

The London School of Economics and Political Science

Multiple Exchange Rates and Industrialization in Brazil, 1953-1961: Macroeconomic Miracle or Mirage?

Bernardo Stuhlberger Wjuniski

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Declaration

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Abstract

This dissertation revisits Brazil's experience with multiple exchange rates (MERs) between 1953 and 1961. Exchange controls such as MERs were common across the world during the early days of the Bretton Woods arrangement, despite the resistance from the International Monetary Fund (IMF), which assumed they caused instability and balance of payments crises. Latin America's use of exchange controls was widespread, with different exchange rates also adopted as instruments to stimulate import substitution industrialization (ISI). Brazil's MER system was, however, a unique experiment, with all the country's imports included in a regime of auctions of foreign exchange, resulting in a controlled depreciation process with different sectoral exchange rates. The experience had two phases, the first of which diverged from other cases in the region in lasting much longer, maintaining stable macroeconomic conditions, and avoiding IMF interventions. The second phase resulted in a decline of the system's macroeconomic effectiveness and its eventual collapse in 1961. This research investigates the peak and decline of Brazil's MER systems by analyzing a new quantitative dataset that is further complemented by qualitative sources. The main thesis is that Brazil's MER regime was a 'successful' experience during its first phase, with a singular design that supported the stabilization of macroeconomic conditions. Officials were 'guiding the invisible hand' of the market to help balance macroeconomic variables. The dissertation also shows that the MER system was not a protectionist instrument to stimulate import substitution in advanced sectors and did not generate distortions to sectoral industrial growth. It was, however, transformed during its second phase into a mechanism to subsidize private sector imports and increase the government's direct participation in the industrial effort, which was an industrial deepening process with costly macroeconomic consequences.

To Naty and Arthur

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Abbreviations

Banco Nacional de Desenvolvimento Econômico – **BNDE**

Bretton-Woