on the goods considered. It was also a wage band due to the specifications in the Instructions. The choice to base the *presupuesto teórico* on four households over the ten available that met the two conditions was justified on the premise that expenditure and income balanced out in them, confirming that they lived in a very precarious condition, consistent with Figuerola's aims. It also meant that the savings component was excluded from the budgets, a procedure similar to Bunge's. Such a balance implies that those four families did not buy clothes.

This chapter suggests that in the 1942 comparison between the sample size of the October 1933 survey with other countries, the choice of the 3,020 families instead of 308 aimed to highlight Argentina's success relative to other countries, as it was the second

⁷⁰⁵ Porter, *The Rise*, p. 52.

⁷⁰⁶ The second ICLS argued that CLIs must be "based on actual facts and not theories", ILO, 'The Second', p. 17.

⁷⁰⁷ Figuerola, 'Cómo se investiga', p. 116, author's translation.

⁷⁰⁸ Figuerola, *Teoría*, p. 349.

highest number.⁷⁰⁹ The comparisons aimed to enhance the work of the DE and legitimise it, a procedure also followed by Bunge.

The international and local antecedents

The 1933 CLI had two groups of antecedents, one national and one international. Here, both are reviewed to elucidate to what extent the 1933 CLI fulfilled their guidelines.

The resolutions of the third ICLS

As mentioned in Chapter IV, the second and third ICLSs discussed topics linked to CLIs. Here the report released after the third ICLS was held will be analysed, as the second conference has been discussed elsewhere.⁷¹⁰

The Technical Secretary of the ICLS committee on family budget surveys highlighted that differences existed between enquiries into the standard of living and surveys that aimed at establishing the weights of cost of living estimates. The resolutions released by the committee were divided in two. This was done not only “to point out that a simpler enquiry will give satisfactory results, but also to indicate some of the lines along which the enquiry might be reduced”.⁷¹¹ For Figuerola, the budget survey had more than one purpose, while here it is being argued that the index was part of a wider plan to make the working class. Consequently, all the resolutions are equally important to the Argentine case.

The first ICLS resolution stated that budget surveys should be of families that were “representative of a large homogeneous section of the population”. Also, “it is preferable to ask for less detailed information than to reduce the number of families”.⁷¹² Even if a minimum sample number was not stated, it was clear from the resolution that it should be sufficiently large. The underlying ICLS idea was that the larger the sample, the bigger the compensation effect of the differences in expenditure. The lack of specification regarding sample size impacted on the procedure followed by the DE, influencing the ‘narrowing down process’.

⁷⁰⁹ Figuerola also commented upon the low satisfactory response rates of Australian surveys of between 6% and 14% – an example initially quoted in ILO, ‘Methods of Conducting Family Budget Enquiries’, *Studies and Reports*, Series N (Statistics), 9, 1926.

⁷¹⁰ C.T. Lanata Briones, ‘Different Sample Sizes, Different Results. The Cost of Living Index of the City of Buenos Aires, 1933-1943’, paper presented at the 38th Annual Meeting of the Social Science History Association, Chicago, 21-23 November 2013, pp. 4-8.

⁷¹¹ ILO, ‘The Third’, p. 36.

⁷¹² *Ibid.*, p. 110.

The second ICLS resolution claimed that daily records of income and expenditure should be kept for a year. If an annual survey could not be conducted, “every effort should be made to secure from as large a number of families as possible budgets covering at least four periods of no less than a week, one in each quarter, or two periods of at least a fortnight in different seasons of the year”.⁷¹³ The debate regarding the duration of the survey was considered so important, that it generated changes in the draft resolution.⁷¹⁴ Information would be gathered on items purchased regularly. For those goods bought infrequently, like clothing, “annual records kept from a smaller number of families or information on which annual estimates could be based should be sufficient”.⁷¹⁵ Account books or special forms should be distributed. For long-term investigations, blank notebooks should be handed out, while for shorter ones “essential items of expenditure only could appear”.⁷¹⁶ The ICLS resolution emphasised the importance of a large sample size, especially if the duration of the survey was less than a year. There was a separation between frequent and infrequent purchases and the importance of recording them under different methods according to the duration of the survey. Though this latter point was considered in the Instructions elaborated by the DE, in the end the resolution was not followed. It was probably on the basis of this ICLS resolution that the DE designed the 1935 yearlong survey. Figuerola only distributed blank booklets. From the DNT publications, it cannot be known why the 1933 family budget survey was carried out for just a month. Given that it is suggested here that Figuerola was aware of the third ICLS and he stressed a preference for long surveys, the time span was presumably chosen due to practical constraints.

How and what to record was established in the third ICLS resolution. Each family should give information on where they reside, industry and occupation of income-earning family members, composition of the household, and details on their housing situation. “Information should be given for each important item of income and expenditure”. Income data should comprise “earnings in money and kind, sums received from boarders and lodgers, from insurance funds, pensions and investments, together with income from allotments or in the form of gifts”. As for expenditure, “the quantity purchased, as well as the cost, should be recorded wherever practicable”.⁷¹⁷ Quantities were not surveyed by the DE, which only took into account families with one source of monetary income.

⁷¹³ Ibid., p. 110.

⁷¹⁴ Ibid., p. 23-6.

⁷¹⁵ Ibid., p. 110.

⁷¹⁶ Ibid., p. 95.

⁷¹⁷ Ibid., p. 111.

The fourth ICLS resolution claimed that “if the number of budgets secured is adequate, separate averages should be given for important districts and industries”,⁷¹⁸ as well as for different types of workers and income groups.⁷¹⁹ Information should be grouped as an average per family, for families classified according to size, and as a unit of consumption, such as an adult male. Results should show average income from different sources, “and the quantity of and expenditure on each of the chief commodities. Separate information should be given for each item of income and of expenditure which constitutes on average not less than 1% of total income or expenditure”.⁷²⁰ For the ICLS, items should be classified in six categories: food, clothing, housing, fuel and electricity, furniture and furnishings, and miscellaneous. The DNT considered the idea of unit of consumption,⁷²¹ but, however, the 1933 CLI was based on a family of five individuals. As for the components, the 1933 index mimicked the resolution of the second ICLS. No registration of furniture and furnishings existed. The averages for the different types of family structure and wage categories were published.

The last resolution focused on enquiries that would provide weights for a CLI. “Satisfactory results may be obtained from a less detailed investigation than that indicated above. Information regarding district, industry, composition of family and expenditure upon each of the several items to be included in the index numbers only is necessary. It is desirable, however, to have, in addition, information as to quantities”.⁷²² A shorter survey should be carried out “only if a more complete enquiry cannot be undertaken”.⁷²³ This was the procedure followed in Argentina, but it contradicted the multipurpose aim of the survey Figuerola argued for. There was no specification on how to determine the families to be surveyed⁷²⁴ or how to collect data. The ICLS argued that the results should be presented according to the requirements of the CLIs in each country. This was linked to the recommendations of the second ICLS, perhaps undermining slightly the importance of the family budget survey and also setting the context for more arbitrary, less standardised procedures in the collection of data. This contributes to the idea of the contradictory message of standardisation and national particularities highlighted in Chapter IV.

⁷¹⁸ Ibid., p. 111.

⁷¹⁹ Presenting the information categorised in this manner made different CLIs possible, as shown by Halbwachs and breaking with Le Play’s notion of an average of all the cases, see González Bollo, ‘Ciencias sociales’, p. 27.

⁷²⁰ ILO, ‘The Third’, p. 111.

⁷²¹ DNT, ‘Costo de la vida’, pp. 10-3.

⁷²² ILO, ‘The Third’, p. 112.

⁷²³ Ibid., p. 15.

⁷²⁴ For the ICLS, to provide CLI weights “averages based on budgets collected from families whose incomes and occupations cover a fairly wide range will give satisfactory results”, ILO, ‘Methods’, p. 15.

The national guidelines set out in the PCNE

The PCNE's general content was analysed in Chapter IV. However, its recommendations on prices and workers' budget are reviewed here. Price statistics were discussed in the economics panel, which argued that provincial statistical bureaus should gather monthly price data from several retail shops in the main urban centres for a large number of goods. Monthly price index numbers for each good in different urban centres should be estimated and published. Price statistics – collected monthly between the 10th and the 15th – should start to be released in early 1926.⁷²⁵ However, the recommendations were not specific: there was no mention of the type and number of establishments from where to collect price data. Only food and clothing items formed part of the price list. Looking at different editions of the *BIDNT* as well as the *DNT Monthly Chronicles (Crónica Mensual del DNT)*, prices were gathered before 1933, though not in a systematic manner that would have allowed consistent price series to be calculated, contradicting the PCNE. Starting in January 1934 and for a couple of months, the *BIDNT* released a highly detailed price list, similar to the one suggested in 1925. Once the components of the *presupuesto teórico* were determined and circulated, such detailed information ceased being published.

The labour section recommended that prices of basic goods, of widespread use among the working population, be collected monthly. That statement was followed by a list of 27 food items,⁷²⁶ most of them part of the 1933 CLI. A briefer version of this list can be seen in different publications.⁷²⁷ Before the 1925 conference, similar lists were published.⁷²⁸ The information from these sporadic releases is used in Chapter VI to re-construct the Argentine index. As for worker budgets, the PCNE recommended that provincial labour departments should develop statistics on the resources and expenditures of worker families. There was a list of the information to be collected from each family regarding demographic characteristics, incomes, expenditure, and housing conditions. Expenditure should be divided into categories, similar to those established in the ILO reports, but with far greater detail regarding the miscellaneous group.⁷²⁹ There was no reference to the frequency at which this budget data should be gathered, but there was a mention of an enquiry into annual expenditure. This suggests that the PCNE aimed for these studies to be conducted annually.

⁷²⁵ DGEN, *Recomendaciones*, pp. 72-5.

⁷²⁶ *Ibid.*, p. 103.

⁷²⁷ For example *CMDNT*, 'Precios de los artículos de consumo que regían en la Capital Federal en 1927 y sus oscilaciones por mes', 11:124, 1928.

⁷²⁸ *CMDNT*, 'Artículos de primera necesidad', 7:76, 1924.

⁷²⁹ DGEN, *Recomendaciones*, pp. 102-3.

As mentioned in Chapter IV, this information began to be gathered with Bunge in 1913. It was also collected in 1926, 1928 and 1929,⁷³⁰ but was discontinued before there was an official plan to elaborate a CLI. The PCNE recommendations placed no particular emphasis on the need to carry out budget surveys such as the 1933 one.

Despite the contemporary praise of the conference and the magnificent results achieved according to the then head of the DGEN, the report of the 1925 PCNE only quoted once the notion of cost of living, as was mentioned in Chapter IV, when the Argentine CLI was experiencing its sombre period. Little progress was made regarding the collection of this information after the PCNE until the 1933 index.

The pitfalls of the 1933 CLI

The remainder of this chapter analyses several contemporary publications to shed light on the methodology of the 1933 CLI and its pitfalls. Most of the inconsistencies and problems are interrelated, but they are here examined in three groups. The first discusses the *presupuesto teórico*. The second analyses the sampling technique and the ‘narrowing down process’ of budgets. The last deals with the 1933 CLI’s antecedents and general theoretical aspects.

Characteristics of the *presupuesto teórico*

Dependence on a month-long survey casts doubts on the reliability of the data in general and of the four budgets of the *presupuesto teórico* in particular. A *presupuesto teórico* grounded on information from a larger number of families would have helped counterbalance that fault. Regarding the monetary conditions, the Instructions defined workers and employees and determined that the wage categories were bands. Even if feasible and helpful in making up the working class, it cannot be assumed that workers only earned between m\$115 and m\$235, or that employees received between m\$225 and m\$525. The definitions of worker and employee avoided the possibility of an overlap between the higher earning workers and the lower earning employees in terms of tasks, but implied that an individual undertaking administrative activities could not earn less than m\$225 a month and a person doing manual labour could not earn more than m\$235. As workers were paid on a weekly or fortnightly basis, their average monthly wage was not fixed and they were not always part of the same wage band, suggesting that the workers’ wage interval should have been more comprehensive than +/-m\$5.

⁷³⁰ CMDNT, ‘Los presupuestos’; CMDNT, ‘Recursos, gastos’; CMDNT, ‘Recursos’. Before 1925, the data was gathered with a completely different format, see CMDNT, ‘Presupuestos’.

Given the way workers were remunerated, if in October 1933 they worked less (or more) than usual, they could have had a different income, affecting the goods bought in that month. As the *presupuesto teórico* was based on only four budgets, instead of being averaged out among the cases surveyed, this issue gains considerable importance. As for the quantities, problems can arise with non-perishable goods: they might not be acquired every month and thus could have not formed part of the expenditure of those four families in October 1933 or could have appeared in a smaller or larger share than normally consumed. These issues also influenced the balance between income and expenditure, which was a crucial determinant behind the four budgets.

Empirical evidence can also provide some insight into the need to consider more than four budgets. Using the information from the 1935 DNT report, 11.7% of the workers' households had balanced budgets, 38.8% of families' expenditure was below their wage band and 49.5% above,⁷³¹ showing that these households generally did not have a balanced budget.⁷³² Data on hours worked and wages, in Figure 17, sheds more light onto the wage scenario. This information suggests that given the way workers were remunerated, the hours worked made a difference to their earnings, which impacted on the value of the monetary condition and on the monthly purchases of workers.

Figure 17: Hours worked and wage data, 1933 and 1935

	Average hours worked per week	Minimum hourly worker's wage (m\$n)*	Average hourly worker's wage (m\$n)*	Minimum monthly worker's wage (m\$n)**	Average monthly worker's wage (m\$n)**
1933	47.4	n/a	n/a	79.6	153.9
1935	45.5	0.42	0.81	76.4	147.7

*October values; ** author's estimates based on October 1935 hourly wages

Source: author's elaboration based on Comité Nacional de Geografía, *Anuario geográfico argentino*, Buenos Aires, 1941, pp. 550-1; 559.

Using the 1935 figures as a benchmark due to data availability and assuming that wages did not vary much between 1933 and 1935, a monthly wage of m\$n120 implied a working week of 37 hours in 1933 at the average hourly wage for male adult workers of m\$n0.81. Though reasonable, that number is below the average of 47.4 hours shown in Figure 17. At the minimum rate of m\$n0.42, it represented a working week of 71 hours. Using 1935 figures,

⁷³¹ Following the Instructions, the expenditure was considered balanced if the difference between the total expenditure and the wage earned was within +/-m\$n5 for workers and +/-m\$n25 for employees.

⁷³² Considering all cases, 48.4% had expenditure below the corresponding monthly wage band, 33.8% of budgets had expenditure above the monetary condition they complied with, while only 17.9% of the cases had a balanced budget. The bigger the monthly wage, the greater the gap below the expenditure, partly due to missing items, like clothing.

the average weekly hours worked in 1933 at a minimum wage implied a monthly sum of m\$79.60, jumping to m\$153.90 using the average hourly wage. The Interior Ministry determined economic zones to establish the minimum wage in 1934, arguing that in the City of Buenos Aires that sum should be between m\$151 and m\$160.⁷³³ In 1935, the CGT celebrated the rise of the minimum wage of public workers to m\$160.⁷³⁴ All these figures differ substantially from the value chosen by Figuerola, suggesting that a monthly wage of m\$120 was not the lowest salary in October 1933. To neutralise as much as possible these disparities, a larger number of cases could have been considered when estimating the *presupuesto teórico*.

The main piece of data on which the *presupuesto teórico* was based was the value spent. Thus, the quantities used as the basis of the CLI were not necessarily the actual amounts consumed. Generally, the price of a product varies according to quality, brand, and sometimes season. This was acknowledged by Figuerola. However, a price chosen exogenously might have distorted the quantity obtained through this procedure, as the prices used by the DE might or might not have corresponded to the ones paid by workers. The choice to focus on values rather than quantities was justified by Figuerola in 1942, where he argued that low-income families rarely bought goods in full units. Despite this, the registration of quantities should have been mandatory. Even if Figuerola's explanation was grounded on actual behaviour, this way of purchasing might imply obtaining items for a higher price than the one registered officially, distorting the quantities of the *presupuesto teórico*. Figuerola explained that the original quantities were not revealed because there was an "almost absolute coincidence" between them and the series estimated with the official price list.⁷³⁵ He also claimed that it was up to respondents to register quantities. If we combine this with the fact that those earning very low wages generally did not buy goods in full units, then the chances for booklets to have quantity information were small, supporting the idea that only values were gathered.

Following what Loveman and Scott have done for other case studies,⁷³⁶ the table that presents the *presupuesto teórico* can be read to acquire more information on the 1933 CLI. This analysis shows that the average values of the four budgets of the *presupuesto teórico* did not correspond to the values used to determine the quantities of the different goods that formed the budgets. Only in 1942 did Figuerola attribute those discrepancies to the

⁷³³ RCE, 'Zonas económicas a los efectos de determinar el salario mínimo', 22:158, 1934, p. 871.

⁷³⁴ 'El salario', CGT, p. 1.

⁷³⁵ Figuerola, *Teoría*, p. 284, author's translation.

⁷³⁶ Loveman, *National Colors*; Scott, 'A Statistical'.

adjustments made to introduce the clothing component.⁷³⁷ The 1937 DNT report stated that the clothing value, m\$6.36, was not arbitrary, just insufficient, but it never explained how it became available. Looking at the data, it would appear that chicken, beer, eating out, schooling and its related expenditures, and medicines were part of the average of the four budgets, but did not form part of the *presupuesto teórico*. There was a common trait among the goods omitted from the food component: they had been consumed by only one of the budgets. It would seem, therefore, that they were excluded because the average could not be representative of overall consumption. Nevertheless, rice, bought by one family, was part of the *presupuesto teórico*, probably because it was a basic good. The sum of the food items excluded was m\$8.46. The difference between the value of food component of the *presupuesto teórico* and the average of the four budgets was m\$10. Thus, the residual m\$1.54 implied a re-adjustment among the remaining food items. It is assumed here that the re-balancing related to the need to have whole quantities. Given that the original data was values, to have quantities in full units, values had to be modified. For example, the value of the average of the four budgets of transport trips rendered 39.3 journeys. When the value was adjusted to form part of the *presupuesto teórico*, the number became 48. The value of the difference in the food sub-index was enough to allocate some of it to the clothing sub-index and adjust the rent to include electricity.⁷³⁸ This analysis suggests that the exclusions and re-adjustments were random and that the initial value of the clothing sub-index was to, a great extent, subjective, contradicting the DNT statement. This illustrates the margin statisticians have to develop numbers, as their judgment is involved in the creation of indices.

From the Instructions, it can be inferred that the wage categories surveyed referred to gross income rather than net. In the sub-index general expenses, two of the four budgets had expenditure under the category 'pension and taxes'. Nevertheless, this category was excluded from the *presupuesto teórico*, without explanation, but probably because it is not consumption expenditure, much as occurred with Bunge's index and savings. If taxes were generally paid by the workers and not by the employees, all wage categories had a lower disposable income than the one stated, the budgets were not balanced, and what they declared as expenditure should account for that fact. The ICLS did not come to a conclusion as to how to gather information on taxes, they just claimed it would be advisable to gather such

⁷³⁷ Figuerola, *Teoría*, pp. 318-9. The hairdresser item of the general expenses sub-index was not listed by any of the four budgets but nevertheless formed part of the *presupuesto teórico*.

⁷³⁸ *Ibid.*, p. 330.

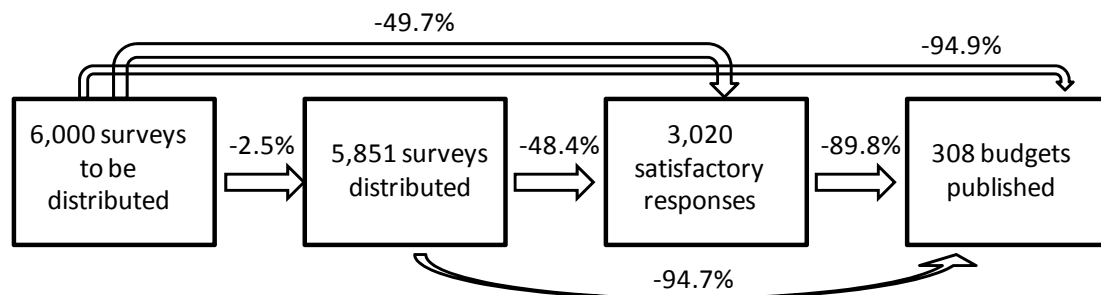
information, which probably influenced the October survey and the exclusion of the category from the *presupuesto teórico*.

Sample and sampling

The de-construction of the 1933 CLI highlights the existence of what this thesis calls a ‘narrowing down process’ of the cases considered in the 1933 family budget survey. Figuerola hinted at why the process occurred, but never provided a clear explanation, which is put together in this chapter. The de-construction also shows that the sampling procedure was never spelled out.

According to the *BIDNT* articles and Figuerola, 6,000 blank surveys were to be distributed. The October 1933 edition of the *BIDNT* had a chart with information on how 5,851 booklets were distributed by the intermediaries.⁷³⁹ Given that this information was provided during the month in which the budget survey was taken, either the 149 outstanding booklets were not distributed at all or they were delivered later on. The first option seems more likely. The October 1933 article introduced this first step of the ‘narrowing down process’, depicted in Figure 18, which implied a reduction of 2.5% of the cases. The step is difficult to explain, partly because this *BIDNT* information was not quoted in any other article or official report and due to the lack of details in the article itself.

Figure 18: The narrowing down process, 1933 budget survey⁷⁴⁰



Source: author's elaboration.

Figuerola mentioned that of the surveys distributed, 3,020 were satisfactory. The second step of the process, the selection of satisfactory responses, implied a 48.4% reduction of the sample from the surveys distributed, as shown in Figure 18. What did Figuerola consider as satisfactory responses? Unfortunately, it was not defined clearly. It would seem that for him the 3,020 households complied with the four conditions – monetary, demographic and

⁷³⁹ *BIDNT*, ‘Costo de la vida. Resumen de casos a que se extiende la investigación del costo de la vida obrera en la Capital Federal, distribuidos por actividad profesional, empresas y sindicatos obreros’, 15:165, 1933.

⁷⁴⁰ The arrows depict the reduction of the sample between stages.

geographic and the general traits of households. However, having analysed the Instructions, these should not be sufficient to explain the ‘narrowing down process’, as all those requirements were initial survey prerequisites. The need to re-state them suggests potential mistakes in the distribution of questionnaires. The intermediaries received the Instructions but there was no mention of any additional training for them.⁷⁴¹ On purpose or due to that lack of guidance, they could have distributed booklets incorrectly, so the four conditions ended up determining the ‘narrowing down process’. The only specification that could have been applied related to the children’s age, as the Rules and Instructions did not mention it. If effectively the four prerequisites influenced the ‘narrowing down process’, the role of the intermediaries in the distribution process was flawed. Moreover, perhaps not all 5,851 booklets were returned to the DNT, having a direct impact on the potential number of satisfactory cases.

In the end 308 budgets were considered in the elaboration of the 1933 CLI: 196 were worker families and 112 were employee households. The former were overrepresented when they were supposed to be proportionate. In the third step of the ‘narrowing down process’, only 5.3% of the booklets distributed and 10.2% of the satisfactory ones were considered. Why was the number of budgets narrowed down if the conditions they had to comply with were considered in the second step? There was no explanation behind the last step of the process. In line with previous arguments, the resistance of the respondents, their lack of awareness and trust,⁷⁴² and their insufficient training could have led to poorly and/or wrongly answered surveys. According to the 1937 DNT publication, better-answered notebooks were chosen. This suggests that many booklets were missing the basic information set out in the Instructions. Another motive behind this third step could have related to the fact that the head of household was not the only one receiving an income, an issue of great importance to Figuerola,⁷⁴³ which was clarified in the Instructions. As blank booklets were used, how was the *presupuesto teórico*’s list of goods established? Possibly, it was agreed upon first as it mainly comprised basic goods. In that case, the ‘narrowing down process’ also related to those that mainly spent most of their income on those items and not others. It can be supposed that not all budgets included an important share of the goods of the *presupuesto teórico*. Booklets with consumption preferences that were far off from the average ones could

⁷⁴¹ Inexperienced interviewers and poor follow-up of their work impacted negatively in Rowntree and Lavers’ 1950 social survey, T.J. Hatton and R.E. Bailey, ‘Seebohm Rowntree and the Postwar Poverty Puzzle’, *Economic History Review*, 53:3, 2000, pp. 517-43.

⁷⁴² In a letter to Nixon, Figuerola highlighted that workers’ trust should be increased, ILO, Statistics, T 102/0/2, Letter from Figuerola to Nixon, 8 February 1936.

⁷⁴³ Figuerola, *Teoría*, pp. 281-3.

have been discarded. The DE was never forthcoming about the actual cases considered. It always quoted the big numbers, because when compared to other surveys, it consistently positioned the Argentine index as being estimated from a large number of cases, even though, as Chapter VI shows, this was not the case. The high rate of satisfactory responses appears questionable when Figure 18 is considered. Given the lack of an official explanation, it is possible that all the reasons mentioned here influenced the ‘narrowing down process’ of cases.

Figuerola argued that the choice of intermediaries was done to guarantee the best results, which he claimed, without explaining, came from firms, followed by DNT inspectors, and lastly by workers’ associations.⁷⁴⁴ What explains his claims? The October edition of the *BIDNT* showed the distribution of the 5,851 booklets, which has been re-organised in Figure 19.

Figure 19: Allocation of distributed booklets by distribution channel, 1933 budget survey

	Labour inspectors	JOP	Trade unions	Total
Number of surveys	1,605	2,734	1,512	5,851
Share in total	27.4%	46.7%	25.8%	100.0%

Source: author’s calculations based on *BIDNT*, ‘Resumen’, pp. 3618-20.

The information synthesised in Figure 19 implies that firms were replaced by the Professional Organisation Leadership (*Jefatura de Organización Profesional*, JOP) of the DNT. Thus, the DNT distributed itself – either through its inspectors or the JOP – 74.2% of the questionnaires. It is unknown how the JOP handed out the booklets, whether directly or through other agents. Considering the labour inspectors and the JOP as different intermediaries, the goal set in the Rules and Instructions and commented upon in the 1935 DNT report of having a third of the sample for each type of agent was not met. Almost 47% was allocated through the DNT, while trade unions distributed the lowest share of budgets, with just 26%.

The disaggregated data on the 308 budgets included the allocated number of each booklet. Using the information from the Instructions,⁷⁴⁵ the final allocation per intermediary is set out in Figure 20.

⁷⁴⁴ The first ICLS concluded that inspectors and workers’ and employers’ organisations were useful intermediaries, but the information gathered by organisations should be scrutinised, see ILO, ‘International’, pp. 67-8.

⁷⁴⁵ *BIDNT*, ‘Instrucciones’, p. 3576.

Figure 20: Allocation of final number of cases by distribution channel, 1933 budget survey

	Labour inspectors	JOP	Trade unions	Total
Number of surveys	114	151	43	308
Share in total	37.0%	49.0%	14.0%	100.0%
Ratio final to distributed budgets	7.1%	5.5%	2.8%	5.3%

Source: author's calculations based on *BIDNT*, 'Instrucciones', p. 3576; DNT, 'Costo', pp. 27-52.

Figure 20 shows that 49% of surveys were distributed by firms and employers (or the JOP), 37% were handed out by the DNT inspectors and 14% by trade unions. The different degree of success, particularly when comparing the ratio of final to distributed budgets for labour inspectors (7.1%) and trade unions (2.8%), was probably influenced by who explained better the procedures, which, it is suggested here, highlights who had more interest in a successful survey, as well as the different administrative capabilities. This pattern followed Figure 19 to some extent, undermining even more the role of trade unions. This would, to some degree, provide a basis for Figuerola's claim regarding the different success rates of the intermediaries. However, assuming that the DNT distributed most of the surveys and consequently supervised respondents, the existence of a 'narrowing down process' implies that it was not very successful. However, for the DE, the lack of cooperation from respondents was not its responsibility, but that of the media and the trade unions. This statement was based on the low success rate of the trade unions, which suggests that unionised workers disapproved of the DE's statistical work. Instead of refusing to contribute to the survey process, they jeopardised the results, following previous distrust in Bunge's CLI. This behaviour also related to the way the Argentine technical bureaucracy monopolised knowledge: the DE sought the cooperation of workers, but did not consult them when establishing categories and parameters.⁷⁴⁶ This experience influenced the DE when carrying out the complementary survey in 1935, when the booklets were distributed solely by the DNT, which suggests a process of learning by doing. Both Bunge's and the 1933 CLI had little cooperation in the gathering of information, which must have influenced the legitimacy of the index.

The Instructions argued that "to the greatest extent possible" the surveys distributed by wage category should be dispersed within different family structures.⁷⁴⁷ The expression *to the greatest extent possible* suggests that meeting the demographic condition was less of a

⁷⁴⁶ Unlike that which occurred in Britain and France, see Daniel, 'L'objetivation', pp. 183-4.

⁷⁴⁷ *BIDNT*, 'Instrucciones', p. 3579, author's translation.

priority compared to the monetary one, thereby preventing each demographic quota per wage category from being met. Indeed, it would seem that, from early on, Figuerola aimed to base the CLI on the lowest budget. Despite the international comparisons he made, he stated that the number of cases consulted did not matter “as long as they are representative”.⁷⁴⁸ Given the choice of the lowest budget had already been decided upon, representativeness must have been sought in the family structure. The undermining in the Instructions of the distribution procedure from the perspective of the demographic characteristics and the contradictions between Figures 14 and 16 cast doubts on that representativeness. An important difference highlighted earlier was that according to the Rules and the Instructions, surveys were distributed amongst families formed by a couple without children and a couple and two, four and six children. However, the data in the 1935 DNT publication included other family structures, leading to a *presupuesto teórico* based on a household formed by a couple and three children. Why were these other family structures suddenly considered? There is no evidence to answer this question. The most likely answer, however, is that the DE realised that the omission was a mistake and decided to incorporate other family structures.

The lack of clarity in the explanation of the ‘narrowing down process’, the actual intermediaries behind the distribution of budgets, and particularly the method used to determine the family structure of the *presupuesto teórico* cast doubts on the sampling procedure and, consequently, on the CLI as a whole. Figure 21 illustrates how the 308 surveys were distributed given their monetary and demographic characteristics.

Figure 21: Distribution of family budgets per demographic and monetary conditions, 1933 budget survey

	m\$120	m\$140	m\$175	m\$200	m\$230	m\$250	m\$300	m\$350	m\$400	m\$500	Total
Couple	10	10	10	10	3	10	9	10	5	4	81
Couple and 1 child	10	0	10	10	6	4	5	2	0	2	49
Couple and 2 children	10	10	10	10	6	10	9	7	7	5	84
Couple and 3 children	10	10	10	2	3	3	2	2	2	5	49
Couple and 4 children	10	3	0	3	0	0	3	4	0	0	23
Couple and 5 children	3	2	6	0	0	0	2	0	0	0	13
Couple and 6 children	4	2	3	0	0	0	0	0	0	0	9
Total	57	37	49	35	18	27	30	25	14	16	308

Source: author’s calculations based on DNT, ‘Costo’, pp. 27-63.

Of the 308 families surveyed throughout October 1933, 18.5% lived in the m\$120 wage band, which was the largest group. This implies that the monetary condition of the *presupuesto teórico* was representative. As for the demographic condition, Figure 21 demonstrates that a family formed by a couple and three children was not typical: only 15.9%

⁷⁴⁸ Figuerola, *Teoría*, p. 275, author’s translation.

of the sample complied with the *presupuesto teórico*'s demographic condition. The average family size of the enquiry was 3.9 members, with a share of 27.3% of the surveys, closely followed by one containing a couple without children. Regarding the latter structure, it was explained earlier that when Figuerola reproduced Figure 14 in his 1942 book he merged family structures leaving alone that of just a couple. This implied that for this family type more samples might have been distributed, influencing the results. As mentioned, Figuerola's aim for representativeness relied on the household size. Assuming that representative meant average, a family of five was too large, hinting at an intentional choice of the family structure used as the basis of the CLI.

What was the average family size at that time? Official estimates for the whole country, reproduced in Figure 22, were constructed for the census years.

Figure 22: Census estimates of the Argentine and City of Buenos Aires average family size

Census year	Families (thousands)	Individuals living in a family (thousands)	Average family size	Average family size (City of Buenos Aires)
1869	274	1,625	5.9	n/a
1895	673	3,678	5.5	n/a
1914	1,355	7,323	5.4	4.6
1947	3,407	14,759	4.3	3.8

Note: all data corresponds to Argentina as a whole except when specified.

Sources: author's calculations based on Ministerio de Asuntos Técnicos, *Cuarto Censo General de la Nación*, Buenos Aires, 1952, p. LXXVIII; República Argentina, *Tercer Censo Nacional*, Buenos Aires, 1916, pp. 109; 421; 429.

According to Susana Torrado, the fall in the Argentine average family size between 1869 and 1914 – from 5.9 to 5.4, as Figure 22 shows – followed the decline in fertility and the reduction in mortality. In the last two censuses, when it fell from 5.4 in 1914 to 4.3 in 1947, it related to the drop in the number of children per couple.⁷⁴⁹ Notably, numbers for the City of Buenos Aires were consistently below the country as a whole – by almost a member in 1914 and half a member in 1947.

In 1936 the City of Buenos Aires administration carried out a population census. Aggregate family structure results are compiled in Figure 23. These results only consider families formed by a couple, and a couple and children.⁷⁵⁰

⁷⁴⁹ S. Torrado, *Historia de la familia en la Argentina moderna (1870-2000)*, Buenos Aires, 2003, p. 412.

⁷⁵⁰ These structures represented 54.2% of all the families in the census.

Figure 23: Family structures in the City of Buenos Aires, 1936

Number of family members	Number of families	Share of families
2	79,760	24.2%
3	85,570	25.9%
4	73,908	22.4%
5	42,785	13.0%
6	23,252	7.0%
7	12,286	3.7%
8	6,479	2.0%
9	3,281	1.0%
10	1,572	0.5%
11	721	0.2%
12	289	0.1%
13	110	0.0%
14	37	0.0%
15	14	0.0%
16	1	0.0%
18	1	0.0%

Source: author's calculations based on República Argentina, *Cuarto Censo General 1936*, Buenos Aires, 1940 pp. 244-5; 298-318.

Figure 23 shows that 25.9% of the families had three members, 24.2% had two and 22.4% had four. A family of five, accounting for 13% of the total, was not archetypical. Figure 24 illustrates the average family structures in different circumscriptions of the city.⁷⁵¹

Figure 24: Average family structures in different circumscriptions of the City of Buenos Aires, 1936

	City of Buenos Aires	Working class circumscriptions*	Circumscription 1	Circumscription 2	Circumscription 3	Circumscription 4	Circumscription 15	Circumscription 20**
Total^	3.9	4.0	4.3	3.7	3.6	3.5	4.1	3.9
Comparable structures^^	3.8	4.0	4.2	3.9	3.7	3.9	4.0	3.2
Other structures†	4.0	4.2	4.4	4.1	3.9	4.1	4.2	3.3

*average of Circumscriptions 1, 2, 3, 4 and 15; **considered by Germani as where predominantly the wealthier families lived.

^includes all types of households; ^^refers to the same family structures as in Figures 21 and 23; †considers the comparable structures plus ones that include other members of the family, like parents of the couple, grandchildren of the couple, etc.

Source: author's calculations based on República Argentina, *Cuarto Censo*, pp. 246-59; 280-5; 296-7.

The average family size in the City of Buenos Aires was 3.9, as Figure 24 depicts, slightly above the size of the comparable structures (3.8 members) of the families considered in Figure 21. These results supported the figures from the 1933 survey. For the average of the working class circumscriptions, the family size exceeded that of the city as a whole, but only slightly. Within those areas, there was a disparity. In Circumscriptions 2, 3, and 4, the size of the families was smaller than the average of the total cases. For the comparable and other

⁷⁵¹ The circumscriptions considered were 1, 2, 3, 4 and 15. The first was defined by Germani as a predominantly working class area. He used to compare the working class social structure and the wealthier strata of society (Circumscription 20) in his studies on the Argentine social structure. The rest of the zones were the ones where the DNT also gathered price information. Germani, *Estructura*, pp. 49-54.

structures, the average size of all working class circumscriptions exceeded that of Circumscription 20. Thus, the average family sizes presented in Figure 24 were far from the demographic condition of the *presupuesto teórico*.

The annual surveys of the DE on expenditure of working class families in the City of Buenos Aires also provide some insight. The information is summarised in Figure 25.

Figure 25: Average family size of a household of the City of Buenos Aires, 1913-1929

	1913	1914	1922	1923	1924	1925	1926	1928	1929
Average family size	5	5	5	5	5	4	4	4	4

Sources: *CMDNT*, ‘Recursos, gastos y vivienda de la familia obrera’, 7:77, 1924, p. 1301; *CMDNT*, ‘Los presupuestos’, p. 1959; *CMDNT*, ‘Recursos, 1928’, p. 2697; *CMDNT*, ‘Recursos, 1929’, p. 3144.

The enquiries carried out between 1913 and 1923 show that the average family size was five, as depicted in Figure 25. From 1925, it declined to four. These figures were also similar to the results of the 1933 survey. As these enquiries, introduced by Bunge, were not trusted and the DE reported a lack of cooperation from workers, it seems likely that Figuerola kept his distance from them, as he did from the comprehensive price index.

From all this information, this chapter infers that a household formed by a couple and three children was far from being the representative family structure of the City of Buenos Aires circa October 1933, exposing the direct involvement of Figuerola’s judgment in the determination of the family structure. He had access to the information published in the DNT’s bulletins and the national population census data, which could have served him as a starting point or as a control variable. Contradicting the results of his survey and previous enquiries, he chose as representative a family structure that had no anchor in reality. This supports the argument regarding there being a premeditated choice of the family size behind the index.

What were Figuerola’s motivations in choosing a couple and three children as the basis of the *presupuesto teórico*? To find an explanation to that choice, several CLIs are here constructed altering both the demographic and monetary conditions. The series presented have four sub-indices: food,⁷⁵² housing,⁷⁵³ rent and general expenses.⁷⁵⁴ Excluding the clothing sub-index is not a problem because, for the DE, between 1933 and 1936 its variations did not influence the fluctuations of the CLI.⁷⁵⁵ Figure 26 presents indices for

⁷⁵² Bread, potatoes, beef, legumes, eggs, pasta, fish, oil, canned foods, cheese, flour, yerba, sugar, rice, coffee, milk, wine and soda water.

⁷⁵³ Coal, kerosene and soap.

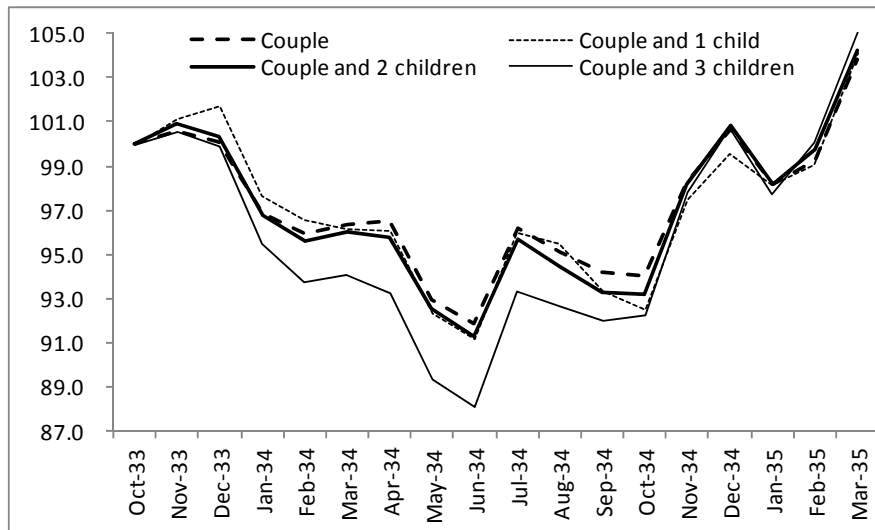
⁷⁵⁴ Newspapers and transport.

⁷⁵⁵ DNT, ‘Condiciones’, pp. 45-6.

different family structures living on m\$120 between October 1933 and March 1935, just before the 1935 DNT report was released.

Figure 26: Monthly cost of living estimates for different family structures living on m\$120, October 1933-March 1935

Base: October 1933=100



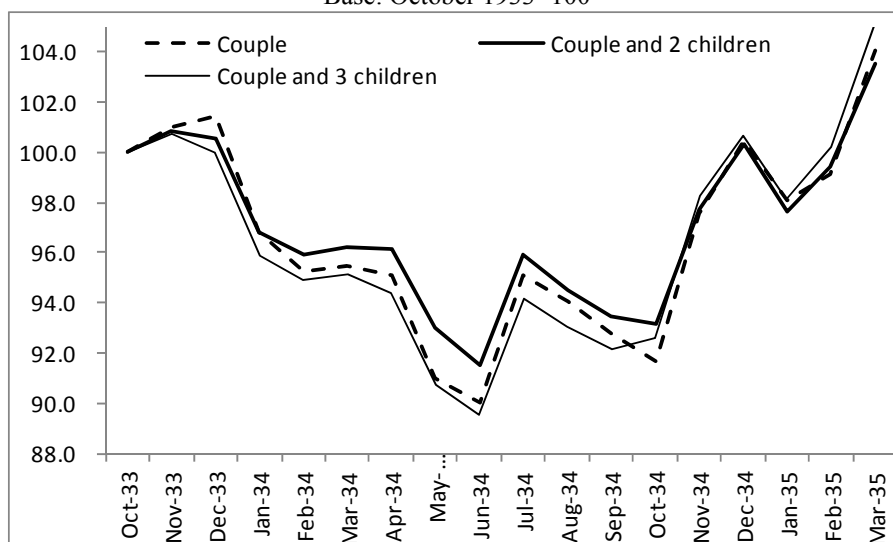
Sources: author's calculations based on *La Prensa*; DNT, 'Costo', pp. 27-30; DNT, 'Condiciones', p. 21.

Figure 26 reveals that between November 1933 and October 1934, the estimate for a family of five living on m\$120 presents lower values than the other indices. In June 1934, it reaches its lowest reading. In May and June, the biggest difference with the other budgets, of 3 percentage points, exists. Nevertheless, there is no clear trend from October 1934 onward. It shows a higher value than the others in February and March 1935. In January 1935 the estimate is, again, the lowest one. The indices for a family formed by a couple and one child and just a couple, generally depicted a higher cost of living. Nevertheless, the differences between these two indices and the budget for a couple and two children are never as significant as the one between these three and that of a couple and three children. Starting in November 1934, all four indices show relatively similar readings.

The same estimates are reproduced for family structures earning m\$140 and m\$175, as Figures 27 and 28 respectively depict.

Figure 27: Monthly cost of living estimates for different family structures living on m\$140 a month, October 1933-March 1935⁷⁵⁶

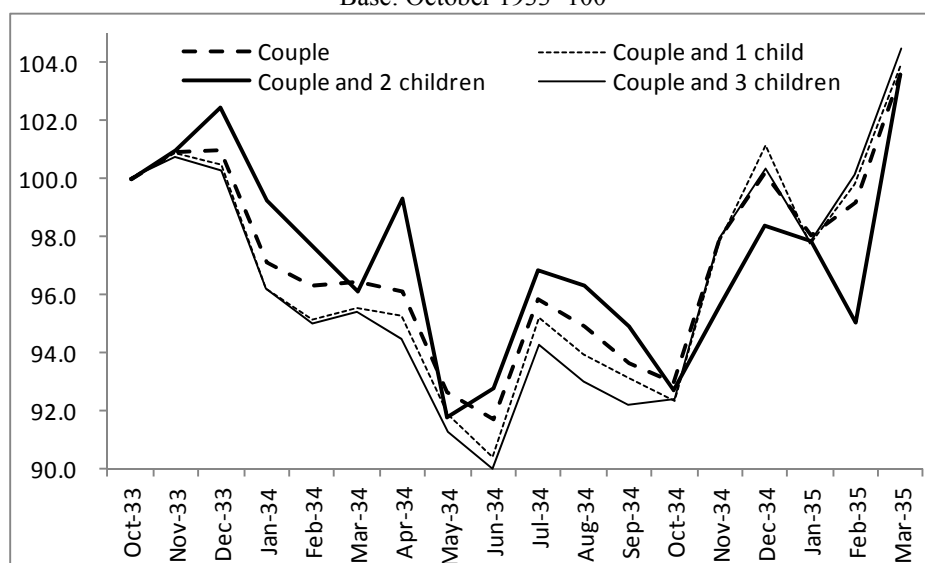
Base: October 1933=100



Sources: author's calculations based on *La Prensa*; DNT, 'Costo', pp. 33-5; DNT, 'Condiciones', p. 21.

Figure 28: Monthly cost of living estimates for different family structures living on m\$175 a month, October 1933-March 1935

Base: October 1933=100



Sources: author's calculations based on *La Prensa*; DNT, 'Costo', pp. 37-40; DNT, 'Condiciones', p. 21.

In Figures 27 and 28 similar trends exist regarding the estimates for a family of five as in Figure 26. All these different series highlight that between October 1933 and October 1934, the value of the CLI for a household comprised of a couple and three children was generally smaller than that of other family structures.

The explanation as to why a household budget was chosen as the basis for the *presupuesto teórico* despite not being typical must be found when the series begins. A brief

⁷⁵⁶ No estimate exists for a couple and one child, as Figure 27 shows.

chronology of events before the release of the index reveals this. The Instructions stated that the booklets and questionnaires should be returned to the DNT between 2nd November and 7th December 1933,⁷⁵⁷ but the official methodology of the CLI was published in April 1935. Figuerola therefore had over a year to determine the characteristics of the *presupuesto teórico*. In between those dates, the DNT released information on prices and on the cost of living. In January 1934, the *BIDNT* started to publish a monthly price series that covered food, clothing and household goods.⁷⁵⁸ As the DE probably had not processed all the survey data by then, they wanted to gather a wide range of information.

An article in the October-November 1934 issue of the *BIDNT* contained a table, practically without any text, with the value of the index for October 1934. In a footnote, the DNT claimed that a publication with complete results “which constitutes the beginning of the index series referred to in the table” was being prepared.⁷⁵⁹ The chart had a full breakdown of all the elements and quantities of what was then named the *presupuesto teórico* without referencing the characteristics of the household behind the budget. The table had quantities of all items in the column named theoretical consumption, the unit of measurement, the correspondent price for the month of October 1934, the value, and an index number for each component. The basis of the latter column was October 1933. Until October 1934, the monthly estimate for the CLI for a family of a couple and three children was the lowest one for a household living on different monthly wages, as Figures 26 to 28 show.

It took the Division almost a year to process all the information gathered in the October 1933 enquiry. The 308 sample was manageable at that time. It is suggested here that this allowed the DE to research and tinker with the numbers in search of an ‘appropriate’ CLI. The fact that in December 1934 Figuerola encouraged a year-long budget survey focused only on families living on m\$120 also provides evidence of potential tinkering. It would seem that the distinct trend of the different budgets for a household of five individuals between October 1933 and March 1935 provided an incentive to choose this demographic composition. Elaborating an index with a budget that showed lower price variations provided relatively higher real wages, leading to estimates that depicted the population as being better off than it actually was. This helps explain the choice of the household of a couple and three children as the basis of the CLI, providing yet more evidence of how statistics are not

⁷⁵⁷ As mentioned when analysing the Instructions, there was an initial distinction between daily and medium-term expenditure, *BIDNT*, ‘Instrucciones’, p. 3581.

⁷⁵⁸ *BIDNT*, ‘Precios corrientes de los artículos de alimentación, menaje de uso corriente, menaje de larga duración y de indumentaria’, 26:168, 1934.

⁷⁵⁹ *BIDNT*, ‘Costo’, p. 4058, author’s translation.

objective: they are elaborated by human beings who make their own judgements and have their own ideas. Following Stapleford's analysis of the US CLI and Searle's research on the British indicator,⁷⁶⁰ some choices that comprise the methodology behind the indicator can have political reasoning behind them.

Antecedents and theoretical aspects

The influence Figuerola had on the 1933 CLI is traced back to the Rules and Instructions, as, this chapter argues, he was acting as DE head before being named officially. The analysis of those documents and their comparison with the 1935 DNT publication show that Figuerola initially intended a more detailed, ambitious and complete survey. The gap between intentions and expectations, on the one hand, and results, on the other, is seen in the amount of items that formed the index and in the number of cases it considered. Following the sociology of quantification literature, the mismatch shows how statistics adjust to reality and to changes in context. The objectives of having a longer list of goods that included regular as well as medium- and long-term spending, together with a larger sample of families were a sign of Figuerola's knowledge. The consideration of only regular spending in the 308 budgets and the 'narrowing down process' were a consequence of the survey only being carried out over a single month. Why the short-list of articles given the existence of blank booklets? Several potential explanations emerge. When the Rules and Instructions were established, the DE team thought more financial and human resources would be available, aiming for a larger study. Figuerola claimed that only a "handful of individuals" worked in the DE in 1935.⁷⁶¹ The DE claimed that after its reorganisation "there is data", but that information was not fully available or processed due to "administrative difficulties that have hindered the DE from having the necessary staff, equipment and material until April 1, 1937".⁷⁶² The DE's budget and number of technical and administrative employees rose by 63% and 80% respectively between 1932 and 1934.⁷⁶³ Both variables remained fixed until 1936, with a special allocation of m\$4,000 in 1934 and 1935.⁷⁶⁴ The extra resources were probably not enough to process as many detailed booklets as originally envisioned, since the allocation was meant for unemployment statistics and the 1935 complementary survey. Also, as it was a single month

⁷⁶⁰ Stapleford, *The Cost*; Searle, 'Is There Anything'.

⁷⁶¹ ILO, Statistics, T 102/0/2, Letter from Figuerola to Nixon, 8 February 1936, author's translation.

⁷⁶² DNT, 'Condiciones', p. 6.

⁷⁶³ There is no information solely for the DE.

⁷⁶⁴ *Ley de presupuesto 1932*, p. 10; *Ley de presupuesto general de la República Argentina 1934*, Buenos Aires, p. 81; *Ley de presupuesto general de la República Argentina 1935*, Buenos Aires, p. 107; *Ley de presupuesto general de la República Argentina 1936*, Buenos Aires, p. 70.

enquiry, not all families might have purchased all goods that month, especially non-essentials. Moreover, the urge to have an index, as Bunge's CLI was no longer published, might have encouraged them to make the indicator as simple as possible. Lastly, the information provided by the different households might not have met the DE's expectations due to possible bad training and/or the bad predisposition of the different intermediaries and respondents. This chapter infers that there was no procedure to make potential survey respondents aware of the importance of their contribution,⁷⁶⁵ a practice carried out before censuses took place in order to avoid distrust, as was mentioned in Chapter III.⁷⁶⁶ This lack of awareness procedure probably influenced the understanding and predisposition of respondents and the results. If intermediaries and respondents were not properly instructed, their performance in distributing or answering booklets became flawed, leading to the high level of incomplete questionnaires.

To develop a CLI based on the preferences of the poorest workers, Figuerola knew *a priori* that he would not need ten wage categories, so why the ample sample? The budget survey was not only a mechanism to establish an index, but also a way to gather information on the working class, as the ultimate aim was to contribute to its making. The wider the sample, the greater the information collected. The need to follow international resolutions to legitimise the index encouraged the very detailed gathering of data. In an ample sample, the m\$120 wage could emerge as the average one and also be the lowest budget. The change in the terminology of the budget used as a basis of the CLI with the gathering of clothing data suggests that a *presupuesto teórico* was estimated due to the monthly character of the survey and that all along Figuerola wanted to estimate a standard budget, following ICLS resolutions. Establishing a *presupuesto teórico* was a pragmatic decision taken due to particular circumstances.

However, the October 1933 enquiry was used only to elaborate the 1933 CLI. The 1935 yearlong survey targeted households whose heads earned between m\$115 and m\$135 and were married with three children under the age of 14. The narrower range suggests that the DE's interest was in a particular sector of the working class, the representative family. For Figuerola, the differences implied that "what was lost in terms of coverage [due to the

⁷⁶⁵ The ICLS suggested that interest in and awareness of the survey should be raised, ILO, 'Methods of Conducting', p. 20.

⁷⁶⁶ If there was a scheme to raise awareness scheme, it did not last long. Intermediaries received the booklets and questionnaires between September 1 and September 15, who and were asked to hand them out before September 30, *BIDNT*, 'Instrucciones', p. 3557.

smaller scope of incomes and family structures] was gained in terms of intensity”.⁷⁶⁷ The contrasts between the two surveys imply that it was impossible to carry out a yearlong survey of a wide demographic and monetary scope. Figuerola had to make choices, adapting ICLS resolutions to the circumstances. He also had to adjust his initial aims and take a single-purpose survey in 1935, influenced by the 1933 experience, the stability in the financial and staff resources and the lack of collaboration of the population. The adjustments and the changes show how statistics are not static, and how statisticians learn by doing.

As for the international antecedents, the ICLS resolutions can be seen as a set of sketchy, imprecise guidelines. They emphasised the need to understand the situation of workers, in line with the DNT’s overall project. However, the resolutions of the first three statistical conferences were too broad and general, with little emphasis on statistical methodology and more on classifications,⁷⁶⁸ leaving countries wide margins to act. One of the main issues disregarded by the ICLS was how to proceed regarding survey sampling techniques, when random and probabilistic sampling were not used by statistical bureaus. The resolutions did not define an adequate or ideal number of budgets. In the Argentine case, this influenced the sampling procedure. Certain resolutions were not complied with entirely or were followed selectively, partly because, as inferred from Seekings’ example when analysing legislation,⁷⁶⁹ they were designed for contexts different than those of southern countries.⁷⁷⁰ The tension between standardisation and adaptation to national circumstances, highlighted in Chapter IV, also influenced the application. The *presupuesto teórico*, the ICLS’s least-preferred method, was embraced by the DE. The budget survey was carried out for a month, even though that was a procedure discredited by the statistical conference. Thus, Figuerola, as Bunge did before him with other international guidelines, adapted the ICLS resolutions to Argentine needs and circumstances. Nevertheless, to place the 1933 CLI at a high level, in contrast to previous estimates, the DE had to elaborate an index as close as possible to what the ICLS recommended, and constantly relate the indicator to what it advised.

⁷⁶⁷ DNT, ‘Condiciones’, p. 26-7, author’s translation.

⁷⁶⁸ The same situation was experienced by the ISI until 1945, see Prévost and Beaud, *Statistics*, p. 164.

⁷⁶⁹ Seekings, ‘The ILO’.

⁷⁷⁰ Critiques of ICLS resolutions were made from within. For Corrado Gini, who participated in the ICLS, considered it was a mistake to ask all countries to apply measures that had been adopted in advanced ones. They did not account for “the administrative, financial and even psychological difficulties with which different States are faced”. However, Gini argued that countries “could consider the ideal system when framing their programmes”, ILO, ‘The Third’, p. 17.

This chapter suggests that the PCNE, by contrast, was referenced as an antecedent for institutional purposes, for respect to the past and to anchor the 1933 CLI within the Argentine statistical system, given the importance contemporaries attached to the conference. Quoting it placed the 1933 CLI within the national statistical system, in line with the general project of making the working class. The PCNE had relatively less influence on the 1933 CLI than the international resolutions. As was shown in Chapter IV, CLIs were not important for the national conference, and its recommendations regarding prices were not followed. Even for the list of goods that formed the comprehensive price index, long-term price series were never published.

Apart from the mention of the ICLS, the references in Figuerola's texts are signs of his theoretical expertise. He was aware of CLIs in different countries and of the debates held in the international arena, largely due to his experience before arriving in Argentina. The authors and publications quoted in the 1935 article are evidence of the knowledge he had when elaborating the 1933 CLI. He referenced Armand Julin's book *Précis du cours de statistique* (1911), Halbwichs' *L'évolution des besoins de la classe ouvrière* (1933), Le Play's *Les ouvrières européens*, Sir Frederick Morton Eden's *The State of the Poor* (1797), and Engel's idea of *quets* or consumption units.⁷⁷¹ Figuerola might have been aware in 1935 of Bowley's *Elements of Statistics*, cited after 1935.⁷⁷² This chapter suggests that there was also an increase in Figuerola's knowledge as he worked on the CLI, which suggests a learning-by-doing experience. His 1942 book was where he condensed all this and the existence of the 1935 complementary survey was evidence of this process.

González Bollo praises Figuerola's book arguing that for the ILO it was the only reference in Spanish that dealt with the ICLS,⁷⁷³ implying that it was a unique and authoritative book. However, it would seem that other reasons are behind this. The book was only quoted in a Spanish ILO publication, but not in the English equivalent.⁷⁷⁴ Moreover, Figuerola himself sent four copies of his 1942 book to the ILO. It was in part cited, then, simply because it was in the ILO library. Moreover, Robert Guye, an ILO official statistician who worked on housing and wage statistics and was an honorary member of the Argentine Society of Statistics (*Sociedad Argentina de Estadística*), wrote the prologue of Figuerola's

⁷⁷¹ For other influences see González Bollo, 'La estadística pública', p. 230.

⁷⁷² DNT, 'Condiciones', p. 25; Figuerola, *Teoría*, p. 232.

⁷⁷³ González Bollo, *La fábrica*, p. 208.

⁷⁷⁴ See the differences between ILO, 'La estandarización internacional de las estadísticas del trabajo', *Estudios y Documentos*, Serie N (Estadísticas), 25, 1943, p. 8 and ILO, 'The International Standardisation of Labour Statistics', *Studies and Reports*, Series N (Statistics), 25, 1943.

book.⁷⁷⁵ He encouraged its citation because he believed that it would help the missions he was carrying out in Latin America at the time, as well as being an advertisement for the ILO, given the way Figuerola publicised the organisation's work.⁷⁷⁶ This also provides evidence of Figuerola's understanding of the international arena, particularly the importance of the ILO and the need to be part of that international sphere to legitimise himself and his work.

Figuerola acknowledged that because the ultimate aim of his work was to make international comparisons, the basic elements of the budget must be clear and concise, "to avoid harmful confusions or misunderstandings".⁷⁷⁷ For him it was very important that when estimating a new CLI, the procedure followed and the methodology behind it were explained in detail. However, it took him almost ten years to accomplish this. Aware of the international standards and developments, Figuerola was capable of developing an index and thus he was an important asset within the DE. He adopted and adapted international guidelines to the local context and circumstances. Consequently, Figuerola's choices were generally made not due to lack of knowledge, but due to other constraints. In other cases, choices – which should have been made on the basis of specific knowledge – were taken arbitrarily or with little scrutiny, such as the decision to base the *presupuesto teórico* on the lowest wage of m\$120 and a family of a couple and two children.

Conclusion

In Argentina throughout the 1930s, industrialisation and urbanisation intensified and statistics and economics became acknowledged as disciplines. After the Great Depression, Daniel argues that statistics sought the common good and safeguarded collective interests. Statisticians highlighted their usefulness, their efficiency and their professionalism in contrast with the illegitimacy of Justo's administration.⁷⁷⁸ Influenced by corporatist ideology and aware of the importance the ILO was gaining, Figuerola, like Bunge, believed in the neutrality and objectivity of numbers. Under his tenure, the DE became a regular collector of information on the working class, leading to the start of its *belle époque* and institutional metamorphosis. As the economy was changing, the data was part of the greater aim of making up the working class as a social and economic actor and thus helping construct a new

⁷⁷⁵ P.Y. Saunier, 'Borderline Work: ILO Explorations into the Housing Scene until 1940' in Van Daele et al. (eds.), *ILO Histories*, p. 204; P.Y. Saunier 'The ILO as Organizer: Shaping the Transnational Housing Scene in the 1920s', paper presented at the conference The ILO: Past, Present, Future, Brussels, October, 2007, <https://halshs.archives-ouvertes.fr/halshs-00270557/document> (accessed on December 06 2015).

⁷⁷⁶ ILO, ST, 5/1, Letter from R. Guye to W. Carlton, 30 June 1942.

⁷⁷⁷ Figuerola, *Teoría*, p. 282, author's translation.

⁷⁷⁸ Daniel, 'Una escuela', pp. 62, 70.

image of the nation. Building on Bunge's embryonic macroeconomic vision, socio-labour information helped develop solid arguments about the advantages of providing greater purchasing power to wages as a pillar of an expansionary economic policy. Hacking claims that statistics are gathered to exert control.⁷⁷⁹ It is along these lines that the DE project, in which the monthly 1933 CLI played an essential role, must be understood. The index became a crucial indicator to establish workers' purchasing power, as wage data was not gathered as systematically. This scenario helps understand why its elaboration, unlike the comprehensive price index, was encouraged by a presidential decree that was part of Justo's aim to normalise the national statistical system. Also contrasting with Bunge's indicator, the 1933 CLI was a socio-labour statistic elaborated due to local needs that were conceived as neutral descriptions of reality that contributed towards achieving social justice. Thus, the index had to be trusted and robust. Its methodological renewal and regular updates also gave legitimacy to the DE, which meant it and the DNT gained social visibility and political recognition through the links established with the working class. As González Bollo demonstrates, the amount and detailed information on the working class became crucial in the years after Perón transformed the DNT into the STyP and developed his political project.⁷⁸⁰ In that regard, as Porter argues,⁷⁸¹ statistics, perceived as objective knowledge, give authority to those that do not have them for themselves, at least in the very beginning.⁷⁸² The bulk of quantitative information on the working class gave Perón the knowledge needed to deal with its distrust. Consequently, this chapter suggests that Figuerola's leadership was a watershed in the history of the DE and had an important influence in later years.

The 1933 CLI was based on Argentina's first family budget enquiry. It was 'scientific', as it was grounded heavily on that empirical information. The recently established CGT backed the estimate from its launch in 1935, and it was eventually published in the *ILR*. The 1933 indicator is a turning point in the history of Argentina's CLI because it filled the vacuum generated by the irregularity of the comprehensive price index, overcoming the latter's sombre years. As the 1933 index was a substantial step forward relative to its predecessor, it is re-named here the first Argentine CLI. This re-categorisation relates also to the way it was treated by the DE, its embeddedness within the national statistical system, and the influence of the ICLS, which was seen in the use of its technical vocabulary.

⁷⁷⁹ Hacking, *The Taming*.

⁷⁸⁰ González Bollo, 'La estadística pública', p. 261.

⁷⁸¹ Porter, *Trust*, p. 8.

⁷⁸² This does not mean that Perón did not eventually gain authority. The period of analysis of this thesis is just before his government, so the idea that the socio-labour statistics gave Perón authority applies to the period when he began to construct it.

Notwithstanding a brief reference to how Figuerola developed it, mainly related to it as a standard of living measure, no detailed analysis has previously been made of the methodology, meanings and problems of the 1933 CLI and the estimates have travelled in time without being questioned. That gap has been filled in this chapter. As with the comprehensive price index in Chapter IV, a de-construction of several publications, and not just an analysis of the 1935 DNT report, is needed to understand it. Among the most relevant pitfalls described here, one recognised early on was that it was based on a budget survey for a single month, which encouraged the DE to carry out the 1935 yearlong enquiry. Another problem is that the monetary condition of the *presupuesto teórico* aimed at capturing the preferences of those earning m\$120. The evidence compiled here demonstrates that such a sum did not portray the lowest budget, as Figuerola wished it to. There was, moreover, no information about the techniques used to carry out the survey. Figuerola admitted that there was a ‘narrowing down process’ of cases, but this research suggests that his justification of the reasons behind the process was not convincing. Other explanatory factors have also been highlighted: the lack of funds and human resources to process data, the poor training of the team in charge of distributing the booklets, the insufficient or incompatible answers received, the agenda of labour unions and professional associations that handed out the survey, and the urgency to estimate a CLI after its sombre period. Perhaps most importantly, using different sources, practically all available to Figuerola, this chapter proves that a household formed by a couple and three children was not the representative family structure of the City of Buenos Aires in 1933.

Figuerola, a Spanish national, arrived in Argentina with experience as a civil servant and knowledge of the international *status quo* of socio-labour statistics. He influenced the project of making up the working class and the development of the 1933 CLI from the start, despite not being officially named DE head until 1934. This chapter has found that Figuerola always wanted to establish a standard, average budget, not a theoretical one. Hence, the methodological choices he made when constructing the 1933 CLI were not due to a lack of knowledge. Like Bunge, Figuerola adopted and adapted guidelines to existing constraints, making sometimes pragmatic decisions. This is clear from the analysis of the ICLS resolutions. He also learned by doing, which highlights the importance individuals’ judgments’ have when constructing statistics and the need to adjust to circumstances. To understand the choice of the demographic condition of the *presupuesto teórico*, different CLIs were elaborated here. The trend of these indicators suggests that the decision related to the lower value of the budget for a household of five. In Figuerola’s defence, perhaps he

intended to align the CLI of the working class of the City of Buenos Aires to a family structure similar to that of the country as a whole, following the census data in Figure 22, due to the inexistence of a national CLI. Yet, unlike Bunge, he did not argue for a national index. More importantly, based among other things on the information of the relatively regular expenditure surveys of the DE that was compiled in Figure 25, he must have realised that the census data was out of date. It would seem, therefore, that the *presupuesto teórico* was a biased selection, both monetarily and demographically, in that it only showed the impacts of price variations on a small segment of a very specific group of individuals, and as such it contained basic goods in quantities that were too small.

Much as Bunge had done with Bowley, there was a careful referencing of articles and a selective compliance with ICLS resolutions. The early statistical conferences and the PCNE were similar to the ISC: the analysis of ICLS resolutions shows that they focused on statistics as a numerical science of facts rather than on mathematical methodology, although the PCNE did also emphasise those aspects. Since procedures were not the main concern, Figuerola had room to adapt the ICLS resolutions to the needs and constraints he experienced. The PCNE was mentioned as an antecedent, but Bunge's CLI was barely referenced. Why the difference? Bunge's index had no continuity and no ILO recognition. This chapter has suggested that mentioning it as a forerunner was perceived as a step backwards. The little influence the PCNE had on the Argentine CLIs suggests that it was only relevant as an institutional antecedent to the 1933 index: it was mentioned to place the 1933 within the national statistical system.

Relative to Bunge's estimate, the 1933 CLI gave priority to statistical rather than theoretical antecedents. The 1933 CLI had an administrative/government purpose and objectives; it was an act of government, rather than a mathematical construction. However, according to Figuerola, it followed a mathematical rationale. The merging of the norms of the nascent science of probability and the bureaucratic order imparted by the guidelines of the public sector outlined by Desrosières became recognisable.⁷⁸³ This suggests, once again, the embeddedness of the CLI in the national statistical system; it was part of the whole.

In contrast to the comprehensive price index, the first Argentine CLI did not have a sombre period. Why? Trust, for Porter, is mainly impersonal.⁷⁸⁴ Hence, the association between the CLI and the DE, instead of between Figuerola and the index, contributed to its legitimacy and endurance in time. Unlike Bunge, Figuerola's name did not appear in the

⁷⁸³ Desrosières, *The Politics*.

⁷⁸⁴ Porter, *Trust*, p. 74.

DNT reports even if he wrote them. Due to the endorsement of the CGT, the 1933 indicator was accepted by the working class. In Porter's terms, it began to give "direction to the very activities that are being measured".⁷⁸⁵ Following Porter, the DE's gathering of socio-labour statistics made individuals governable. As Curtis argues,⁷⁸⁶ the data gathered, particularly the CLI, led to investment in statistical forms and the working class became an actionable object. That is, the CLI was trusted, it held and public policy could be directed towards the working class. However, the infrastructural work behind this process had several pitfalls. The 1933 indicator transcended the domestic arena and was referenced abroad. Unlike the comprehensive price index, it reached the ILO because Figuerola was aware of its importance. He actively pursued and built a relationship with ILO correspondent Migone. This bond, in turn, proved successful. It contributed to Figuerola's appointment as head of the DE.

The literature suggests that there was a change in the ILO's approach towards Latin America at the beginning of the 1930s, which was fostered by Thomas and his successor as the ILO's director, Harold Butler. The relationship between Figuerola and Migone brings a new dimension to this shift, as it focused on the dissemination of knowledge and the use of connections to legitimise positions and to encourage trust in numbers. This link shows that Migone acted with a certain level of independence from the ILO mandate to influence his professional career.⁷⁸⁷ Also, together with the existing literature, this chapter has shown how shifts existed in the way Argentina approached the ILO. Encouraged partly by the Migone/Figuerola link, the change in the ILO/Argentine relationship implied a shift in the attitude of both parties. The establishment of an official correspondent and the different missions that travelled to Argentina must be understood within the context of the Argentine project of making up the working class.⁷⁸⁸ Specifically in the case of socio-labour statistics, the changes were of mutual benefit for Figuerola, Migone and the ILO/Argentine relationship. The publication in the *ILR* of the 1933 CLI endorsed and advertised it and so did the reference to the 1942 book in ILO publications, giving it and Figuerola's work international recognition. In his publications, Figuerola advertised the ILO, quoting the ICLS as an antecedent. In November 1933 the ILO had received information that Argentina was

⁷⁸⁵ Ibid., p. 45.

⁷⁸⁶ Curtis, *The Politics*.

⁷⁸⁷ See N.O. Ferreras, '¿El inicio de una larga amistad? Los primeros pasos en la relación entre la OIT y la Argentina (1931 a 1937)', paper presented at XXI Jornadas de Historia Económica, Caseros, 23-26 September 2008, p. 8.

⁷⁸⁸ The success of Lawford Childs' mission to Argentina, Brazil and Uruguay in 1934 triggered others in the 1930s, see Ferreras, 'La misión'.

conducting research into the cost of living.⁷⁸⁹ In December 1934, before it was released in Argentina, Migone sent Butler, “complete original information on the research on the cost of living”, acquired by “special deference”.⁷⁹⁰ Figuerola’s preferential treatment favoured Migone,⁷⁹¹ which, in turn, impacted on the relationship Figuerola had with the ILO.⁷⁹² The latter’s public recognition of the 1933 CLI and the links Figuerola established with its members can be interpreted as part of his insertion strategy in the state.⁷⁹³ His appeal to the international sphere positioned him better within the state and among his peers, as he appeared to possess unique and valuable expertise.⁷⁹⁴ This is also seen in the different projects Figuerola was involved in; he had a plan, as was commented on in Chapter III. Thus, the ILO contributed to the legitimisation of the DNT not only from the legislation perspective, but also from the research and statistics standpoint.

The CLI was conceived as a powerful tool to understand the living conditions of the working class and design social policy, in the search for social justice. Its scientific character provided workers with evidence to put forward their own arguments, apart from being a tool that contributed to their visibility and perception of themselves, *à la* Hacking. Employers used it to counteract workers’ demands. The index became a legitimate source of political dispute and a basis of objectivity for discourse. In turn, its use provided it with recognition and support. As Daniel argues, the characteristic that stands out during this whole period is the support from the CGT, despite the lack of participation its members had in the DE’s decisions.⁷⁹⁵ This chapter has contributed to that analysis. In adapting to the Argentine reality his previous experience and knowledge, Figuerola inaugurated a “subtle nexus” between the DNT and the working class.⁷⁹⁶ This connection was based on the relationship the DE had established with the CGT. The latter’s leadership became “an important ally” of the DE, as it

⁷⁸⁹ ILO, Statistics, T 102/0/2, Información del costo de la vida en la Capital Federal.

⁷⁹⁰ ILO, Statistics, T 102/0/2, Letter from R. Migone to H. Butler, 7 December 1934.

⁷⁹¹ Migone’s conflicting relationship with Saavedra Lamas and Unsain, both close to the ILO, eventually cost him his job as correspondent, Ferreras, ‘O Premio’.

⁷⁹² Migone was relieved of his correspondent duties and travelled to Geneva in May 1936. The relationship with Figuerola persisted, ILO, Statistics, T 101/2, Letter from J. Figuerola to R. Migone, 7 May 1936; ILO, Statistics, T 101/2, Letter from R. Migone to J. Figuerola, 4 June 1936.

⁷⁹³ The pinnacle of Figuerola’s career as a government economist was during the first Peronist mandate, becoming part of the administration’s ‘intermediate leadership’ between the masses and Perón, see Delgado, *Hispanoamérica*; González Bollo, ‘Retomando’; González Bollo, *La fábrica*, pp. 219-49; Rein, ‘Los hombres’.

⁷⁹⁴ This strategy was followed by Argentine labour experts like Unsain in the 1920s and 1930s, see Caruso, ‘La política’.

⁷⁹⁵ Daniel, ‘L’objetivation’, pp. 183-4.

⁷⁹⁶ González Bollo, ‘José Francisco Figuerola’, p. 19.

backed it in the face of workers' objections.⁷⁹⁷ The discrepancies between workers and the CGT regarding the index show that it was much more valued by the latter than the former.⁷⁹⁸

The characteristics of the 1933 CLI suggest that while the DNT's project aimed at understanding the working class as a whole, the index reflected the characteristics of a particular kind of worker: the poorest working class family.⁷⁹⁹ This chapter has inferred that this specificity generated a more successful process of invention of statistical forms compared to Bunge's CLI because it deliberately wanted to portray the working class. The change in the main use of the indicator had a crucial role in its legitimacy and permanence as an indicator of the national statistical system. However, the *a priori* choice to base it on the family with the lowest budget and the selection of a specific family structure also influenced the assessments made about the working class. Thus, on the basis of his quantitative research, Figuerola claimed in 1961 that "workers were in a situation of misery between 1930 and 1943".⁸⁰⁰

The March 1943 proto-indexation project suggests that statistical knowledge had "sufficient social authority to establish a rational government principle".⁸⁰¹ The national statistical system was ready to put in place a predictable depoliticisation mechanism. The Argentine CLI had come a long way to be perceived finally as an objective and impartial tool that depicted the working class. Following Desrosières,⁸⁰² the index had an established administrative and scientific position. The coup of June 1943 altered this path, depicting once again how statistics is shaped by context.

⁷⁹⁷ The CGT was involved in the CLI, wage and unemployment statistics, see Daniel, 'L'objetivation', p. 184.

⁷⁹⁸ Ibid., p. 186.

⁷⁹⁹ Daniel also shows this, but for surveys developed from the 1960s onwards, Daniel, 'Modernización'.

⁸⁰⁰ Figuerola, *El gran movimiento*, p. 33, author's translation.

⁸⁰¹ Daniel, 'L'objetivation', p. 197.

⁸⁰² Desrosières, *The Politics*.

Chapter VI - Re-constructing the Argentine CLI

Sociology of quantification scholars argue that context influences national statistical systems and the numbers they produce. This implies that there are no exceptions *per se* because the trajectories of CLIs are shaped by the environment they are developed in, despite the quest for standardisation. This thesis has demonstrated how this principle also applies to different indices within a country: each national cost of living estimate is shaped by the specific social, economic and political environment in which it is produced and also by the knowledge and aims of the individuals that design it. Unlike sociology of quantification investigations, statistics are seen here as historical resources that should be analysed using the de-construction/construction/re-construction methodology. The previous two chapters have de-constructed and constructed Bunge's estimate and the 1933 CLI. This chapter closes the circle by engaging in its re-construction, which has two phases. The first is the re-construction of the Argentine CLI for the period 1912-1943, following the same principle as before: the data that is used was available to Bunge and Figuerola. The re-construction builds on the understandings on the methodological pitfalls discovered in the de-construction and construction phases to elucidate the divergences between the official and the re-constructed estimates, as the latter are produced by adjusting for the issues previously assessed. The focal point of this part of the re-construction is to understand why the discrepancies between the series exist, which in turn sheds more light on the history of the Argentine CLI. The three-step methodology proposed in this research implies that the re-construction phase is a superseding stage, a conclusion before the conclusion. As such, the elaboration of a new series can only make sense if accompanied by an analysis in tandem of the characteristics of the Argentine, US, British and German CLIs of the first half of the twentieth century. This provides not only more insight into the history of the Argentine estimate, but, more importantly, contributes to the understanding of CLIs as a whole. It also generates more evidence of the importance of case study analyses.

How do the corrections of the pitfalls of Bunge's and the 1933 CLIs affect the index? When do substantial differences occur between the re-constructed series and the official estimate? What do the differences imply? What does the analysis of the Argentine CLI in tandem with its US, British and German counterparts suggest about the history of CLIs? To answer these questions, the first section of this chapter engages in the re-construction of the

Argentine CLI by presenting new estimates. It is followed by the joint analysis of the US, British, German and Argentine indices. The last section concludes.

Re-constructing the Argentine CLI through different estimates

The re-construction of the Argentine CLI is carried out in several stages. It begins by producing and assessing re-constructed estimates for Bunge's index for the period 1912-1932. This is followed by the generation and appraisal of re-constructed 1933 CLIs for the years 1933 to 1943. The aim behind presenting series for both indices is to re-produce them as closely as possible to the original numbers, so as to focus on the effect of the different assumptions made. The section finishes with the presentation and evaluation of new long-term cost of living estimates that extend between 1912 and 1943. All the series are compared to the official index; that is, the one used in the historiography, which, for different periods, follows the procedures developed by Bunge (1912-1932) and the DE (1933-1943).

Since the core of the explanation of the divergences is the way in which the estimates are re-constructed, the analyses are not heavily influenced by the series' base years. The most significant gaps occur in 1919 and 1924. For that reason, the sub-section on the period 1912-1932 is longer. As has already been explained, the estimates begin in 1912 for two reasons: the IE rent price series, a crucial piece of data in the re-constructed estimates, commences that year. Also, the existence of official retail prices is rather sketchy for 1910 and 1911 for many goods, as was explained in Chapter IV. It ends in 1943 because that was a turning point in the history of the Argentine statistical system. Detailed information about how the series are generated and the re-constructed numbers are found in the Appendix.

Re-constructing Bunge's CLI, 1912-1932

In most of his publications, Bunge presented all his calculations. On the basis of that information, the lack of change in the expenditure structure and thus in the weights of the sub-indices, and an actual splicing of the series, Bunge's index was re-assessed in Chapter IV. As a consequence, the corrected share change series renders a cost of living index that is 11.1 index points higher than the official series for the period 1910-1923, while the corrected no share change estimate presents a gap of 4.8 index points. Both corrected indices are sounder than Bunge's because they factor in those pitfalls. Despite the adjustments, however, those corrected series are still based on wholesale prices and the rent series did not reflect the housing prices of the City of Buenos Aires. Chapter IV demonstrated that, despite what

Bunge claimed, wholesale and retail prices did not move together. It also argued that the rent sub-index of the official estimate did not reflect the prices of the City of Buenos Aires. Two re-constructed estimates amend those issues and also include the splicing and the share changes, extending between 1912 and 1932. The annual variations of the other expenditure sub-index, which reflected the prices of Argentina's total imports, vary slightly between the two re-constructed series and the official one used by Bunge, as his numbers do not extend after 1926. Thus, another official import price index series is used.⁸⁰³ The re-constructed series are depicted in Figure 30, together with the official index. Figure 29 summarises the traits of the three series.

Figure 29: Main differences between the re-constructed estimates of Bunge's CLI

Name of series	Prices of food sub-index	Prices of rent sub-index	Other expenditure sub-index	Splicing of series after sub-indices alteration?	Sub-index structure
Spliced re-constructed index	Retail	Room in City of Buenos Aires (IE series)	Re-worked official series	Yes	50-20-30 for 1912-1918; 50-24-26 for 1919-1932
Unchanged re-constructed index	Retail	Room in City of Buenos Aires (IE series)	Re-worked official series	Yes	50-20-30 for 1912-1932
Bunge's CLI (official)	Wholesale	Not City of Buenos Aires, probably not a room (Bunge's series)	Bunge's official elaboration	No	50-20-30 for 1912-1918; 50-24-26 for 1919-1932

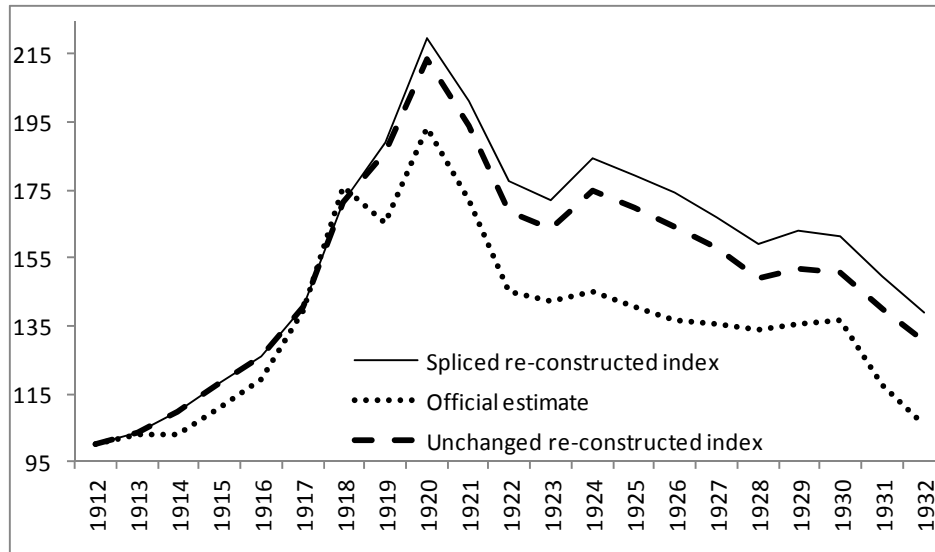
Note: In the sub-index structure, the numbers refer to the food-rent-other expenditure sub-indices.

Source: author's elaboration. See Appendix.

⁸⁰³ See the Appendix for more details.

Figure 30: Re-constructed estimates of Bunge's CLI, 1912-1932

Base: 1912=100



Source: author's estimates. See Appendix.

Between 1912 and 1918, the re-constructed series of Bunge's CLI are identical. From 1919 onwards, following Bunge's procedure, the spliced re-constructed index has an alteration in the shares of the three sub-indices: from 50-20-30 for food, rent and other expenditure respectively to 50-24-26. The unchanged re-constructed index maintains the 50-20-30 shares due to the evidence presented in Chapter IV that signalled that expenditure proportions actually remained stable throughout the 1920s. That is the only difference between the two re-constructed series of Bunge's CLI and explains their divergence after 1918. Both use the rent data from the IE, the same retail prices and the same import price index in the other expenditure sub-index. Except for 1918, the re-constructed indices always exceed the official estimate, as Figure 30 depicts. The latter increases by 5.6% between 1912 and 1932, while the re-constructed Bunge CLIs rise more: the unchanged re-constructed index increases by 30.7% and the spliced re-constructed index by 38.9%.

The three estimates move relatively closely together until 1918. The difference between the re-constructions of Bunge's CLI and the official series ranges from 0.5 index points in 1913 to 7.4 index points in 1915. Given that for those years the other expenditure sub-index is almost equal and the weights are the same for the three estimates, the differences come mainly from the food and rent sub-indices. The discrepancies show that until 1916, retail food prices and/or the rent of a room in the City of Buenos Aires increased more sharply than their wholesale equivalent or the official rent sub-index. This follows the evidence on types of food prices and the rent series analysed in Chapter IV. As the official series caught up with the re-constructed estimates of Bunge's CLI in 1917 and 1918, the

opposite occurs later on. In 1919 the official series declines by 6.2%, while the spliced re-constructed index rises by 9.9% and the unchanged re-constructed series increases by 8.2%, leading to a gap of 23.6 index points between the official and the first re-estimate and of 20.7 index points when compared to the second. From then on, the discrepancy widens, reaching a value of 39.7 index points in 1924 in the former case and 30.2 index points in the latter.

From 1924 to 1928, Figure 30 indicates a steady decline in all three estimates, especially in the re-constructed series. As explained, this was one of the factors behind the sombre period of the Argentine CLI, as that drop meant there was no longer a great urgency to measure prices. In those years, pushed by the drops of 8.4% in the food sub-index, 10.2% in the rent and 28.9% in the other expenditure sub-index, the spliced re-constructed series declines by 13.7% while the unchanged re-constructed CLI drops by 14.9%. The official estimate declines by 7.5%. The sharp drop between 1930 and 1932 follows the evolution in international prices, which was a consequence of the Great Depression. The more pronounced declines in the official and the spliced re-constructed series shows the greater impact of the decline in rent, as in them that sub-index had greater weight.

Some years are crucial in the comparison of the re-constructed estimates of Bunge's CLI and the official series. In 1924 the spliced re-constructed index increases by 7.2% year-on-year, the unchanged re-constructed estimate by 7.1%, while the official index rises by just 1.9%. As before, the discrepancies mainly proceed from the other two sub-indices but also from the differential impact the variation of the other expenditure sub-index had due to the change in shares as well as its slightly different value. Looking at the re-constructed series, the rent of a room in the City of Buenos Aires declines by 4.5% in that year. The retail price of meat jumps by 39% while bread rises by 12.9%. The other food items component increases by 17%. Overall, in the re-constructed series, the food sub-index jumped by 22.2%. In the official series, the rent sub-index did not vary and the food sub-index increased by 2.8%.⁸⁰⁴ While in the official estimate the other expenditure sub-index rose by 1.6%, in the re-constructed series it dropped by 3.8%, counterbalancing the other differences. The discrepancies in the values of the food and rent sub-indices and the differential impact of the rent and other expenditure sub-indices due to the share alteration show how the use of retail prices instead of wholesale prices and the share changes result in different estimates.

⁸⁰⁴ In the 1928 *REA* publication, detailed information on how the food sub-index was estimated was not provided, which hinders a more detailed analysis of the variations of the CLI components, Bunge, 'El costo', pp. 202-3.

Chapter IV suggested that the decline in the official series in 1919 relates to the way the official estimate was not spliced after Bunge's decision to change the shares of the sub-indices. This was an alteration that, Chapter IV argued, had no empirical ground because the surveys taken throughout the first half of the 1920s did not portray any variations in working class expenditure; rather, it was kept in the 1924 DGEN publication to obtain lower results. Chapter IV demonstrates that just by splicing the series, prices remain almost stable between 1918 and 1919, instead of falling. In Figure 30 the behaviour in the official series contrasts with the annual increases in the re-constructed estimates. Additionally, given that the official 1920 value was estimated following the 1919 procedure, the 1920 annual increase in the official series is 17.2%, compared to a rise of 16.3% in the spliced re-constructed index and of 15.1% in the unchanged re-constructed estimate – all relatively similar values that further substantiate the claim that the 1919 divergence in Figure 30 related to the official series not being spliced. Why was the official series not correctly spliced in order to bring about a lower estimate? To begin with, if the contradictions in the *REA* and DGEN articles are recalled, the deviation between the official and the re-constructed series is not entirely surprising. In the 1919 and 1920 *REA* articles that updated the initial journal article, the alteration in the shares occurred in 1918, justified by the 30% rise in rents. As a consequence, in 1919 the CLI increased,⁸⁰⁵ showing an opposite trend to the official series in Figure 30. The 1924 DGEN report (the first update since 1920) and the 1928 *REA* piece, however, placed the change in 1919, which resulted in a year-on-year decline in 1919. These opposite variations help explain the aforementioned inconsistencies. Moreover, 1919 was the year of the social uprisings of the *Semana Trágica* mentioned in Chapter III, which, together with similar subsequent episodes,⁸⁰⁶ were a sign of President Yrigoyen's weakness. Given its repercussions,⁸⁰⁷ and the labour conflicts that followed,⁸⁰⁸ this thesis argues that the lack of splicing in the 1924 official publication of the CLI and the year chosen for the alteration in the sub-indices' shares were responses to these political events. Even if in 1919 and 1924 the presidents and administrations were different, they were part of the same political party, the UCR, and lower increases in the cost of living in periods of social conflict gave different

⁸⁰⁵ Valle and Ferrari, 'Costo', p. 261.

⁸⁰⁶ Among the most relevant are the strikes in the province of Santa Cruz that occurred between 1920 and 1922, known as *Patagonia rebelde*, O. Bayer, *Los vengadores de la Patagonia Trágica*, Buenos Aires, 1974.

⁸⁰⁷ For example, the *Liga Patriótica*, a paramilitary organisation that grouped reactionary sectors of Argentine society, surged after the events of the *Semana Trágica*, Rock, *El radicalismo argentino*.

⁸⁰⁸ In early 1924, for instance, the main workers' unions called for a general strike to protest against the Pensions Act proposed by the Executive, L. Anapios, 'La ley de jubilaciones de 1924 y la posición del anarquismo en la Argentina', *Revista de Historia del Derecho*, 46, 2013, pp. 27-43.

meanings to the uprisings. Considering solely the evolution of the CLI, the prolonged conflict and its extension to other parts of the country suggest, for example, general discontent with the Radical administrations, as prices declined sharply between 1920 and 1923 in the City of Buenos Aires, as Figure 30 illustrates. It can also be considered further evidence of the disparity in the evolution of prices across the country, which is not reflected in a CLI based on price fluctuations in the City of Buenos Aires. These regional divergences were presented in Chapter IV, where it was demonstrated that, despite what Bunge claimed, prices varied differently across the country. As for the need to present a lower index, it seems that it would have been simpler to just lie about prices.⁸⁰⁹ However, prices were released in official publications, so they could be easily contrasted with reality. Thus, the option in the 1920s appears to have been to minimise relative price movements through particular methodological decisions.

Figure 30 shows that the lack of an appropriate splice is at the core of the divergence between the official and the re-constructed Bunge indices, but the types of prices used also have an influence. The re-constructed series are a clear example of how different assumptions – regarding the types of prices used as well as the alteration in the shares of the sub-indices – impact on the results. It is also argued here that the initial decision regarding the year in which to change those shares was changed for political reasons, despite the evidence that existed that contradicted the need for such an alteration. Moreover, following more truthfully Bunge’s procedures, as presented in the spliced re-constructed index, results in a series that diverged even more from the official one. In that respect, the unchanged re-constructed Bunge’s index seems preferable, as DNT expenditure surveys of the 1920s show that rent expenditure did not increase as Bunge assumed.

Re-constructing 1933 CLIs, 1933-1943

Chapter V demonstrated that a household formed by a couple and three children, used by Figuerola as the basis of the 1933 CLI, was not the typical family structure in the early 1930s in the City of Buenos Aires. To be consistent with the October 1933 budget survey data and given the evidence of the 1936 census of the City of Buenos Aires, the 1933 CLI should consequently be based on a family formed by a couple and two children. Thus, the re-constructed estimates of the 1933 CLI use the preferences of that type of workers’ households. Moreover, families whose head of household received between m\$120 and

⁸⁰⁹ As the Indec has done, at least, between January 2007 and January 2014.

m\$230 and not just those earning the lowest wage – which allows for a sample of 46 families instead of 10 – are considered, although, as shown in the Appendix, no substantial difference existed between the indices for the lowest earning households of a family of four and for an index that uses the budget information of the 46 families. The existence of the rent series elaborated by the IE, used in the re-constructed estimates of Bunge’s CLI, as well as a DNT series for rent prices of a room in the City of Buenos Aires, allows the re-construction of two different 1933 indices, which are shown in Figure 32. Figure 31 synthesises the traits of the three series.

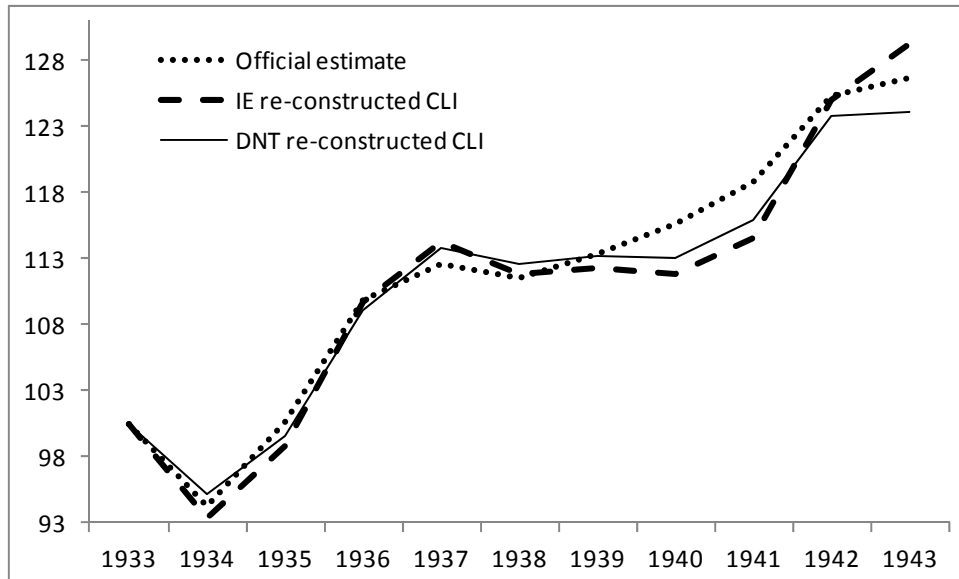
Figure 31: Main differences between the re-constructed estimates of the 1933 CLI

Name of series	Family structure used as basis	Number of households used as basis	Monetary condition	Rent sub-index data source	Sub-indices considered
IE re-constructed index	Couple and 2 children	46	m\$120- m\$230	IE data	Food, rent, general expenses
DNT re-constructed index	Couple and 2 children	46	m\$120- m\$230	DNT data	Food, rent, general expenses
1933 CLI (official)	Couple and 3 children	4	m\$120	DNT data	Food, rent, general expenses, and clothing

Source: author’s elaboration. See Appendix.

Figure 32: Re-constructed 1933 CLIs, 1933-1943

Base: 1933=100



Source: author's estimates. See Appendix.

Throughout the whole period, and in contrast to Figure 30, in Figure 32 there are no substantial differences between the estimates, especially up to 1939. The discrepancies between the official series and the DNT re-constructed CLI are due to the goods and components not considered in the latter estimate, given the lack of data, as well as the consumption preferences of the different family structure chosen as the basis of the series.⁸¹⁰ The differences between the two re-constructed estimates relate solely to the value of the rent component, as they are based on the same family structure and goods. The different trajectories of the re-constructed series of the 1933 CLI contradict the IE's statement that its numbers were the same as the DNT's. As a consequence of the procedures followed, the official series rises by 26.3% between 1933 and 1943, while the DNT re-constructed CLI increases by 23.6% and the IE re-constructed CLI by 28.7%. For the whole range of the period, in 60% of the years, the official series present the highest value of the three. During half the years, the IE re-constructed CLI shows the lowest index of the series.

Up to 1939, the three series move closely together: they present similar values because they follow the same trajectory. That is, none of the three has a permanently higher or lower value than the others. As demonstrated in Chapter V, a CLI based on a family of five results in lower monthly variations than the same estimate for a family of four throughout most of 1934. It was argued that it is due to this trend that Figuerola chose to base the 1933

⁸¹⁰ Both re-constructed series of the 1933 CLI exclude the clothing component and some food items. See the Appendix for the details.

CLI on a family of five rather than on a representative household structure. This helps explain the discrepancy between the official and the DNT re-constructed CLI that year. The sharper decline in the IE re-constructed CLI is linked to the 4.1% drop in the rent estimated by the institute, a price that remained constant according to the DNT. In fact, the official value of rent remains stable until 1937, which explains the differences between the two re-constructed series.

It is only from 1939 that the official series presents higher values than the other two, with the exception of 1943. In 1940 and 1941 the biggest discrepancies exist between the re-constructed series and the official one. The 1940 gap relates to the 11.3% increase in clothing, which was reflected in the 2% rise in the official series, while the two re-constructed estimates, which do not have that component, decline. That was because, with the onset of WWII, manufactured goods had higher price variations than food and rent. In 1941 all three indices experienced increments of a similar magnitude; the official one by 2.7% and the other two by 2.6%. In that year, these increases were due to the rises in the price of certain food items, such as rice, meat, potatoes, flour, and cheese, which are included in all the estimates. In 1942 all three series rose sharply. The highest yearly variation is in the IE re-constructed CLI due to the 5.1% increase in rent, while the DNT rent series remains static. The 1942 increase in the three estimates is linked also to the escalation in the value of food items, such as meat, legumes, eggs, coffee and sugar. In 1941 and 1942, as the war continued, food rather than manufactures seemed to trigger the increase in prices. The big jump in 1943 of the IE re-constructed CLI, which raises it above the two other series for the second time in the period, resulted from the 6.4% rise in rent. According to the DNT, that year rents decreased 4.9%, following the new rent control mechanism put in place by the government. Thus, it is inferred that either that mechanism was not effective or its effects impacted upon the 1943 rent prices.

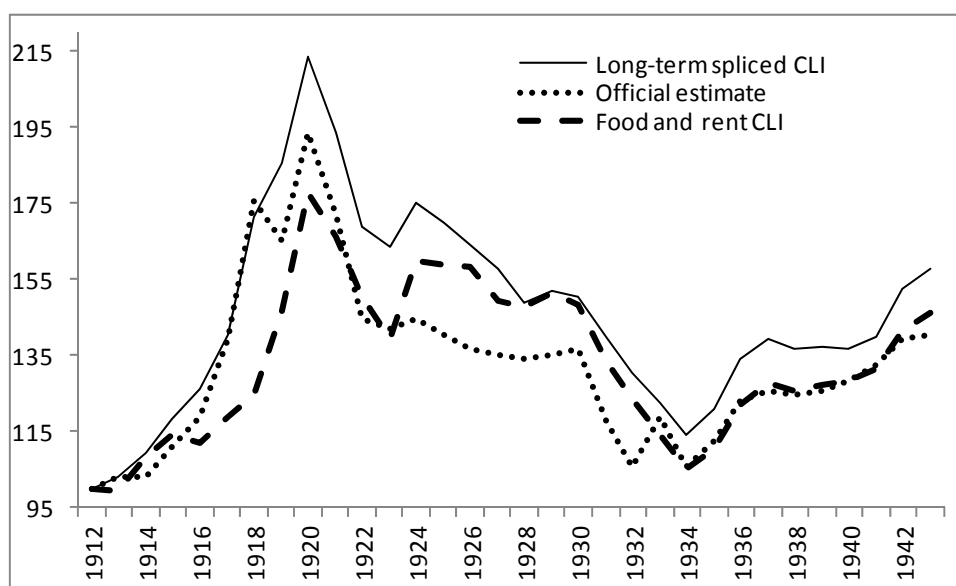
What the three series in Figure 32 confirm once again is that the choice of the family structure used as the basis of the CLI impacts on the results. This was also the case regarding the range of components considered and due to the prices chosen. In this latter case, the discrepancies due to dissimilar prices are seen only between the two re-constructed indicators of the 1933 CLIs. That particular price differential also shows the contrast between actual prices paid – the IE estimate – and the ones the government assumed people were paying or wanted individuals to pay – the DNT series.

New long-term cost of living estimates, 1912-1943

This section so far has presented several re-constructions of Bunge's CLI and of the 1933 index, using different data and/or based on different assumptions. These re-constructed series are estimated for the period each indicator was developed for initially. A long-term index is needed, however. With the information already considered and the series presented above, two long-term estimates can be elaborated. The long-term spliced series in Figure 33 is a combination of the unchanged re-constructed CLI and the IE re-constructed index. The food and rent estimate is solely based on the retail prices of 14 food items, rent, kerosene and charcoal, combining Bunge's methodology without the sub-index share change (1912-1932), given the evidence of Chapter IV and Figuerola's for the 46 workers' families formed by a couple and two children (1933-1943).⁸¹¹ Its purpose is to ground it on the same goods throughout the whole period.

Figure 33: Two new long-term cost of living estimates, 1912-1943

Base: 1912=100



Source: author's estimates. See Appendix.

As Figure 33 shows, according to the official series, prices rose by 40.8% between 1912 and 1943. In that same period, using the food and rent estimate, the CLI increased by 46.5% and given the long-term spliced series, the variation was 58.1%. The implications are clear. The long-term spliced estimate is a sounder series than the official one as it improves on most of its pitfalls, despite its narrower scope. The implication is that when Perón arrived at the DNT in 1943, all else being equal, workers were worse off economically than the literature

⁸¹¹ See the Appendix for more details on how the series are estimated.

assumes. Except for particular years – 1919 being the most significant – the three series move in the same direction. What varies is the intensity of the fluctuations.

As for the comparison between the food and rent estimate and the official one, their trends are not as straightforward. There are some years in which the latter exceeded the former: 1913, 1916-1921, 1923, 1933-1936 and 1940-1941. For all those years, the variations in the value of the items not included in the food and rent estimate exceeded that of the ones represented in both. It was also affected by the type of prices considered until 1926, as the prices for the food and rent estimates are not the same as in the official series, as well as by the differential impact of the sub-index share change, as in the food and rent estimate there was no such alteration. Also, up until 1926, for the years in which the food and rent estimate exceeded the official one, the opposite happened: food and rent increased more substantially than the imported goods of the other expenditure sub-index. The decline in the prices of food items after the Great Depression is clearly reflected, then, in the food and rent estimate. For most of the years up to 1932, the gap between the two exceeded ten index points. This is particularly the case in 1917 and 1918, given the way the change in the sub-index of Bunge's estimates, explained above, was done. For the period 1933 to 1943, the gap never outstripped six index points. The food and rent index did not rise in 1933, unlike the other two series in Figure 33, because there is no splice between two very different estimates, since the food and rent index includes the same goods throughout the whole period. This affects the closing of the gap between it and the official index during the 1930s.

Throughout the whole period presented in Figure 33, the gaps between the two re-constructed series are closely, although not entirely, related to the items not considered in the food and rent series, rather than to the prices or sub-index share alterations until 1932, given that both variables are the same in the two indices. Between 1912 and 1932 such discrepancies are linked generally to the variations of the other expenditure sub-index, as most of the food items are the same. This means that throughout WWI food (and rent) prices in Argentina did not rise sharply. They were particularly stable between 1914 and 1916. However, import prices, factored in through the other expenditure sub-index, increased substantially. Prices of food (and rent) only jumped substantially once the war was over. In both re-constructions, prices rise in 1919, providing more evidence to the assertion that the decline in the official series in that year is linked to the lack of splicing. The closure of the gap between 1924 and 1928 relates to the drop of import prices by 28.9%. From 1933 to

1943, the series have similar trends, and differences in their fluctuations relate mainly to the food items not considered,⁸¹² as well as soap, newspapers and transport.

The discrepancies among the different long-term series cover all the causes of alterations mentioned previously: types of prices (retail versus wholesale, as well as rent for the City of Buenos Aires versus the whole country and a slightly different other expenditure sub-index), family structure, the source of prices, the differential impact of the sub-index shares and the methodology used for splicing different series. These different assumptions and data show how the decisions of individuals influence estimates. Statistics are constructions and the process behind their elaboration must be assessed carefully following the de-construction/construction/re-construction methodology to understand how and why they were elaborated using a particular procedure and not a different one. Compared to the food and rent estimate, the long-term spliced series includes a greater amount of prices and reflects more truthfully the procedures followed by Bunge and Figuerola, whilst correcting most of their series' pitfalls, even if the official estimates are not totally reproduced due to the lack of information. As it is a sounder estimate, the series should be considered a new CLI for the period 1912-1943.

Re-constructing the Argentine CLI *vis-à-vis* its counterparts: shedding light on the history of CLIs

This section provides an analysis of the Argentine, US, British and German CLIs in tandem during the first half of the twentieth century, particularly the interwar period, when for Tooze a novel macroeconomic conception of the economy developed.⁸¹³ It is a conclusion before the conclusion because it draws together the elements analysed in this thesis, becoming a direct contribution to the history of CLIs. This is the necessary and final step of the re-construction of the Argentine index. The examination is grounded on the existing research on the indices reviewed in Chapter II, with some reference to primary sources in the British and US cases. Due to the unevenness of the secondary literature, there is an inclination towards comparisons between the US and Argentine indices.⁸¹⁴ While it generally considers the indices as one estimate, when pertinent there are distinctions between Bunge's index and the 1933 CLI. The

⁸¹² The Appendix has a table with the food items taken into consideration in all the estimates analysed in this chapter.

⁸¹³ Tooze, *Statistics*, p. 10.

⁸¹⁴ If a national CLI is omitted in a particular comparison it is because the secondary literature does not elaborate on the aspect being assessed.

assessment focuses on the context in which the estimates were produced and their uses, their methodology and characteristics, and the debate surrounding them.

Context, uses of the CLI and national statistical systems

The Argentine CLI was among the first indicators of its kind to be released in Latin America.⁸¹⁵ Its publication almost paralleled that of its US, British and German counterparts in the mid to late-1910s. In their origins, all these indices were somewhat related to WWI, depending on the way in which the conflict impacted on each country, proving Furner and Supple's argument that moments of distress advance knowledge.⁸¹⁶ The US and British CLIs achieved significance mainly during the conflict, as these countries were among the belligerents. In Argentina and Germany, despite the latter being involved directly in the war, they gained importance after it, in large part due to the way the conflict altered each nation. In Germany war reparations encouraged hyperinflation, which generated a demand for a frequently updated index. As explained in Chapter III, WWI modified the international political economy, so the context in which Argentina's ruling and economic elite planned its activities changed and a new reality had to be understood. The impact the international conflict had on these indicators demonstrates the importance of the war for the history of price indices.

In the United States, Britain and Germany CLIs began as labour statistics to be used as wage adjustment mechanisms and shed light on the social question that was leading to increasing industrial unrest. These indices were developed due to domestic needs in countries with a relatively high degree of industrialisation. However, at that time, they were not a priority for statistical systems. For example, their relevance in the United States and Britain faded once WWI was over. Despite the similarities in their use, they were elaborated by different agencies: the British CLI by the Labour Bureau, which was part of the Board of Trade, but soon moved to the Ministry of Labour; the US indicator by the BLS; and in Germany the RSO and the Labour Ministry joined efforts. This reflected the differences in the characteristics of the national statistical systems and thus the needs of society and the state. As Stapleford explains, US price data began to be published when the BLS realised its role as monitor and facilitator of industrial relations.⁸¹⁷ This role and the relevance of the CLI

⁸¹⁵ As mentioned in Chapter IV, the Peruvian and Chilean indices were first published in the ILR in 1927, without the corresponding information as to when they were released, *ILR*, 'Statistics', p. 122. Apparently, most of the other national Latin American CLIs began in the 1930s, IASI, *Bibliography*, pp. 93, 144, 243, 301.

⁸¹⁶ Furner and Supple, 'Ideas', p. 24.

⁸¹⁷ Stapleford, *The Cost*, p. 39.

gained significance as time passed. On the other hand, instruments to understand and make governable the changing economic situation, leading, in turn, to an embryonic macroeconomic vision, were needed in Argentina, a country that in the 1910s and 1920s was scarcely industrialised. However, Bunge's ideas were not shared by the ruling and economic elite, who aimed at maintaining the outward-looking economic strategy pursued since the 1880s. Wage adjustment and the social question were therefore secondary issues for Bunge's estimate – despite the influence the *Semana Trágica* had on its methodology, as this thesis demonstrates – but primary for the 1933 CLI. In fact, the idea of the DNT as mediator between capital and labour appeared, as mentioned, in the prologue of the 1935 DNT report. As suggested here, this related in part to the changing relationship between Argentina and the ILO that began in the 1930s, but mainly it was a consequence of increasing urbanisation, industrialisation and, consequently, the existence of a working class that could articulate its demands. The 1933 CLI, as was discussed in Chapter V, was thus developed to deal with domestic matters. In this way, the Argentine index inverted Tooze's trajectory of the elements of the matrix of economic knowledge.⁸¹⁸ The index was initially an economic indicator but then became a socio-labour measure. The implication is that for CLIs to hold, they have to have a clear function within the political economy, as Stapleford argues.⁸¹⁹ That role has been tied historically to them being used as wage adjustment mechanisms and state agencies becoming mediators between capital and labour. That is, CLIs must be perceived, initially, as a neutral and objective means to foster the rationalisation of labour relations. For this to occur, actionable objects based on a coherent imaginary of people, places, and identities developed through infrastructural work, *à la* Curtis,⁸²⁰ must exist. As individuals recognise and define themselves through these figures, *à la* Hacking,⁸²¹ approval, support and compliance from the working class is needed for CLIs to hold. A political space that generates a space of common measurement must be created, to make things that hold, *à la* Desrosières.⁸²² Indices that held were closely related with the working class, becoming a key instrument in its making up, as the Argentine case study shows. These factors were crucial, especially in the US and Argentine examples. The analysis of the Argentine indices and the comparison with its counterparts implies that, consequently, they must be triggered by domestic, rather than international, needs.

⁸¹⁸ Tooze, *Statistics*, pp. 4-11.

⁸¹⁹ Stapleford, *The Cost*, p. 60.

⁸²⁰ Curtis, *The Politics*.

⁸²¹ Hacking, *The Taming*.

⁸²² Desrosières, *The Politics*.

As already mentioned, the US CLI experienced a statistical blackout soon after its launch. For Stapleford, this occurred with little criticism because there was a lack of clear use for the data. As part of a larger downsizing in the activities of the BLS due to budget problems and the incompetence of staff, O'Neill's choice to cease CLI updates was deliberate, given his preference for studies of practical problems with legislative effects over statistical investigations.⁸²³ Chapter IV arrived at similar conclusions for the Argentine CLI: the ruling elite had a particular view of the economy that did not fit and/or need such an indicator. Both blackouts happened early on in the trajectory of the indices, suggesting, yet again, that statistics must be relevant within the political economy for them to hold. In Tooze's terms, there was no consensus in civil society regarding the estimate.⁸²⁴ In the case of Germany, there was an ample agreement in civil society about the need to develop a CLI in 1920, yet after an initial fiasco it only took shape in 1925, thanks to an authoritative state and in conditions of economic stability. These contrasts corroborate one of the premises of this thesis: statistics are a social construction and take shape in a process that requires cooperation and consensus. Statistics cannot be imposed exogenously by a group of individuals or a particular agency with sufficient credentials, even if these circumstances encourage credibility, legitimacy and trust, *à la* Porter.⁸²⁵

With respect to the historical periodisation of the CLIs, the Argentine index followed a similar path to its US and German counterparts. While WWI provided an initial boost, it was the changes triggered by the Great Depression in the 1930s that formed the major turning point for national statistical systems, especially for economic statistics. As explained in Chapters II and V, in the United States and Argentina the agencies that produced the indices experienced substantial changes. Tooze suggests that the *Reichsindex*, affected by the shifts that the German statistical system experienced in the 1930s, was able to withstand the criticisms that had previously been a weakening factor.⁸²⁶ There were substantial differences between the periods, however. Before the turning point, the idea of cost of living generally implied studying family expenditures and living conditions, which resulted in fairly simple indices where food items predominated. Their elaboration and regular update were subject to the availability of financial resources. As Stapleford claims, since workers lived on low wages, reaching a basic standard of living was a priority relative to tracing prices in time.⁸²⁷

⁸²³ Stapleford, *The Cost*, p. 55.

⁸²⁴ Tooze, *Statistics*, p. 96.

⁸²⁵ Porter, *Trust*.

⁸²⁶ Tooze, *Statistics*, pp. 153-4.

⁸²⁷ Stapleford, *The Cost*, p. 69.

In the United States and Germany, from the 1930s onwards, CLIs gained a more economic meaning, which was linked to the underconsumption argument. In Argentina in the 1930s, by contrast, the study of family expenditures and living conditions was not abandoned due to the original economic meaning the CLI had, even if Figuerola used the 1933 survey just to establish the *presupuesto teórico*.

Given the relevance the 1930s had in the history of CLIs, this thesis finds that the decade was crucial, although with different national nuances in their trajectories. It was an essential prelude to the index's role as a fundamental variable in economic analyses. Why? The DE and the DNT acquired substantial importance during the 1930s, particularly in comparison to previous years. However, unlike the BLS,⁸²⁸ the DNT was still a "closed stronghold" that collected statistics until the June 1943 *coup d'état*.⁸²⁹ Data was updated more regularly than before and new methods were introduced, such as the household budget survey. This was another difference with the BLS, since the US agency built upon methodological trends from previous years throughout the 1930s and the effects of the alterations introduced were negligible.⁸³⁰ In Argentina, by contrast, this decade was the DE's heyday both relative to the preceding period and also because it ceased to exist in 1943. Its star indicator, however, did not become a well-established indexation mechanism with the same scope as in other countries, since there was insufficient pressure for a rule-governed system to regulate wages. This nonetheless had an advantage. Unlike in Great Britain, in Argentina it was easier to revise the weights in the index because there was no financial incentive to keep them unaltered. For this reason, the results of the 1935 complementary survey were easily introduced into the existing estimate. It was only when Perón took charge of the DNT in October 1943 and transformed it into the STyP that the agency gained substantial importance. As Figuerola remembered later in an interview, the data collected throughout the 1930s then became crucial from that point onward.⁸³¹

In Stapleford's analysis there is a close relationship between the statistical blackout and the lack of consideration of the 1904 index as a 'proper' CLI or, potentially, not an index at all. This is also seen in the official view of the BLS, which recognises the US CPI as going back to 1913.⁸³² Statistical blackouts therefore shed light on the national statistical system. Apart from the lack of a clear use of the index, they suggest the absence of sufficient

⁸²⁸ Ibid., pp. 167-9.

⁸²⁹ Fayt, *La naturaleza*, p. 96, author's translation.

⁸³⁰ Stapleford, *The Cost*, p. 149.

⁸³¹ Fayt, *La naturaleza*, pp. 95-7.

⁸³² <http://www.bls.gov/cpi/cpiovrw.htm#item6> (accessed December 1, 2014).

monetary funds necessary to update the estimate regularly or the use of the existing funds for other, more important, purposes. They could also hint at moments of weakness for the agencies in charge of the estimate or of the national statistical system if its aim had been to continue the release of the index. Exogenous circumstances thus condition what statistical agencies do or do not do. The US statistical blackout is particularly relevant for the Argentine CLI because it was through a comparison with the US expenditure structure of 1900/1902 that Bunge aimed to legitimise the sub-index shares of his CLI and equate the situation of Argentine workers to that of their counterparts in the United States and Germany. In Chapter IV, several reasons were put forward that undermined such comparisons. The argument gains even more significance when it is revealed that the US survey was itself criticised, and served as the base for an index that was seen as ‘improper’ and ‘un-official’.⁸³³

Practical and theoretical debates: the different roles of the ICLSs

Stapleford demonstrates that theoretical and academic discussions about the significance of CLIs began after WWI, mainly in Britain and in the US. In the former country, neoclassical economists argued that a CLI must measure the variations in the cost of obtaining a fixed level of utility or welfare. In the latter, institutional economists claimed that such an abstract and subjective concept was not needed to establish successful indices. Instead, they focused on measuring the changes in time of a constant basket of goods. The debate was triggered by the increasing financial implications that CLIs had in arbitration and collective bargaining agreements and to the changes in the consumption patterns generated by the war.⁸³⁴ This thesis argues that ICLSs must be understood in this context of deliberation. However, notwithstanding the problems and contradictions highlighted in previous chapters, ICLS resolutions focused more on methodology than theory, that is, on practical and technical matters that could be put forward easily in all countries. From the analyses of Searle and Tooze,⁸³⁵ the impact these statistical conferences had in the respective British and German CLIs cannot be known. It is worth noting, nonetheless, that both countries sent delegates to the first three gatherings. From Stapleford’s account, the ICLS did not seem to have a substantial influence on the US index. Rather, what impacted on its history at this time were the theoretical discussions in which US scholars were involved. The United States, as expected, given that it was not a member of the League of Nations, did not send delegates to

⁸³³ Stapleford, *The Cost*, p. 53.

⁸³⁴ *Ibid.*, pp. 99-118.

⁸³⁵ Tooze, *Statistics*; Searle, ‘Is There Anything’.

any of the first three statistical conferences. Yet, the idea of ICLS resolutions not reaching the country is unlikely. What seems more feasible is that statisticians were not paying attention to them for political reasons or at least not openly. Previous chapters have suggested that Bunge and Figuerola adopted concepts, ideas and practices from the international arena and adapted them to the local context; Bunge focused more on theoretical aspects and Figuerola on practical features. Debate on CLIs was absent in Argentina at this time. Even practical discussions did not take place, as the analysis of the PCNE showed. Argentina, however, incorporated ILO vocabulary in its reports, but with delays and triggered by deliberate actions. Figuerola was aware of the relevance the organisation was attaining and included its guidelines to legitimise his work. Argentina aimed, at least in its discourse, to generate standardised statistics. Notwithstanding the differences between countries, the existence of a theoretical debate around the meaning of CLIs illustrates the subjectivity of this measure, as there was no clear *a priori* definition that should be followed. This aspect of the contrast illustrates how context as well as an individual's aims and knowledge influence the history of national CLIs, despite international developments.

The comparison between the histories of these four indices highlights how CLI standardisation was not easy to implement. Similarities are found with Prévost's and Beaud's analysis of the ISCs and census practice. They see a tension between idealism, common traits and the regular acquaintance that participants shared at the ISC and "the reality of national politics and of the state as a driving force behind the development of statistical activity in each country and the subordinate position held by statisticians in this context".⁸³⁶ As in some cases ICLS delegates were not necessarily statisticians, even less commonalities existed amongst them, although this tended to be less the case for Britain and Germany. Nevertheless, tension between expectations, ideas and reality was crucial in the history of these indices. Apart from what is highlighted for the Argentine CLI, the lack of updates of the basket in Britain is an example, as well as the nonexistent clothing component when the German index was first released. In spite of the differences, as Loveman points out in the case of the ISCs,⁸³⁷ the ICLSs put together prescriptive blueprints on how socio-labour data should be collected and handled.

⁸³⁶ Prévost and Beaud, *Statistics*, p. 61.

⁸³⁷ Loveman, *National Colors*, p. 91.

Methodology and characteristics of the indices

The type of indices

As analysed in Chapters IV and V, the 1933 CLI measured how the price of a fixed basket of goods changed every month. It was a Laspeyres index, which, in that respect, followed the approach encouraged by the ICLS. Bunge, however, combined several methods, generating an eclectic index. Why? While the aggregate estimate was a weighted price index, the food sub-index was a mixture of un-weighted (bread and other food items components) and weighted (meat component) price indices. This research suggests that in the other expenditure sub-index, unlike the others, quantities changed annually.⁸³⁸ The lack of explanation of the rent sub-index makes it impossible to know its characteristics.

In contrast with the US case, where there was a significant debate about whether the CLI should reflect a fixed quantity of goods or a fixed level of welfare or utility,⁸³⁹ the debate between the types of indices and their implications was not present in the Argentine statistical system. Nevertheless, this difference influenced the kind of critiques the Argentine estimate received: there could only be a limited questioning of the weights of Bunge's index and no inquiring into the utility such quantities provided because, when the quantities were given, they were very generic. Figuerola only mentioned the word utility in his 1935 paper to show that the 1933 survey had more than one purpose. Thus, from this perspective, the 1933 CLI had a greater affinity with the US index rather than the British indicator, which focused more on measuring utility and welfare than the cost of a fixed basket of goods.⁸⁴⁰

The expenditure surveys

One common feature of the first releases in the different countries is the lag between when the expenditure surveys were taken and the publication of the index. Surveys were taken before WWI and indices were released once the war broke out or was over. The most significant gap occurred in the German index: the 1907 enquiry underlay the CLI released in 1921. The consumption patterns reflected in the enquiry were probably altered as a consequence of the conflict, yet pre-war consumption behaviours were the basis of post-war adjustments, leading to criticisms and quickly outdated baskets. This generated estimates that diverged from reality, which was sometimes acknowledged though minimised by the

⁸³⁸ Bunge provided a general explanation of how he estimated the foreign trade index numbers in a footnote in the 1918 *REA* article, which suggests that they were Paasche indices, Bunge, 'Costo', pp. 53-4.

⁸³⁹ Stapleford, *The Cost*, pp. 111-5.

⁸⁴⁰ *Ibid.*, p. 115.

statistical agencies.⁸⁴¹ This is yet more evidence of how CLIs were not a fully established practice in the 1910s and 1920s.⁸⁴² It also hints at the high cost of conducting budget surveys. The lag and the persistence of outdated expenditure structures also illustrates the conservative character of official statistics and the inertial forces at work in them.⁸⁴³ As the basket of the British CLI remained unchanged throughout this whole period,⁸⁴⁴ the existence of survey updates in the US and Argentine indices suggest their relative advantage and their results' comparative accuracy.

Throughout this period, indices were, moreover, generally biased toward specific sectors of the population, despite being estimates that were based on price and expenditure/quantity data for various parts of the country. Except in the Argentine case, the US, German and British indices had, from the beginning, a national scope. In the United States, emphasis was placed on "white families of employed males who worked as wage-earners or low-salaried clerks".⁸⁴⁵ That is, the urban, lower-earning population. The British expenditure survey overrepresented skilled manual workers and excluded unemployed and rural households.⁸⁴⁶ The Argentine index, in both of its forms, was only urban and only contemplated workers; the 1933 CLI also focused on the lowest earning working families. Consequently, despite their national aims, the CLIs were in fact partial images of sub-groups. This observation goes hand in hand with Stapleford's analysis of these inaugural indices being studies of how to provide a certain standard of living to the growing sector of the population, the working class.⁸⁴⁷

CLIs were usually based on the notion of an average worker family, which endowed the indicators with the neutrality, objectivity, predictability, and scientific nature needed to become depoliticisation mechanisms.⁸⁴⁸ Why? Little information, if any at all, was given on the household structure the indicators reflected. The food component of the British index was

⁸⁴¹ In the British case, it was claimed that the use of 1904 weights was not invalidated because the changes in the quantities between 1904 and the launch of the index "were largely counterbalanced by changes in price-level", and the shares were not "sensibly" altered, *The Labour Gazette*, 'Retail Prices Statistics: Scope and Method of Compilation', 28:3, 1920, p. 118.

⁸⁴² Stapleford points out that the index released in 1921 was based on a survey taken in 1918-1919, but its base period was 1913, which also generated distortions in the results, Stapleford, *The Cost*, p. 117.

⁸⁴³ Starr, 'The Sociology', pp. 49-50.

⁸⁴⁴ Despite the acknowledged need for its regular re-examination, see *The Labour Gazette*, 'Cost of Living Index Figure', 31:7, 1923, p. 236.

⁸⁴⁵ Stapleford, *The Cost*, p. 178.

⁸⁴⁶ Searle, 'Is There Anything', pp. 148-9.

⁸⁴⁷ Stapleford, *The Cost*, p. 69.

⁸⁴⁸ As one contemporary report described it, the procedure behind the British index was scientific and "in accordance with recognised statistical practice", *The Labour Gazette*, 'Cost of Living', p. 236.

based on “the average expenditure shown by 1,944 urban working-class family budgets”.⁸⁴⁹ According to *The Labour Gazette*, as prices increases were the same for all families, differences in quantities, relative to different family structures, were not a problem.⁸⁵⁰ Using three budget surveys, the US indices were based on average expenditure results.⁸⁵¹ The 1904 US index was based on the average expenditures of 2,567 families.⁸⁵² Subsequently, information from the US 1918/1919 survey was used to form a budget structure based on 8,531 cases.⁸⁵³ From the 1934/1936 US survey, the information of 15,633 households was used to establish the weights.⁸⁵⁴ In Argentina too, the surveys were updated. As explained in Chapters IV and V, Bunge used the average of all 377 cases surveyed by the DNT. In the 1933 CLI, meanwhile, there was a direct association between the average and a precise family structure, and the *presupuesto teórico* was based on the expenditure of four specific families. The first striking difference is the number of cases considered to establish the budget structure used as the basis of the CLI. Both Argentine estimates were grounded on a much smaller number of cases than their British and US counterparts, despite Figuerola quoting the big numbers in his international comparisons, as highlighted in Chapter V. This has an impact on the amount of cases on which the Argentine CLI is re-constructed. Even if the 1933 CLI was re-constructed using 46 budgets, the fact that the total sample was just 308 families, much like Bunge’s 377 households, situates them far from the generally more than 2,000 cases used in Great Britain and the United States. Moreover, apart from showing the power of Quetelet’s ideas, averages, seen as regular and opposing the chaos and unpredictability of individual acts, are powerful tools of objectification, as Hacking and Desrosières argue. Objects born due to calculations of averages are bestowed with a stability that introduces rigour and natural science methods into human sciences.⁸⁵⁵ Engel’s influence is seen in the choice of average budgets. Given the relevance of the notion of average, the lower number of budgets used to establish the expenditure structure on which the Argentine CLIs were based undermines the estimates in relation to their contemporary counterparts.

⁸⁴⁹ *The Labour Gazette*, ‘Retail Prices’, p. 118.

⁸⁵⁰ *The Labour Gazette*, ‘Cost of Living’, p. 236.

⁸⁵¹ The 1918/1919 household expenditure survey was conducted among families composed of a husband, a wife and at least one child. The average family size that emerged from it was 4.9 individuals. There was an acknowledgement that there were variations in expenditure structures across different cities, family sizes and income, but the index was based on the structure of “all families, everywhere”, National Industrial Conference Board, *The Cost*, p. 69.

⁸⁵² Department of Commerce and Labor, *Eighteenth Annual Report of the Commissioner of Labor, 1903: Cost of Living and Retail Prices of Food*, Washington DC, 1904, p. 82.

⁸⁵³ F.M. Williams, M.H. Hogg and E. Clague, ‘Revision of Index of Cost of Goods Purchased by Wage Earners and Lower-Salaried Workers’, *Monthly Labor Review*, 41:3, 1935, p. 820.

⁸⁵⁴ *Ibid.*, p. 833.

⁸⁵⁵ Desrosières, *The Politics*, p. 10; Hacking, *The Taming*.

The components of the indices

Except for Bunge's CLI, all the indices were grounded on retail prices. Moreover, these initial indices were largely confined to food. In the British CLI, it accounted for 60% of the index.⁸⁵⁶ The 1904 US index only consisted of food items. Following the 1918/1919 survey, food was weighted at 38.2%,⁸⁵⁷ while in the 1930s update it declined to 34%.⁸⁵⁸ In Bunge's estimate, the food sub-index accounted for 50% of the indicator. In the 1933 CLI, food represented 57.5%. The number of food items considered in the Argentine and US estimates increased as time passed, as Figure 34 shows. That increase shows the growth in consumption experienced during the first half of the twentieth century, as well as the existence of more complex and coordinated national statistical systems that could collect more and more information and a growing relevance of CLIs.⁸⁵⁹

⁸⁵⁶ Searle, 'Is There Anything', p. 148, table 1.

⁸⁵⁷ National Industrial Conference Board, *The Cost*, p. 69.

⁸⁵⁸ BLS, 'Cost and Standards of Living', *Monthly Labor Review*, 51:2, 1940, p. 387.

⁸⁵⁹ As opposed to what occurred when the BLS was created in 1885, when "statistics were both ambiguous and novel", Stapleford, *The Cost*, p. 41.

Figure 34: The food items considered in different CLIs

(ARG) 1918 REA article	(ARG) 1924 DGEN report	(ARG) 1935 DNT report	British index	(US) 1904 report	(US) 1921 report	(US) 1940 report
<u>Bread</u>	<u>Bread</u>	<u>Bread</u>	Bacon	Beef - fresh	Bananas	Apples
Coffee	Butter	Canned goods	Beef	Beef - salt	Beans - navy	Bananas
Fat	Cheese	Cheese	<u>Bread</u>	<u>Bread</u>	Beans - baked	Beans - dried
<u>Flour</u>	Coffee	Cigarettes	Butter	Butter	Beef - chuck roast	Beef - chuck roast
Meat	Eggs	Coffee	Cheese	Cheese	Beef - plate	Beef - rib
<u>Milk</u>	Fat	Eggs	Eggs	Coffee	Beef - rib roast	Beef - steak
Oil	Fish	Fish	Fish	Eggs	Beef - round steak	<u>Bread - rye</u>
<u>Potatoes</u>	<u>Flour</u>	<u>Flour</u>	<u>Flour</u>	Fish	Beef - sirloin steak	<u>Bread - white</u>
Rice	Meat	Fruits	Margarine	<u>Flour and meal</u>	<u>Bread</u>	<u>Bread - whole wheat</u>
<u>Sugar</u>	<u>Milk</u>	Legumes	<u>Milk</u>	Fruit	Butter	Butter
Tea	Oil	Meat	Mutton	Hog products - fresh	Cabbage	Cabbage
Tobacco	<u>Potatoes</u>	<u>Milk</u>	<u>Potatoes</u>	Hog products - salt	Cheese	Cake, vainilla cookies
Wine	Rice	Oil	<u>Sugar</u>	Lard	Coffee	Carrots
<i>Yerba</i>	<u>Sugar</u>	Other goods	Tea	<u>Milk</u>	Corn - canned	Cheese
	Tea	Pasta		Molasses	Corn flakes	Coffee
	Tobacco	<u>Potatoes</u>		Other food	Corn meal	Corn - canned
	Wine	Rice		Other meat	Cream of wheat	Corn flakes
	<i>Yerba</i>	Soda water		Other vegetables	Crisco	Corn meal
		<u>Sugar</u>		<u>Potatoes</u>	Eggs	Eggs
		Vegetables		Poultry	<u>Flour</u>	Fish - canned
		Wine		Rice	Ham	Fish - fresh
		<i>Yerba</i>		<u>Sugar</u>	Hens	<u>Flour - white</u>
				Tea	Lamb	Green beans
				Vinegar, pickles and condiments	Lard	Lamb - chops
					Macaroni	Lamb - leg
					<u>Milk - evaporated</u>	Lard
					<u>Milk - fresh</u>	Lettuce
					Nut margarine	Macaroni
					Oleomargarine	Mayonnaise
					Onions	<u>Milk - evaporated</u>
					Oranges	<u>Milk - fresh</u>
					Peas - canned	Oleomargarine
					Pork - bacon	Onions
					Pork - chops	Oranges
					<u>Potatoes</u>	Peaches - canned
					Prunes	Peanut butter
					Raisins	Peas - canned
					Rice	Pineapple - canned
					Rolled oats	Pork - salt
					Salmon - canned	Pork - bacon sliced
					<u>Sugar</u>	Pork - bacon whole
					Tea	Pork - chops
					Tomatoes - canned	<u>Potatoes</u>
						Poultry
						Prunes - dried
						Shortening
						Soda crackers
						Spinach
						<u>Sugar</u>
						Sweet potatoes
						Tea
						Tomatoes - canned
						Veal

Note: ARG means Argentina, US means United States. The goods underlined highlight the similarities across estimates. Meat is also a constant but it is omitted due to the increasing varieties in the US estimates. The goods in bold appear in six of the seven estimates.

Source: author's elaboration based on BLS, 'Prices and Cost of Living', *Monthly Labor Review*, 12:3, 1921, p. 26; BLS, 'Cost', p. 373; Bunge, 'Costo', pp. 45-51, DGEN, *El costo*, pp. 12-9, DNT, 'Costo', p. 22; Department of Commerce and Labor, *Eighteenth Annual Report*, p. 82; Searle, 'Is There Anything', p. 148, table 1.

As Figure 34 indicates, in the official release, Bunge increased the number of goods considered in the CLI from 14 to 18.⁸⁶⁰ His index distinguished between three types of meat,

⁸⁶⁰ Bunge's other food items component also included charcoal and firewood, part of the housing component in the 1933 CLI.

while the DNT estimates just considered beef. As the index was not based on a household survey, Bunge only considered basic goods. The 1933 estimate did not include tea and fat, but added goods like canned food, fruits, legumes, pasta, soda water and vegetables. The reason behind the increasing number of goods probably related to the availability of price and quantity data. From the inclusion of canned goods, pasta and soda water it is inferred here that more industrial items were reaching worker households – a process that also occurred in the United States between the first two indices. Hence, the US CLI also experienced an increase of goods, with the varieties of specific items also rising, such as for beef and bread. Unlike in Argentina, US estimates were spliced properly when these alterations occurred. The British CLI not only maintained its basket unaltered, but had, together with the inaugural Argentine release, the least number of goods.

Bunge's CLI and the British indices excluded fruit and vegetables, while the 1904 US indicator had broad categories for them. This suggests the initial difficulty agencies had in collecting and incorporating the prices of seasonal goods in their estimates as well as their implicit acknowledgement of how seasonality affects budget surveys and the results of the indices.⁸⁶¹ Potatoes were the only exception in all cases. This indicates their importance in diets as well as them being easy to store, resulting in prices less affected by seasonality. Together with potatoes, bread, flour, milk, sugar and meat are present in all the CLIs. Cheese, coffee, eggs, fish, and tea exist in six of the seven series. The British and US estimates did not include alcoholic drinks,⁸⁶² while all three Argentine series tracked the price of wine. These commonalities suggest that the countries had similar diets at this time. However, the coincidence also reflects the inaugural indices' heavy dependence on basic food items.⁸⁶³

Basing the indices mainly on food not only highlights the simplicity of consumption patterns, but also hints at the issues behind collecting other data and updating it, particularly for clothing. The inaugural *Reichsindex* did not include the cost of clothing because German textile businesses refused to give statisticians the information they needed. After some negotiations, from May 1922 the cost of clothing was included and the index gave values almost 10% higher.⁸⁶⁴ Searle is sceptical about the British expenditure data on this

⁸⁶¹ Sometimes it could be explicit, as in the case of the British CLI, see *The Labour Gazette*, 'Retail Prices', p. 118.

⁸⁶² The exclusion of alcoholic drinks from the British CLI "passed a moral judgement on what constituted legitimate expenditure" for the working class, Searle, 'Is There Anything', p. 149.

⁸⁶³ Very similar to the ones used in the historical literature to assess living standards in the same period, for example Allen et al, 'Wages, Prices and Living Standards in China'.

⁸⁶⁴ Tooze, *Statistics*, p. 95.

component, which did not come from the same source as the food information.⁸⁶⁵ The 1904 US index was for food only, despite the existence of clothing expenditure data in the 1900/1902 survey.⁸⁶⁶ In the US index released in 1921 clothing was computed quarterly instead of monthly like food. Bunge's unexplained other expenditure sub-index or the 1933 CLI's made up clothing figure are no exception to this trend. Collecting and updating price and expenditure on clothing was, then, highly complex. Ideally, expenditure data should have taken into account several articles of apparel for different family members, worn in each season, so the surveys had to be annual or partitioned throughout the year. Collecting price data for all the articles and factoring in the seasonality and quality effects, thus required planning and competent staff immersed in developed national statistical systems. The dubious results suggest that all the countries surveyed struggled to meet these conditions.

The increasing capacities of statistical systems are seen by looking, for example, at the rising number food items considered in each national estimate. Thus, compared to Bunge's CLI, the complexity of the 1933 index suggests a concentration of resources, knowledge and techniques in the public administration, which implies that a body of statistical expertise developed within the Argentine state. This was also the case explicitly highlighted for the British and US CLIs and inferred from Tooze's analysis of the German index. In the Argentine case, this impacted on the type of pitfalls found in each estimate.

Conclusion

Statistics are designed to be reflections of reality and objectifications of different phenomena. Public statistics are developed for the sake of knowledge as well as to design policies. From the early twentieth century, a government's performance began to be judged by what numbers showed or did not show. Judgments are based on the notion that statistical calculations are straightforward, apolitical facts. Nevertheless, the quantification process and its results are not objective, even though they appear to be, and are generally considered as such. Statistics are not objective because a definition is needed *a priori* to determine what the phenomenon is to be measured, as well as the aim of the quantification. Depending on such definitions, numbers are operationalised differently. Moreover, even if published by public or private organisations, they are elaborated by humans who, despite their knowledge, have their own judgments and ideas and can make mistakes. In the case of public statistics, there are political reasons behind the development of numbers.

⁸⁶⁵ Searle, 'Is There Anything', p. 153.

⁸⁶⁶ Department of Commerce and Labor, *Eighteenth Annual Report*, p. 98.

This chapter has re-constructed the Argentine CLI, the last step of the methodological analysis that this thesis proposes. As such, the first phase presented several alternative estimates of Bunge's index, the 1933 CLI and long-term spliced series. The discrepancies among the estimates have several causes: types of prices (retail versus wholesale as well as rent for the City of Buenos Aires versus the whole country), family structure, the differential impact of the sub-index variation, and the methodology of splicing different series. The re-estimates all render distinct results when compared to the official estimate used in the historiography. As the methodological procedures followed in each case were not established fully in either of the original estimates, such a lack of clarity opens up the possibility for different interpretations as to why certain assumptions were considered. This chapter has also suggested that the long-term spliced estimate can be considered a new CLI for the period 1912-1943.

To conclude the history of the Argentine CLI, the second and necessary part of the reconstruction went beyond the case study to provide more insight into the history of CLIs. For that purpose, there was an analysis of the US, German, British and Argentine indices in tandem. The aim was to shed more light on the Argentine estimate. It was shown that, along the lines of sociology of quantification authors, CLIs are designed following the availability of data, the aims set by their designers, the context in which they were produced, their expected uses, as well as political and practical decisions. Going beyond the valuable insights provided by Stapleford, Tooze and Searle, the de-construction/construction/re-construction methodology followed here has deepened the analysis and understanding of the estimates. It has emphasised the role of the men behind the estimates and has also identified their pitfalls, which have not been sufficiently analysed for the US, British and German indices. The analysis shows how the Argentine CLI had both similar and unique characteristics to its counterparts at different points in time, but also that each of the other estimates had its own particularities. Specific in the Argentine case, it has been shown that Figuerola's index followed the international canon of standardisation much more closely than its predecessor, even though both of them looked abroad for legitimacy.

For Stapleford, a combination of factors made a CLI hold in the United States. The ascendancy of experts within government generated a state perceived as a bureaucratic manager that monitored the economy through statistics. Moreover, the CLI had to be conceived as critical in the country's political economy. Lastly, conceptual developments had

to link political economy and the rationalisation of labour relations.⁸⁶⁷ Based on his case study of Germany, Tooze claims that for official statistics to produce trusted measures, an authoritative state, a minimum degree of consensus in civil society and a level of stability in the economy are needed.⁸⁶⁸ The analysis of the US, German, British and Argentine indices presented here has shown that all these factors have an important role in the process. How they combine is proper to each national experience. In the case of Argentina, despite Bunge's aims for the statistical system and his CLI, all these factors only came together in the 1930s with the estimate developed by Figuerola.

The comparison between the different national estimates neatly depicts how the cost of living is an intangible concept, "with several possible meanings, an ambiguity not eliminated by turning it into an index number".⁸⁶⁹ From Stapleford's review of the theoretical debate,⁸⁷⁰ it would seem that, as the United States and several other countries used Laspeyres indices with little emphasis on utility and more on the idea of fixed baskets of goods, the ICLS had no choice but to encourage countries to pursue that notion. The BLS did not follow the ICLSs, but what was done in the United States was also pursued in other places and, consequently, was backed by the statistical conferences. In this way, the United States' institutional economists prevailed over their British neoclassical counterparts. More importantly, this suggests that the ICLS had little to no influence in the United States and Britain at that time. Unlike in Argentina, the BLS and the British Ministry of Labour did not need to follow ICLS resolutions for their indices to be legitimate, given that these countries generated much of the debate. In the 1920s and 1930s the legitimacy the statistical conferences had or aimed to have seems, therefore, to have been important only for countries with relatively weak statistical systems.

The US, German and British CLIs were subject to criticism and had problems. The comparison with Bunge's and Figuerola's indices suggests that CLIs in the first half of the twentieth century had similar issues. The indices analysed were questioned by different sectors and for different reasons. Criticisms arose both from labour as well as from employees, as the two were both involved in wage negotiations. This suggests that an important affinity amongst all the CLI histories is the lack of a continuous and lineal development. Consequently, the existence of pitfalls in the Argentine case is not unique to this index. Both the Argentine and US estimates experienced statistical blackouts. The British

⁸⁶⁷ Stapleford, *The Cost*, pp. 59-60.

⁸⁶⁸ Tooze, *Statistics*, p. 96.

⁸⁶⁹ Stapleford, *The Cost*, p. 183.

⁸⁷⁰ *Ibid.*, pp. 100-13.

basket was not updated for almost a century. The *Reichsindex* lost ground to private estimates as inflation accelerated in the early 1920s. There were disruptions, partly because no statistical agency or individual behind the estimate got it right and had all the answers from the beginning. Why was the history of these national CLIs subject to progress with setbacks, and thus lacked a continuous, linear development? Notwithstanding their aim to be rational, objective and neutral, CLIs had to adjust to the context. Their trajectory was not only dependent on statistical and theoretical developments, but also on political, economic and social circumstances. For statistics to hold, indicators had to have a role within the political economy – they had to be trusted and perceived as legitimate. Such legitimacy, trust and relevance was not gained automatically; it was constructed, like numbers. The crucial turning points show how increasing bureaucratic expert management and intervention determined the histories of CLIs, thus becoming a fundamental characteristic of the search and need for neutral numbers.

Chapter VII - Conclusion

This thesis has analysed the history of the Argentine CLI during the first half of the twentieth century following the de-construction/construction/re-construction methodology, a procedure inspired in the sociology of quantification literature, which has been enhanced here by considering statistics as historical sources. Why should statistics be so closely assessed? Statistics are generally perceived as straightforward, apolitical facts that travel through time because they are seen to reflect and establish reality by objectifying phenomena. They are ready-made science. Public statistics are produced to increase knowledge and design policies. Platt and Tooze nonetheless argue that individuals should be sceptical about numbers⁸⁷¹ and sociology of quantification demonstrates that statistics are not objective. Definitions are needed beforehand to establish the phenomenon to be measured. Depending on those definitions, numbers are operationalised differently, generating non-neutral statistics. Particularly notable is that, though not exclusively, there are political reasons behind the development of official numbers. Moreover, statistics are not static, they are constructions that change and adapt to the shifting economic, social and political context, generally encouraged by international developments. Whether published by public or private institutions, moreover, statistics are elaborated by knowledgeable individuals who have their own judgments and ideas. Statistics are therefore historical sources, an object of study in themselves. By studying how and why they are produced and used, they can be conceived as science in the making because they generate facts and help legitimise arguments. A useful procedure to do so is the three-step methodology introduced in this thesis, where it has been applied to two Argentine cost of living estimates: Bunge's CLI, released privately in 1918 and officially in 1924, and the 1933 CLI, which was published in 1935. Applying the methodology has allowed the thesis to show how, why and by who the estimates were elaborated, their underlying assumptions, what their most important pitfalls were, why the pitfalls existed, and why they mattered. This three-step methodology also involved an analysis of the Argentine, US, British and German indices in tandem.

The premise inferred from the sociology of quantification framework that guides this thesis and that justifies this case study is that statistics are not unique *per se*. Why? Because national statistical systems and statistical tools are conditioned by the economic, political and social context in which they are immersed. This premise gains even more relevance when it is

⁸⁷¹ Platt, *Mickey Mouse Numbers*; Tooze, 'Trouble with Numbers'.

taken into account that there is no universally valid and right way of estimating CLIs. Therefore, much can be learned not only from case studies of national statistical systems and particular national indicators, but also from their comparison across space and time. This thesis has used the Argentine CLI as a case study to address the sociology of quantification literature. Focusing on solely one instrument and comparing its characteristics across time, the three-step methodology has demonstrated how a statistic must have a purpose within the existing political economy to hold. Issues arise, however, not only through the collection of data, but also due to the way in which indicators are constructed. The analysis of the Argentine, US, British and German CLIs illustrates similarities and singularities across space. Both the temporal and spatial dimensions suggest that the changing context generates different needs for information to which CLIs adjust and adapt.

For the Argentine case, this thesis has recounted the until now inexistent history of the country's CLI in the first half of the twentieth century, thereby contributing to the existing knowledge of the Argentine statistical system and its institutions, and of two of its key individuals: Alejandro E. Bunge and José Miguel Francisco Luis Figuerola y Tresols. It has, moreover, contributed to the wider literature on the history of CLIs by demonstrating the importance of the ICLS. In making this analysis, the thesis has asked a series of questions: How and why were these two Argentine CLI estimates produced and how did they differ? In what economic and social context and by who were they elaborated? What were the implications of the assumptions followed in each case? What were their strengths and pitfalls? How do re-constructed series compare to the official one? What does the history of the Argentine index suggest about the history of CLIs in general? These questions have been assessed throughout. The construction and re-construction of the indices, with information that was available to Bunge and Figuerola, shows how political decisions as well as personal judgement and exogenous circumstances determined index development, illustrating that statistics are not neutral. Specifically, the re-construction generated a new long-term index for the period 1912-1943 that addressed the pitfalls found in the official series. However, CLIs are never exempt from questioning and critiques as judgment is involved in their establishment, which suggests that the new long-term estimate is a step forward, but not a definitive series. Through the comparison with other indices, this thesis has also demonstrated that the history of CLIs must be understood by looking both at the emergence of a world system of CLIs as socio-labour statistics and at states that aimed "to provide a rule-governed framework for assessing, justifying and guiding the production and distribution

of material resources”.⁸⁷² Similar to Loveman’s conclusion regarding Latin American censuses,⁸⁷³ the micro-politics of determining what and how to measure are shaped historically by the macro-politics of states’ efforts to rationalise the political economy through a more active role in managing the economy and society.

Looking back (at this thesis)

What are the findings of this thesis? Though divided in different categories, they are interrelated.

On the Argentine statistical system

The thesis has built on and expanded the existing sociology of quantification literature on non-core countries through its Argentine case study. Without looking in detail at how numbers were produced, Daniel, González Bollo and Otero have studied the formation of public statistics, the consolidation of a specialised bureaucracy, and the rise of public statistics as a shaping factor of public policy.⁸⁷⁴ These authors view the history of the Argentine statistical system as one of continuous progress, yet the study of the CLI made in this thesis suggests that progress was more discontinuous.

The CLI provides an important window into Argentina’s statistical system in the first half of the twentieth century because of the centrality of the index to it, and also because of Bunge’s and Figuerola’s prominence. The thesis has depicted the increasing modernisation, institutionalisation, professionalisation and complexity of the Argentine CLI. It has shown that the indicator had its own dynamics that were related mainly to international developments, the shifting context, and the individuals in charge of the estimate. Progress in the index is seen, for example, in the change in its publication frequency, the existence of a household budget survey as the basis of the 1933 CLI, as well as ILO recognition. However, there was not a linear, uninterrupted progress. Indeed, discontinuous development was a characteristic of the system as a whole, since it had to deal with the re-establishment of the *Caja de Conversión* in the late 1920s, the 1928 dismissals of the head of the DERE and the DGEN and the 1931 monetary allocation cuts. The history of the index and the relevance gained by the statistical agencies in different periods indicate that the system was far from

⁸⁷² Stapleford, *The Cost*, p. 382.

⁸⁷³ Loveman, *National Colors*, p. 306.

⁸⁷⁴ For example Daniel, ‘Un imaginario’; González Bollo, *La fábrica*; Otero, *Estadística y Nación*.

being a *fábrica*, as González Bollo suggests.⁸⁷⁵ Rather, these statistical offices operated more like *talleres*.

On the Argentine CLI

On the political economy of the Argentine CLI

In the first half of the twentieth century, the Argentine CLI experienced discontinuous progress, which is explained by the context, its use and its conception within the existing political economy. Bunge's CLI was an instrument within his statistical toolbox, which helped him delineate an embryonic macroeconomic vision that privileged the role of the domestic market in order to foster industrialisation. The index was a coefficient of money correction that allowed international comparisons of the value of the currency. It did not have a wage-adjustment role, as the working class was not yet a relevant group. As Bunge was perceived as having particular interests linked to major domestic capital, the index was distrusted by the working class. Moreover, the ruling elite did not agree with his macroeconomic vision and wanted to continue pursuing the export-led development strategy, so, this thesis argues, the CLI did not hold due its lack of purpose within the political economy. In the mid to late 1920s, as the statistical system experienced a setback, the index suffered its sombre period. Justo's revitalisation of the statistical system was part of the making up of the working class, for which a CLI was needed, contributing to the DE's heyday. The aim of the indicator changed, so the development of the 1933 index resulted from a political concern anchored in workers' living conditions and in their relationship with employers. The fact that such an indicator stuck suggests, as Daniel stresses, that state intervention in wage determination started to be perceived as legitimate, as the state progressively came to regulate more of the economy. Statistical rationality provided "the scientific basis to justify an intervention strategy".⁸⁷⁶ The possibility of calculating the index on a monthly basis also illustrates the development of the national statistical system and its increasing means to regularly collect price information. Consequently, the 1933 CLI's goal of making up the working class was successful when compared with Bunge's objective of establishing a new macroeconomic vision.

With the project to make up the working class, Bunge's embryonic macroeconomic vision appeared to take a step forward, indicating continuity between González Bollo's third

⁸⁷⁵ González Bollo, *La fábrica*.

⁸⁷⁶ Daniel, 'L'objetivation', p. 198, author's translation.

(1916/7-1932) and fourth (1932-1943) periods of the statistical system.⁸⁷⁷ However, from the CLI's perspective, that connection was tenuous, due mainly to the methodological differences between the estimates and the lack of consideration of Bunge's CLI when elaborating the 1933 index. Nonetheless, and despite the pitfalls in Bunge's CLI (such as the lack of splicing when there is a change in the shares of the sub-indices, which was in any case an alteration for which there was no empirical evidence), it still was a critical part of the cognitive and methodological statistical revolution, suggesting that it was a big step forward for the national statistical system, as González Bollo explains.⁸⁷⁸ Moreover, Curtis claims that inconsistent and incoherent social observations still provide significant representations of social relations, as they have practical utility.⁸⁷⁹ Thus, Bunge's CLI deserves analysis, despite its inability to hold in an era prior to the making up of the working class.

The aim to quantify the standard of living of workers was a search for objectivity to deal with the distrust and distance the different governments had with this emerging social class and that the class had with the state. A feedback relationship existed between the DE's heyday and the development of the labour movement. Following Desrosières, a statistical agency's glory days relate to when "they manage to link their investigations to crucial current questions".⁸⁸⁰ The CGT was a vital support mechanism of the DE's tasks in the 1930s, implying that a certain degree of organisation within and institutionalisation of the working class were fundamental in the history of CLIs more broadly, as all indices released in various countries in that period were linked to that segment of the population. At the same time, the CLI and other socio-labour statistics allowed the state to develop a coherent imaginary of the working class, in order to be able to better manage it. As Daniel explains for unemployment figures,⁸⁸¹ in the 1930s a fully employed working class was not normal, so periodically updated numbers that accounted for the situation in the labour market were needed. Similarly, the 1933 CLI became a fundamental tool to provide scientific support for government action. It contributed to the understanding of the living conditions of the working class and it was essential in comprehending the relationship between workers and employers and in establishing the purchasing power of wages. It thus formed an essential part of the quantification of the working the class, which would give Perón the knowledge and authority he needed in the 1940s.

⁸⁷⁷ González Bollo, *La fábrica*.

⁸⁷⁸ *Ibid.*, pp. 119-59.

⁸⁷⁹ Curtis, *The Politics*, p. 35.

⁸⁸⁰ Desrosières, *The Politics*, p. 248.

⁸⁸¹ Daniel, 'Conflictos sociales', pp. 22-3.

On the general characteristics of the Argentine CLI

Statistical reports are one of this thesis' main primary sources because they generate, as Scott explains,⁸⁸² a particular view of reality. They are crucial for understanding how statistics were produced and used. The fact that both Argentine CLIs must be de-constructed and constructed to be understood implies that Curtis' idea of systematic social observation did not take place, leading to a wide margin of interpretative discretion and analysis.⁸⁸³ Stapleford argues that political reasoning is always factored into the definition of public statistics and full methodological explanations are needed, as judgments with political content extend as far back as the calculation process.⁸⁸⁴ For Desrosières, statistics are built on controversies that are disguised once numbers are naturalised.⁸⁸⁵ The study of the Argentine CLI shows that the lack of a clear methodology quickly hides those controversies, allowing unquestioned numbers to travel in time. It also illustrates how different judgments were involved in their development. To grasp fully how Bunge's and the 1933 indices were estimated, an analysis of core as well as peripheral publications is needed. Even so, after the construction, several questions remain, opening a window for speculation, for example, regarding the family size of the *presupuesto teórico*.

Unlike its contemporary counterparts, both Argentine CLIs were based on information for the City of Buenos Aires, but were conceived of as national price indices. This hints at the lack of cooperation between the national and provincial states and a shortage of funding to collect truly national data. The disconnection between national and provincial states becomes another level of decentralisation of the Argentine statistical system, encouraging even further the notion of *talleres*. Stapleford questions the representativeness of aggregate statistics in diverse nations.⁸⁸⁶ Figure 9 of Chapter IV shows the ample disparity of price variations between Argentine cities, confirming Stapleford's scepticism. The answer cannot be, as was in Argentina until January 2014, to elaborate a national CLI solely by considering data from the country's biggest city.

Given that there is no specific and correct way to estimate a CLI and that statistics are dynamic, this thesis understands that Bunge's main aim to measure the purchasing power of money meant that he did not need to base the CLI on a household survey, but on wholesale prices of a relatively long list of goods. This inverted the pattern of Tooze's elements of the

⁸⁸² Scott, 'A Statistical'.

⁸⁸³ Curtis, *The Politics*, p. 35.

⁸⁸⁴ Stapleford, *The Cost*, p. 8.

⁸⁸⁵ Desrosières, *The Politics*.

⁸⁸⁶ Stapleford, *The Cost*, p. 140.

matrix of economic knowledge, as the indicator was first an economic rather than a socio-labour index.⁸⁸⁷ Figuerola, on the other hand, wanted to enquire into the living conditions of workers, so a proper budget survey was needed. However, following those goals, he should have aimed for the CLI to be based on the preferences of the most typical family – something that, in the end and despite his claims, did not occur. Thus, whereas the 1933 CLI reflected the changes in time of a fixed set of goods purchased by the working class measured with the prices paid by them, Bunge's indicator mainly tracked the trend of a set of prices.

All the observations and uses of Bunge's index and the 1933 CLI were grounded on the notion that statistics are an objectification of reality without subjective mediation. However, it is shown here that specific decisions and ideas behind their elaboration responded to different matters. The gap between the 1932 CLI decree and the publication of the Rules and Instructions suggests that it took almost a year to begin work on the CLI. Similarly, it also took many years for Bunge to elaborate a CLI. These intervals show how the elaboration of public statistics is a complex task that requires careful planning, although it inevitably involves subjective choices. Sometimes they were pragmatic, rather than due to the lack of knowledge of statisticians, and resulted from the funds and personnel available, while other times they were political decisions. These observations can only be made by following the three-step methodology, which allows a thorough examination of the estimates.

On Bunge and Figuerola

Bunge and Figuerola are crucial protagonists in the history of the Argentine CLI. Building on the ideas of Loveman and Tooze,⁸⁸⁸ this thesis claims that both men, despite reacting to the demands of society, were erudite bureaucratic actors with their own personal goals and aspirations, since, as González Bollo and Pantaleón claim,⁸⁸⁹ no one can generate knowledge isolated from the interests at stake. By emphasising their roles, this thesis has depicted the non-neutral character of statistics, as each individual had visions and ideas that they wanted to impose. The statistical revolution Bunge encouraged was based on his understanding that Argentina had to foster industrialisation. The corporatist conception Figuerola brought from Spain, meanwhile, was a determining factor in his gathering of data on the working class. Their actions promoted the modernisation of statistical agencies, introducing new methods and procedures. Both men were transformed from statistical officers into government

⁸⁸⁷ Tooze, *Statistics*, pp. 4-11.

⁸⁸⁸ Loveman, *National Colors*; Tooze, *Statistics*.

⁸⁸⁹ González Bollo, *La teodicea*; Pantaleón, *Una nación*.

economists due to their accumulation of cognitive and techno-bureaucratic capital. In that metamorphosis, the cost of living estimates were crucial. They learned to be statisticians and learned about numbers whilst having roles in the state administration, as they were not trained statisticians. They used their statistical knowledge and state experience for different ends, as due to their personal aspirations, they wanted to be acknowledged by different sectors, which influenced the CLIs they produced.

Contemporaries and the literature see Bunge as a multifaceted man. He was a polymath and his appointments in the Argentine state were mostly within the national statistical system. Statistics were crucial in everything he did; they were a means as well as an end. Two of his main books show that his work long exceeded the CLI.⁸⁹⁰ His interests were the Argentine economy and society as a whole, and not just a segment of it. Bunge was well established within the Argentine society and state. His detailed focus on index number methodology was an academic endeavour, as he wanted to be recognised internationally by scholars like Fisher and Bowley. By contrast, Figuerola, a foreigner with ambition, was a technician with vast experience in labour mediation. He needed to make an impression and focused on getting support from international organisations that shared the aims of the DNT. Figuerola was pragmatic in his CLI approach, following ICLS resolutions, and tended to present results with little methodological explanation. A state statistician, he had many roles within the Argentine state, and not just in the national statistical system.⁸⁹¹ He had political aspirations and his DE appointment was seen as a springboard to something else. For Figuerola, statistics seems more like a means than an end in itself.

The roles of these men in the development of the CLI show that learning-by-doing influences the development of statistics, an element generally not considered within the sociology of quantification literature, as it is only observable through the three-step procedure. Learning-by-doing impacts on individuals' activities and on how they explain the methodology behind the estimates. For example, Bunge's explanation of index numbers in the 1918 *REA* article followed the critiques received when he published *Intercambio*. Figuerola's annual complementary survey focused on clothing, and the 1937 DNT report that released the results had greater methodological detail, as he had previously been criticised for ignoring the latter. However, this thesis suggests that the (few) methodological critiques the

⁸⁹⁰ Bunge, *Los problemas económicos del presente*; Bunge, *Una nueva Argentina*.

⁸⁹¹ He was General Secretary of the STyP between 1943 and 1944 and of the National Post-war Council (*Consejo Nacional de Posguerra*) between 1944 and 1946. He had a key role in the design and execution of the First Five-year Plan (*Primer Plan Quinquenal*), transforming him into an expert within the Peronist coalition, González Bollo, 'José Francisco Figuerola', pp. 1-3.

CLIs received implies that there were not many individuals with enough knowledge to contest their work. It also implies that the CLI had little overall importance.

As a consequence of these contrasts, this thesis demonstrates that the 1933 CLI was less personalised relative to the comprehensive price index, which impacted, as Porter suggests it should,⁸⁹² on their trajectories. The comprehensive price index was associated mainly with Bunge, rather than with the *REA* and the *DGEN*. Its official release in 1924 was linked to his job switch within the statistical system. His role was so important that his departure from the *DGEN* contributed to the index's sombre period. The 1933 CLI, by contrast, was mainly associated with the *DNT*, rather than Figuerola himself. This difference between the estimates also relates to González Bollo's periodisation of the Argentine statistical system.⁸⁹³ During his third period (from 1916/7-1932), methodological innovations, such as Bunge's, were introduced and technologies to collect and process information were incorporated. Statisticians had a more prominent role, rather than the agencies. The latter situation was inverted between 1932 and 1943, when Otero's period of anonymous statistics was in full bloom.⁸⁹⁴ This thesis has argued that it was this depersonalisation of the CLI that allowed the 1933 index to hold, whereas Bunge's did not survive because it was too closely associated with him.

On looking abroad and legitimacy

Porter's view of quantification as a technology of distance shows how Argentina was inserted into the global network of science through the development of a CLI.⁸⁹⁵ Thus, the domestic politics of the Argentine index were embedded within the international field. Bunge relied on the concepts of international scholars regarding index number methodology. Figuerola, as part of the larger shifts in the relationship between the ILO and Argentina, established links with that international organisation and relied heavily on ICLS resolutions to carry out his statistical work. The statistical dimension of the relationship between the ILO and Argentina was an unexplored element in the existing literature that has been analysed for the first time in this thesis.

Why the need to look abroad? As Porter argues, there is a preference for standardisable measures rather than highly accurate ones, because accuracy is insignificant if

⁸⁹² Porter, *Trust*.

⁸⁹³ González Bollo, *La fábrica*.

⁸⁹⁴ Otero, 'La historia de la estadística', pp. 71-5.

⁸⁹⁵ Porter, *Trust*, p. x.

the same procedures cannot be performed everywhere.⁸⁹⁶ Following Daniel,⁸⁹⁷ the international links provided local statisticians with authority and status. It also gave importance to their tasks and findings. Though increasingly more powerful and autonomous throughout the period of this research, the Argentine statistical system was still not centralised and influential enough, which explains the need Bunge and Figuerola had to legitimise their work by looking abroad,⁸⁹⁸ while also adapting guidelines to the local context. Legitimacy emerges from the comparison with international indicators, from looking abroad and from complying with international guidelines that show that the same procedures are followed and that similar results are obtained. As a consequence of these procedures, Argentina becomes similar to and comparable with other countries, as Curtis, Loveman and Patriarca explain with respect to national censuses.⁸⁹⁹

The legitimacy of official statistics derives, as well, from the methodology used to produce them and from the regularity and consistency of the information. It is constructed also by how it is perceived in society and by third party usage. The annual periodicity of Bunge's CLI and its sombre period suggest the lack of importance of the indicator *vis-à-vis* others produced by the DGEN, particularly foreign trade data, which was key within the existing political economy. Why? Because, as Stapleford explains for the early years of the US CLI,⁹⁰⁰ committing to the regular gathering of specific information would limit the resources the DGEN had to carry out other tasks. Tooze's analysis shows that the *Reichsindex* appeared when it was backed by civil servants, trade unions, industrialists and academics.⁹⁰¹ However, Bunge's index was part of his embryonic macroeconomic vision, which had little societal support. This lack of interest contributed to the sombre years. Consensus about the importance of the cost of living only began to emerge in the 1930s, as the CGT embraced the DE's estimates. The previous inexistence of a consensus contributed to the distrust of statistical activity, which this thesis highlights as one of the major causes of the undermining of Bunge's CLI.

⁸⁹⁶ Ibid., p. 29.

⁸⁹⁷ Daniel, 'Una escuela', pp. 72-3.

⁸⁹⁸ For Bunge's index, the international allusions were not only due to legitimisation needs; they were also a fundamental motive to understand and make use of the estimate.

⁸⁹⁹ Curtis, *The Politics*; Loveman, *National Colors*; Patriarca, *Numbers and Nationhood*.

⁹⁰⁰ Stapleford, *The Cost*, p. 40.

⁹⁰¹ Tooze, *Statistics*, p. 93.

On the history of CLIs

Despite the lack of uniqueness *per se* of statistical tools, case studies have particular characteristics. The Argentine CLI is notable because of its extensive sombre period and its initial use as a coefficient of money correction rather than as a wage adjustment mechanism. Moreover, it was an index based solely on information from one city, while the ICLS had an unusually strong influence on its development in the 1930s. Throughout Chapter VI, its similarities with its US, British and German counterparts were analysed. The history of all these indices is characterised by discontinuous progress. Like them, the Argentine indicator was published during or straight after WWI, which shows how the conflict impacted the history of price indices. Initially, these CLIs were based on basic food items and on an expenditure survey that reflected consumption patterns that had been altered by the international conflict. They also reflected a partial image of a sub-group of the population, suggesting that official quantification implies selective recognition that imposes a partial and simplified order. Lastly, the indices were all based on the notion of an average family. The comparison between the four indices demonstrates that they had similar issues, which reflected the fact that CLIs were novel statistical tools and agencies had to do their best with the limited information and resources available to them. The discussion of the pitfalls in the two Argentine estimates in Chapters IV and V aimed to show that, notwithstanding the common problems, Bunge and Figuerola could have developed sounder indices with the information available to them, but decided otherwise. The de-construction/construction/re-construction methodology proves to be a useful analytical procedure to account for the history of different statistics from the sociology of quantification perspective. It is also a tool that can be used to dig deeper into the estimates, which the existing historical literature on CLIs does not do.

Looking forward (beyond this thesis)

What next? This thesis opens several future avenues of research. Within the sociology of quantification literature, it provides an incentive towards looking at statistics as historical sources, as science in the making, following the de-construction/construction/re-construction approach, which brings a new analytical dimension to the framework. A great part of the sociology of quantification literature has focused on core countries that were forerunners of statistical development, although as Chapter III of this thesis showed, this literature has recently shed light on, among others, the study of the Argentine statistical system. More

research like this thesis, which focuses on a peripheral country that followed, adapted and adjusted international developments and constantly looked abroad for legitimisation, is needed.

The contributions to the history of CLIs and to the understanding of the Argentine case study emerge from the detailed de-construction/construction/re-construction of the Argentine estimates, which includes, in its third phase, the comparison of the Argentine index with its US, British and German counterparts. Looking forward, to improve even further the understanding of the history of CLIs and the Argentine case study, regional research on its Latin American equivalents is necessary. While there seems to be an agreement that Bunge's estimate was amongst the first indicators in the region, international sources like the *ILR* and the IASI reports that have been consulted for this thesis have contradictory information on when the different Latin American CLIs were published and what their characteristics were. The delay in the Argentine index publication in the *ILR* and the selective citation of the Argentine estimates in the IASI reports are illustrations of this. As for other countries, the *ILR* began publishing the Chilean and Peruvian indices in 1927⁹⁰² and the Mexican index in 1930,⁹⁰³ but IASI documents do not register their existence.⁹⁰⁴ Comparative regional research that sets the record straight is therefore needed.

This thesis has foregrounded the influence of international statistical gatherings and the ILO/Argentina relationship by considering the impacts of the ICLS on the Argentine CLI. From this, it would seem that the ICLS had more influence in countries with less developed national statistical systems, which tended to adapt and adjust international developments to the national context. Moreover, this thesis suggests that statistics were relevant in the revitalisation of ILO relationships with non-European countries in the 1930s. However, these findings need to be enlarged by looking, for example, at how other Latin American countries (did not) interact with and (did not) consider the ICLS.

What does this thesis suggest about Argentina's standard of living? Just by looking at the long-term spliced re-constructed CLI, it seems that when Perón reached the DNT in 1943, workers were worse-off when compared to the past than has previously been assumed. Everything else being equal, the findings of this thesis support the actions that Perón took to improve the well-being of workers. That is, the changes in the series presented in Chapter VI must be factored into the analysis, especially in years or periods when the divergence was

⁹⁰² *ILR*, 'Statistics', p. 122.

⁹⁰³ *ILR*, 'Index Numbers of the Cost of Living and Retail Prices', 21:3, 1930, p. 432.

⁹⁰⁴ IASI, *Bibliography*, pp. 136; 223.

significant. Why is this important? Because the Argentine CLI has travelled in time without any questioning. The new long-term estimate encourages a revision of the studies whose conclusions are heavily grounded on this index, as mentioned in the Introduction.

To continue the re-assessment of Argentine statistics, further research is needed both on the CLI and other indicators. The first two Argentine cost of living estimates have been contemplated here, but basket updates exist with budget data collected in 1943, 1960, 1969, 1985/6, 1996/7 and in the early 2000s, so it would be possible to extend the analysis to these. Furthermore, given the novel CLI presented here for 1912-1943, the existing real wage series must be re-examined. As Argentine wage data is sketchy at best, a more accurate denominator deserves a suitable numerator, which should be developed with the same care and attention. Otherwise, the danger is that poor numbers will travel through time without being disputed. This thesis has shown that Platt's question of should such figures "have supplied the basis for much teaching and generalisation ever since?" is pertinent.⁹⁰⁵ Thoroughly understanding the production and use of statistics is crucial if scholars are to maintain, transform and pass on public memory.

⁹⁰⁵ Platt, *Mickey Mouse Numbers*, p. 2.

Appendix

How the Argentine CLI travelled in time

Figure 35 shows the different works on Argentina and the source of the CLI they use, as in the Figure 1 of the Introduction, but it offers more information about the works referenced and the index utilised.

Figure 35: Different works on Argentina and the source of the cost of living estimates they use

Publication (Author/s, publication, year)	Location of reference (page/table)	CLI used (Author/s, year)	Period
<i>Anuario Geográfico Argentino</i> , 1941	pp. 556-7	Quotes DNT, but no reference to specific publications.	1914-1941
Bunge, <i>Nueva Argentina</i> , 1940	pp. 200-1	His initial estimate, updated probably by DNT. No reference to specific publications.	1913-1939
Cortés Conde, <i>Economía Argentina</i> , 1994	p. 220	Díaz Alejandro, 1981	1920-1938
Cortés Conde, <i>El progreso</i> , 1979	pp. 286-8	Cortés Conde's estimates based on DNT price data. He used Bunge's shares regarding the consumption of food.	1882-1913
Cortés Conde, <i>The Political Economy</i> , 2009	p. 316	Real wage estimates from <i>Anuario Geográfico Argentino</i> , 1941	1929-1943
della Paolera, 'How the Argentine', 1988	pp. 187-9, table 37	Based on prices of exports and imports.	1884-1913
della Paolera, Irigoien and Bozzoli, 'Passing the buck', 2003	p. 79	Inflation rates obtained from della Paolera and Ortíz, 1995	1885-1939
della Paolera and Ortíz, <i>Dinero</i> , 1995	According to della Paolera and Taylor, <i>Straining at the Anchor</i> , 2001 this data comes from della Paolera 1988, REA and Díaz Alejandro 1981.		
della Paolera and Taylor, <i>Straining at the Anchor</i> , 2001	p. 236	della Paolera and Ortíz, 1995	1884-1940
della Paolera, Taylor and Bozzoli, 'Historical statistics', 2003	pp. 376, 381	IEERAL, 1986.	1913-1984
Di Tella and Zymelman, <i>Las etapas</i> , 1967	pp. 342; 359; 420	REA Statistical Annex for first two pages referenced here. <i>Investigaciones Sociales</i> , 1940 for third page.	1917-1922; 1923-1926; 1933-1952
Díaz Alejandro, <i>Essays</i> , (1970) 1983	p. 405	DNEC, 1963	1914-1965
Díaz Alejandro, 'Tipo de cambio', 1981	Table S-3	DNEC, 1963	1913-1976
Dorfman, <i>Historia de la industria</i> , 1970	p. 270	<i>Investigaciones Sociales</i> , 1938-1940	1913-1933
Ferreres, <i>Dos Siglos</i> , 2005.	p. 446	<i>Anuario Geográfico Argentino</i> , 1941	1914-1941
Galiani and Gerchunoff, 'The labour market', 2003	p. 148	Analyse real wages directly, which come from Véganonès and Winograd, 1997	1913-1998
Gaudio and Pilonè, 'El desarrollo', 1983	p. 281	Estimates from <i>Investigaciones Sociales</i> , 1940 and <i>Investigaciones Sociales. 1943-1945</i> , 1946	1930-1945
Gerchunoff and Aguirre, 'La economía',	pp. 31, 43	Williamson, 1995; DNT	1900-1930
Gerchunoff and Llach, <i>El ciclo</i> , 1998	pp.469-71	della Paolera and Ortíz, 1995	1900-1997
Germani, <i>Estructura</i> , (1955) 1980	pp. 102, 113	Has DNT real wage estimates. No separate CLI. No reference to specific publications.	1938-1954
Horowitz, <i>Argentine Unions</i> , 1990	p. 32	Analyses real wages directly, which come from <i>Investigaciones Sociales</i> , 1940 and <i>Investigaciones Sociales. 1943-1945</i> , 1946	1929-1945
IEERAL, 'Estadísticas', 1986	Table 6	Díaz Alejandro, 1981	1913-1984
Iñigo Carrera, <i>La formación</i> , 2007	pp. 125-6	1910-1914: Bunge, 1918. 1914-onwards Indec, but acknowledges DNT and the long term merge done by the ILO.	1882-2006
Matsushita, <i>Movimiento obrero</i> , 1983	p. 90	References DNT publication on strikes	1929-1939
Murmis and Portantiero, <i>Estudios</i> , 1971	p. 85	Analyse real wages directly, which come from <i>Investigaciones Sociales</i> , 1940 and <i>Investigaciones Sociales. 1943-1945</i> , 1946	1929-1942
Salvatore, 'Better-off', 2010	pp. 155-6	Williamson and Taylor, 1994	1895-1945
Shipley, <i>On the outside</i> , 1977	p. 145	For the long term series: Dorfman, 1970. For 1910-1914: Bunge, 1920. For 1914-1920: REA.	1914-1930
Sturzenegger and Moya, 'Economic cycles', 2003	p. 113	They do not display a CLI, but in the data appendix they say that the consumer price index was obtained from Gerchunoff and Llach, 1998.	1887-1990
Vázquez Presedo, <i>Estadísticas</i> , 1988	p. 358	DNEC, 1963	1935-1953
Véganonès and Winograd, <i>Argentina in the 20th Century</i> , 1997	p. 258	1900-1913: Cortés Conde, 1979. 1913-1943: IEERAL.	1900-1992
Villanueva, <i>The Inflationary Process</i> , 1964	Table VII	Generates his own series. When referencing official estimates, he quotes DNEC, 1963 (p. 45)	1903-1960
Vitelli, <i>Los dos siglos</i> , 1999	p. 40	IEERAL, 1986	1913-1941
Williamson, 'The Evolution', 1995	p. 163	1910-1914: Bunge, 1920. 1915-1940: <i>Investigaciones Sociales. 1943-1945</i> , 1946	1864-1940
Williamson and Taylor, 'Convergence', 1994	p. A-9	Williamson, 1995	1870-1980

Notes: CLI=Cost of living index; DNEC=National Bureau of Statistics and Censuses (Dirección Nacional de Estadísticas y Censos) ; DNT= National Labour Department (Departamento Nacional de Trabajo); ILO=International Labour Organisation; Indec=National Institute of Statistics and Censuses (Instituto Nacional de Estadísticas y Censos); REA= Review of Argentine Economics (Revista de Economía Argentina)

Source: author's elaboration.

The official series

The official series used throughout this thesis is shown in Figure 36.

Figure 36: Official estimate, 1912-1943
Base: 1929=100

	Index	Annual variation
1912	73.9	-
1913	76.0	2.9%
1914	76.0	0.0%
1915	82.0	7.9%
1916	88.0	7.3%
1917	103.0	17.0%
1918	130.0	26.2%
1919	122.0	-6.2%
1920	143.0	17.2%
1921	127.0	-11.2%
1922	107.0	-15.7%
1923	105.0	-1.9%
1924	107.0	1.9%
1925	104.0	-2.8%
1926	101.0	-2.9%
1927	100.0	-1.0%
1928	99.0	-1.0%
1929	100.0	1.0%
1930	101.0	1.0%
1931	87.0	-13.9%
1932	78.0	-10.3%
1933	88.0	12.8%
1934	78.0	-11.4%
1935	83.0	6.4%
1936	91.0	9.6%
1937	93.0	2.2%
1938	92.0	-1.1%
1939	93.0	1.1%
1940	95.0	2.2%
1941	98.0	3.2%
1942	103.0	5.1%
1943	104.0	1.0%

Source: author's estimates based on Bunge, 'Costo', p. 41 and DNT, *Investigaciones. 1943-45*, p. 258.

The official series is the combination of two estimates. The basis is the CLI published by the DNT in 1946, which extended between 1914 and 1943.⁹⁰⁶ This estimate is very similar to that

⁹⁰⁶ DNT, *Investigaciones. 1943-45*, p. 258.

of the DNEC⁹⁰⁷ – used by many authors, as shown in Figure 35 – and to the first long-term series published by the DNT and attributed to the ILO, which extended between 1913 and 1936. No information regarding where the data came from was given.⁹⁰⁸ Aside from the affinities, the series was chosen because it was the last official estimate released during the period under study, covering the longest time span.

The 1912 and 1913 values of the official series used in this thesis were obtained using the annual variations from the 1918 *REA* article,⁹⁰⁹ applied to the earliest value of the 1946 DNT series. The values from the first years of the 1910 decade generally did not appear in any official publication. Bunge’s estimates were chosen as he was the man behind that official CLI.

The re-constructed series of Bunge’s CLI, 1912-1932

Figure 37 shows the two re-constructed estimates of Bunge’s CLI for the years 1912 to 1932.

Figure 37: Re-constructed estimates of Bunge’s CLI, 1912-1932

Base: 1912=100

	Spliced re-constructed CLI	Unchanged re-constructed CLI
1912	100.0	100.0
1913	103.4	103.4
1914	109.5	109.5
1915	118.4	118.4
1916	126.1	126.1
1917	140.6	140.6
1918	171.7	171.7
1919	188.7	185.8
1920	219.5	213.8
1921	201.1	193.7
1922	177.9	168.8
1923	172.1	163.4
1924	184.5	175.0
1925	179.5	170.0
1926	174.0	164.2
1927	167.1	157.7
1928	159.3	148.9
1929	163.0	152.0
1930	161.4	150.6
1931	149.5	140.1
1932	138.9	130.7

Source: author’s estimates. See Appendix.

⁹⁰⁷ DNEC, *Costo del nivel de vida*, pp. 44-5.

⁹⁰⁸ DNT, ‘Condiciones’, pp. 19-20.

⁹⁰⁹ Bunge, ‘Costo’, p. 41.

These re-constructed series have two substantial differences from Bunge's official estimate. Instead of using wholesale prices, they are based on official retail prices. Given the issues pointed out in Chapter IV regarding the rent sub-index, the series elaborated by the IE was utilised, which referred to the City of Buenos Aires,⁹¹⁰ like the sub-indices shares and the food sub-index prices. One less relevant difference concerns the other expenditure sub-index, which in order to be incorporated for the whole period, differs slightly with Bunge's. It is an official import price index obtained from import values and quantities published in 1948.⁹¹¹ With the aim of reproducing Bunge's assumptions as truthfully as possible, as well as to show other problems with his premises, two series were re-constructed. The basis of both estimates is exactly the same. For 1912 to 1918, they both mimic the procedure of the 1918 *REA* article: the food sub-index has the 30-30-40 shares for meat, bread and other food items, respectively. It considers practically all the 14 other food items, as Bunge did (see Figure 41). The food sub-index accounts for 50% of the CLI, and the rent and other expenditure sub-indices have weights of 20% and 30%, respectively. In the spliced re-constructed estimate of Bunge's CLI from 1919 onward the shares of the sub-indices change to 50-24-26 and new goods are introduced in the other food items component, following the DGEN publication. This method was followed to reproduce the official series as authentically as possible. The unchanged re-constructed index maintains the 50-20-30 sub-indices shares, given the evidence shown in Chapter IV regarding the lack of change in expenditure patterns, and considers more food items, just as the official series does. In re-constructed cases, given the lack of retail price information, tobacco, tea, and fish⁹¹² were excluded from the other food items component for the whole period. Due to the existence of data and the similar purpose in their use, firewood was replaced with kerosene.

As demonstrated in Chapters IV and VI, the other expenditure sub-index was estimated using a Paasche import price index that accounted for all the country's imports, despite Bunge hinting in the 1918 *REA* article that it mainly contained clothing items. To re-construct Bunge's CLI the annual values and volume of foreign published in 1948 by the national statistical system are used to obtain import price indices.⁹¹³ In turn, these values become the other expenditure sub-index in the two re-constructions for the years 1912-1932 with the corresponding shares previously mentioned. The use of this series and not Bunge's is

⁹¹⁰ For more information on the IE series, see below.

⁹¹¹ Dirección Nacional de Investigaciones, Estadística y Censos, *Anuario estadístico*, p. xv.

⁹¹² Fish was one of the four food items considered in the 1924 DGEN estimate.

⁹¹³ *Ibid.*, p. xv.

based on the fact that values for the other expenditure sub-index only exist in his publications until 1926, as Chapter IV explained.

The re-constructed series of the 1933 CLI, 1933-1943

Figure 38 depicts two re-constructed estimates of the 1933 CLI for the years 1933 to 1943.

Figure 38: Re-constructed series of the 1933 CLI, 1933-1943

Base: 1933=100

	IE re-constructed CLI	DNT re-constructed CLI
1933	100.0	100.0
1934	92.9	94.6
1935	98.3	99.0
1936	109.1	108.5
1937	113.7	113.2
1938	111.4	112.1
1939	111.7	112.7
1940	111.3	112.6
1941	114.1	115.5
1942	124.4	123.3
1943	128.7	123.6

Source: author's estimates. See Appendix.

There is one difference between the DNT re-constructed CLI and the IE re-constructed index. In the former, rent prices were obtained from the DNT.⁹¹⁴ In the latter, they were obtained from the research carried out by the IE. Both re-constructed 1933 indices were produced using retail prices published by the DNT,⁹¹⁵ and, if needed, following alternative procedures, as detailed in the price estimates below. Regarding the quantities used, the re-constructed indices in Figure 38 are based on an average of the preferences of all 46 worker families formed by a couple and two children. The choice of the demographic condition of the re-constructed 1933 CLIs was based on the results of the 1936 census of the City of Buenos Aires, discussed in Chapter V, which showed that the typical family was that of a family of four and not the one selected by Figuerola for the *presupuesto teórico*. As for the monetary condition, the choice to consider all 46 budgets instead of the 10 that earned the lowest is grounded on the need to base the re-constructed estimates on the biggest number possible of budgets, a proposition also argued for in Chapter V. Despite considering a larger sample, the

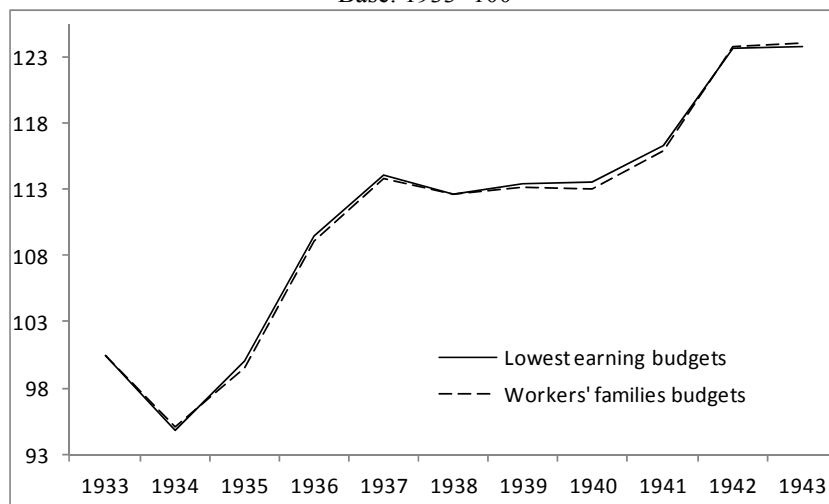
⁹¹⁴ See the Price estimates section for the reference.

⁹¹⁵ DES, *Nivel de vida de la familia obrera. Evolución durante la Segunda Guerra Mundial, 1939-1945*, Buenos Aires, 1946, pp. 10-4.

estimates were quite similar, as shown in Figure 39, which depicts different indices following the procedure of the DNT re-constructed CLI.

Figure 39: Cost of living estimates for workers' families and lowest earning households formed by a couple and two children, 1933-1943

Base: 1933=100



Source: author's estimates as specified in the Appendix.

Unfortunately, both re-constructed series of the 1933 CLI cannot be entirely re-estimated, as was the case with Bunge's CLI. Due to the lack of price data, 77% of the official index formed part of the re-constructed estimates. The main sub-index that was lacking was clothing, which represented 5.3% of the *presupuesto teórico*, a share that, as shown in Chapter V, was estimated by Figuerola with no data. Within the general expenses sub-index, only newspapers and transport were considered, while hairdressing services and other expenditure were excluded. As for the food sub-index, cigarettes, fruits, vegetables and other goods were not taken into account.

The new long-term cost of living indices, 1912-1943

Figure 40 shows two new long-term cost of living estimates for the period 1912 to 1943: the long-term spliced series and the food and rent estimate.

Figure 40: The new long-term cost of living indices, 1912-1943

Base: 1912=100

	Food and rent CLI	Long-term spliced CLI
1912	100.0	100.0
1913	99.6	103.4
1914	108.3	109.5
1915	114.2	118.4
1916	112.0	126.1
1917	118.9	140.6
1918	124.4	171.7
1919	146.8	185.8
1920	177.7	213.8
1921	166.3	193.7
1922	150.4	168.8
1923	139.5	163.4
1924	159.8	175.0
1925	158.7	170.0
1926	158.3	164.2
1927	149.5	157.7
1928	147.7	148.9
1929	151.3	152.0
1930	148.4	150.6
1931	133.8	140.1
1932	123.5	130.7
1933	114.1	122.8
1934	105.2	114.1
1935	110.3	120.8
1936	122.0	134.0
1937	128.1	139.6
1938	125.7	136.8
1939	127.3	137.2
1940	128.3	136.7
1941	131.3	140.2
1942	141.7	152.8
1943	146.5	158.1

Source: author's estimates. See Appendix.

The purpose of the food and rent estimate was to ground it on the same goods throughout the whole period. For that reason, it is solely based on 14 food goods, rent, kerosene and charcoal. The food items accounted for are bread, cheese, coffee, eggs, flour, meat, milk, oil, pasta, potatoes, rice, sugar, wine and *yerba*. Figure 41 compares the components of the food sub-indices of the official estimates, the new comprehensive price indices, the new first Argentine CLIs, and of the food and rent series.

Figure 41: Food items considered in different estimates

1918 REA publication	1924 DGEN publication	1935 DNT publication	Re-constructed series of Bunge's CLI	Re-constructed series of the 1933 CLI	Long-term food and rent CLI
Bread	Bread	Bread	Bread	Bread	Bread
Coffee	Butter	Canned goods	Butter	Canned goods	Cheese
Fat	Cheese	Cheese	Cheese	Cheese	Coffee
Flour	Coffee	Cigarettes	Coffee	Coffee	Eggs
Meat	Eggs	Coffee	Egg	Eggs	Flour
Milk	Fat	Eggs	Fat	Fish	Meat
Oil	Fish	Fish	Flour	Flour	Milk
Potatoes	Flour	Flour	Meat	Legumes	Oil
Rice	Meat	Fruits	Milk	Meat	Pasta
Sugar	Milk	Legumes	Oil	Milk	Potatoes
Tea	Oil	Meat	Potatoes	Oil	Rice
Tobacco	Potatoes	Milk	Rice	Pasta	Sugar
Wine	Rice	Oil	Sugar	Potatoes	Wine
Yerba	Sugar	Other goods	Wine	Rice	Yerba
	Tea	Pasta	Yerba	Soda water	
	Tobacco	Potatoes		Sugar	
	Wine	Rice		Wine	
	Yerba	Soda water		Yerba	
		Sugar			
		Vegetables			
		Wine			
		Yerba			

Source: author's elaboration based on author's estimates and Bunge, 'Costo', pp. 45-51, DGEN, *El costo*, pp. 12-9, DNT, 'Costo', p. 22.

Pasta did not appear in Bunge's estimates, but given the way the other food items component was constructed by him and the availability of price data, no consumption quantity was needed to incorporate it. For all the items of the food and rent estimate, a consistent price series was established for the whole period, either because that was already determined in the official data or because it was possible to fill in the very small number of gaps, following the procedures detailed below. The prices used for all the items were retail. For rent, the IE series was considered. As for the re-constructed series of Bunge's CLI, the food and rent index implies a re-construction of practically 70% of the index elaborated in 1918, as not exactly all goods of the other food items component were considered. For the re-constructed series of the 1933 CLI, it covers 70.6% of the *presupuesto teórico*. Figure 41 shows that nine of the 14 goods considered in the food and rent series are the same as those 11 that appear in the comparison with the US and British estimates analysed in Chapter VI.⁹¹⁶ Two of the 14 are exclusive to the Argentine estimates: *yerba*, as it is an infusion only drank in particular Latin American countries; and wine, an alcoholic drink, which was a type of good not included in

⁹¹⁶ The nine are bread, cheese, coffee, eggs, flour, meat, milk, potatoes and sugar.

the US and British series. Eight of the items from the food and rent series are amongst the seventeen goods included in the China, Europe, Japan and India comparison of Robert Allen et al.⁹¹⁷ Consequently, the food and rent series resembles the inaugural official CLIs, as it is based mainly on basic food items.

Regarding the food and rent sub-index, two sets of estimates were elaborated with this information for the whole period 1912-1943. One series was estimated following Bunge's method. Within the food sub-index, meat and bread were weighted 30% each and the other food items component was a simple average of the remaining food items mentioned above plus charcoal and kerosene, which were weighted with the remaining 40%. In trying to maintain the 50-20 share of the two sub-indices considered in Bunge's index, the proportions used in the new long-term CLI were 71.5% and 28.5% for the food and rent sub-indices respectively. There was no change in the shares of this estimate because, as shown, the change in the proportions in the sub-indices was not evident in the expenditure surveys of the 1920s. The second series was estimated through Figuerola's methodology. Using the quantities of the budgets corresponding to all 46 worker families formed by a couple and two children, yearly values were obtained for each item considered. The value of that basket was estimated for each year and then an index was elaborated. The food and rent index begins with the index for 1912 to 1932 that follows Bunge's method. From 1933 onwards, the values were estimated using the annual variations obtained through Figuerola's method. The year 1933 was chosen to change the methodology of the new long-term CLI in order to use the information of the October 1933 household budget survey.

The long-term spliced series is a combination of the unchanged re-constructed series of Bunge's CLI and the IE re-constructed estimate of the 1933 CLI. Out of the different re-constructions performed here, the choice of the former is based on the fact that in expenditure surveys of the 1920s the working class showed no change in the spending. As for the second series, it was picked to have the same source of rent prices as the first one. The 1912-1943 estimate begins with values of the unchanged re-constructed index up until 1933. From 1934 onwards, the long-term spliced series is obtained using the annual variations of the IE re-constructed series of the 1933 CLI.

⁹¹⁷ The eight a bread, cheese, eggs, flour, meat, oil, rice and wine. Allen et al, 'Wages, Prices and Living Standards in China', p. 38.

Price estimates, 1912-1943

As mentioned, the rent prices used are obtained from the series put together by the students of the Statistics Seminar of the University of Córdoba, referred to here as the IE series. The gathering of this data was part of a research project that implied collecting all the existing data from housing rental ads for the City of Buenos Aires published in the *La Prensa* newspaper on the 15th of every month. Only the ads that clearly stated the number of rooms and the price were included. There was no consideration given to the size of the rooms, houses or flats. The average price of a room for each type of unit (just a room, a room in a flat, and a room in a house) was obtained dividing the sum of all rents by the number of rooms.⁹¹⁸ The values used in this research were a simple average of the three IE price series. Official DNT information was also used in this research.⁹¹⁹

The main sources of data for the remaining prices were the compilation released by the Di Tella Institute, which put together official retail prices of numerous items for the years 1901 to 1963, and the DNT, which gathered the monthly data for all the goods it considered in its 1933 CLI. The yearly estimates of the latter source are a simple average of the monthly values. The missing years have been obtained using different techniques on the basis of official sources. The following is an explanation of how the prices were obtained for each good considered in all of the estimates mentioned above.

Food prices

Bread:

1912 to 1932 (except 1922): extracted from Di Tella.⁹²⁰

1922: author's estimate based on the average of the 1921 and 1923 values.

1933 to 1943: extracted from DNT.⁹²¹

Butter:

1912: extracted from DNT.⁹²²

1913 to 1920: author's estimate based on the variations of the price of milk.

1921, 1923, 1924: extracted from DNT.⁹²³

1922: author's estimate based on the average of the 1921 and 1923 values.

⁹¹⁸ For more information on the methodology see IE, 'Precio', pp. 487-94.

⁹¹⁹ DNT, *Investigaciones Sociales*, Buenos Aires, 1940, p. 4 and DNT, *Investigaciones. 1943-45*, p. 35.

⁹²⁰ Di Tella, *Precios*, pp. 17-8.

⁹²¹ DES, *Nivel*, p. 12.

⁹²² *BDNT*, 'La alimentación', p. 224.

⁹²³ *CMDNT*, 'Productos', p. 839; *CMDNT*, 'Costo', p. 1361; *CMDNT*, 'Artículos', p. 1522.

1925 to 1932: author's estimate based on the variations of the price of milk.

Canned food:

1933 to 1943: extracted from DNT.⁹²⁴

Cheese:

1912: extracted from DNT.⁹²⁵

1913 to 1915: author's estimate based on the variations of the price of milk.

1916-1921: extracted from Di Tella.⁹²⁶

1922: author's estimate based on the average of the 1921 and 1923 values.

1923 to 1926: author's estimate based on the variations of the price of milk.

1927 to 1929: extracted from DNT.⁹²⁷

1930 to 1932: author's estimate based on the variations of the price of milk.

1933 to 1943: extracted from DNT.⁹²⁸

Coffee:

1912 to 1921: extracted from Di Tella.⁹²⁹

1922-1932: author's estimates on the basis of the price of coffee (in pound sterling) in Rio de Janeiro extracted from Global Financial Data. That price series was converted into dollars, using Ferreres' exchange rate.⁹³⁰ Then, the Di Tella estimates were converted into dollars, using Ferreres' exchange rate.⁹³¹ The annual variations of the coffee price in Rio de Janeiro in dollars were applied to the Di Tella numbers measured in dollars. These estimates were then converted into m\$n using the Ferreres' exchange rate.

1933 to 1943: extracted from DNT.⁹³²

Eggs:

1912: extracted from DNT.⁹³³

1913 to 1917: author's estimate based on the variations of the price of pasta.

1918: extracted from DNT.⁹³⁴

1919 to 1921: extracted from DNT.⁹³⁵

⁹²⁴ DES, *Nivel*, p. 11.

⁹²⁵ *BDNT*, 'La alimentación', p. 224.

⁹²⁶ Di Tella, *Precios*, pp. 14-5.

⁹²⁷ *CMDNT*, 'Artículos de consumo', p.2819; *CMDNT*, 'Artículos 1930', p. 3130.

⁹²⁸ DES, *Nivel*, p. 13.

⁹²⁹ Di Tella, *Precios*, pp. 2-3.

⁹³⁰ O.J. Ferreres, *Dos siglos de economía argentina, 1810-2004*, Buenos Aires, 2005, table 1.6.

⁹³¹ Ferreres, *Dos siglos*, table 7.2.

⁹³² DES, *Nivel*, p. 10.

⁹³³ *BDNT*, 'La alimentación', p. 224.

⁹³⁴ *BDNT*, 'Precios', p. 186.

⁹³⁵ *CMDNT*, 'Productos', p. 844.

1922: author's estimate based on the average of the 1921 and 1923 values.

1923 and 1924: extracted from DNT.⁹³⁶

1925: extracted from Di Tella.⁹³⁷

1926: author's estimate based on the variations of the price of pasta.

1927 to 1929: extracted from Di Tella.⁹³⁸

1930 to 1932: author's estimate based on the variations of the price of pasta.

1933 to 1943: extracted from DNT.⁹³⁹

Fat:

1912 to 1915: author's estimate based on the variations of the price of meat.

1916 to 1926: extracted from Di Tella.⁹⁴⁰

1927 to 1929: extracted from DNT.⁹⁴¹

1930 to 1932: author's estimate based on the variations of the price of meat.

Fish:

1933 to 1943: extracted from DNT.⁹⁴²

Flour:

1912 to 1917: extracted from Di Tella.⁹⁴³

1918 to 1921: author's estimate based on the average variations of the price of bread and pasta.

1923 to 1930: extracted from Di Tella.⁹⁴⁴

1931 and 1932: author's estimate based on the average variations of the price of bread and pasta.

1933 to 1943: extracted from DNT.⁹⁴⁵

Legumes:

1933 to 1943: extracted from DNT.⁹⁴⁶

Meat:

1912 to 1932: extracted from Di Tella.⁹⁴⁷

⁹³⁶ *CMDNT*, 'Costo', p. 1361; *CMDNT*, 'Artículos', p. 1522.

⁹³⁷ Di Tella, *Precios*, p. 15.

⁹³⁸ Di Tella, *Precios*, p. 15.

⁹³⁹ DES, *Nivel*, p. 11.

⁹⁴⁰ Di Tella, *Precios*, pp. 11-2.

⁹⁴¹ *CMDNT*, 'Artículos de consumo', p. 2819; *CMDNT*, 'Artículos 1930', p. 3130.

⁹⁴² DES, *Nivel*, p. 13.

⁹⁴³ Di Tella, *Precios*, p. 14.

⁹⁴⁴ Di Tella, *Precios*, p. 15.

⁹⁴⁵ DES, *Nivel*, p. 11.

⁹⁴⁶ DES, *Nivel*, p. 12.

⁹⁴⁷ Di Tella, *Precios*, pp. 5-6.

1933 to 1943: extracted from DNT.⁹⁴⁸

Milk:

1912 to 1921: extracted from Di Tella.⁹⁴⁹

1922: author's estimate based on the average of the 1921 and 1923 values.

1923 to 1929: extracted from Di Tella.⁹⁵⁰

1930 to 1932: author's estimate. It was considered constant because other essential goods like flour, bread, yerba, for which data existed remained invariable.

1933 to 1943: extracted from DNT.⁹⁵¹

Oil:

1912 to 1926: extracted from Di Tella.⁹⁵²

1927: extracted from DNT.⁹⁵³

1918 to 1932 (except 1927): extracted from Di Tella.⁹⁵⁴

1933 to 1943: extracted from DNT.⁹⁵⁵

Pasta:

1912 and 1913: author's estimate based on the variations of the price of flour.

1914 to 1921: extracted from Di Tella.⁹⁵⁶

1922: author's estimate based on the average of the 1921 and 1923 values.

1923 to 1932: extracted from Di Tella.⁹⁵⁷

1933 to 1943: extracted from DNT.⁹⁵⁸

Potatoes:

1912 to 1932: extracted from Di Tella.⁹⁵⁹

1933 to 1943: extracted from DNT.⁹⁶⁰

Rice:

1912 to 1932 (except 1922): extracted from Di Tella.⁹⁶¹

1922: author's estimate based on the average of the 1921 and 1923 values.

⁹⁴⁸ DES, *Nivel*, p. 11.

⁹⁴⁹ Di Tella, *Precios*, pp. 14-5.

⁹⁵⁰ Di Tella, *Precios*, p. 15.

⁹⁵¹ DES, *Nivel*, p. 12.

⁹⁵² Di Tella, *Precios*, pp. 11-2.

⁹⁵³ DNT, *Precios*, p. 5.

⁹⁵⁴ Di Tella, *Precios*, p. 12.

⁹⁵⁵ DES, *Nivel*, p. 10.

⁹⁵⁶ Di Tella, *Precios*, pp. 20-1.

⁹⁵⁷ Di Tella, *Precios*, p. 21.

⁹⁵⁸ DES, *Nivel*, p. 13.

⁹⁵⁹ Di Tella, *Precios*, pp. 14-5.

⁹⁶⁰ DES, *Nivel*, p. 12.

⁹⁶¹ Di Tella, *Precios*, pp. 2-3.

1933 to 1943: extracted from DNT.⁹⁶²

Soda water:

1933 to 1943: extracted from DNT.⁹⁶³

Sugar:

1912 to 1932 (except 1922): extracted from Di Tella.⁹⁶⁴

1922: author's estimate based on the average of the 1921 and 1923 values.

1933 to 1943: extracted from DNT.⁹⁶⁵

Wine:

1912 to 1921: extracted from Di Tella.⁹⁶⁶

1922: author's estimate based on the average of the 1921 and 1923 values.

1923 to 1928: author's estimate based on the annual variations of the price of wine for the province of Buenos Aires, extracted from Di Tella.⁹⁶⁷

1929: extracted from *Boletín del Trabajo*.⁹⁶⁸

1930 to 1932: author's estimate based on the annual variations of the price of wine for the province of Buenos Aires, extracted from Di Tella.⁹⁶⁹

1933 to 1943: extracted from DNT.⁹⁷⁰

Yerba:

1912 to 1932 (except 1922): extracted from Di Tella.⁹⁷¹

1922: author's estimate based on the average of the 1921 and 1923 values.

1933 to 1943: extracted from DNT.⁹⁷²

Other goods prices

Charcoal:

1912 to 1918: extracted from Di Tella.⁹⁷³

1919 to 1922: author's estimate. Given that prices between 1918 and 1923 did not fluctuate substantially, the 1918 value was repeated.

⁹⁶² DES, *Nivel*, p. 10.

⁹⁶³ DES, *Nivel*, p. 13.

⁹⁶⁴ Di Tella, *Precios*, pp. 2-3.

⁹⁶⁵ DES, *Nivel*, p. 10.

⁹⁶⁶ Di Tella, *Precios*, pp. 2-3.

⁹⁶⁷ Di Tella, *Precios*, p. 66.

⁹⁶⁸ *Boletín del Trabajo*, 'Prolijo trabajo de la División de Estadística', 16, 1940, pp. 34.

⁹⁶⁹ Di Tella, *Precios*, p. 66.

⁹⁷⁰ DES, *Nivel*, p. 14.

⁹⁷¹ Di Tella, *Precios*, pp. 29-30.

⁹⁷² DES, *Nivel*, p. 14.

⁹⁷³ Di Tella, *Precios*, p. 59.

1923 to 1932: extracted from Di Tella.⁹⁷⁴

1933 to 1943: extracted from DNT.⁹⁷⁵

Kerosene:

1912: author's estimate based on the annual variations of the price of kerosene for the province of Buenos Aires, extracted from Di Tella.⁹⁷⁶

1913: author's estimate based on the average of the 1912 and 1914 values.

1914 to 1918: extracted from Di Tella.⁹⁷⁷

1919 to 1922: author's estimate. 1923 price repeated, as it was very similar to previous numbers. 1918 value seemed an outlier.

1923 to 1932: extracted from Di Tella.⁹⁷⁸

1933 to 1943: extracted from DNT.⁹⁷⁹

Newspaper:

To estimate a newspaper price series to incorporate to the first Argentine CLI, data was gathered from the newspaper *La Prensa*. This newspaper was one of the most important of the time and it consistently published in its front page the price at which it was sold. Data was collected for every Wednesday of the month. The monthly as well as the annual means were constructed as simple averages. The same procedure was unsuccessfully performed with the newspaper *La Nación*, as its price could not be found.

Once the price data was collected, it was discovered that the price stated in the *presupuesto teórico* of the 1933 CLI did not correspond to the information gathered. While the DNT stated that the price for a newspaper was m\$0.05 in October 1933, research has shown that in that same month it was m\$0.10. Thus, the quantities of the different budgets were estimated using the latter value. This price correction shows more feasible quantities for the number of newspapers purchased per month. Nevertheless, the odd quantity numbers for the higher wage bands relates to the fact that in that case, the category also included books.

Soap:

1933 to 1943: extracted from DNT.⁹⁸⁰

⁹⁷⁴ Di Tella, *Precios*, p. 60.

⁹⁷⁵ DES, *Nivel*, p. 14.

⁹⁷⁶ Di Tella, *Precios*, p. 92.

⁹⁷⁷ Di Tella, *Precios*, p. 62.

⁹⁷⁸ Di Tella, *Precios*, p. 63.

⁹⁷⁹ DES, *Nivel*, p. 15.

⁹⁸⁰ DES, *Nivel*, p. 15.

Transport:

The October 1933 household budget survey asked respondents about transport expenses. In the breakdown of all the data, there was a value for each family's expenditure on this category. Nevertheless, when publishing prices, the DNT never published the price of any transport service. As they did with clothing, the DNT only presented an index for the general expenditure component.

In the elaboration of the *presupuesto teórico*, it can be seen that the price of a transport journey in October 1933 was m\$0,075. The value for that service in the *presupuesto teórico* was m\$3.60, which corresponded to 48 journeys a month.⁹⁸¹ A 1946 DNT publication had detail estimates for all the goods and services of the *presupuesto teórico* from 1939 to 1945 and not just for the five main components. There it can be seen that the value for transport stayed constant at m\$3.60 from 1939 to 1942.⁹⁸² Given that the quantities of the budget were not updated, one can infer that between 1933 and 1939 the price of an average journey stayed constant at m\$0,075. That price was applied to all the estimates.

⁹⁸¹ DNT, 'Costo', p. 22.

⁹⁸² DES, *Nivel de vida*, p. 37.

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⁹⁸³ The collection gathers lectures, papers and addresses made by Arthur L. Bowley.

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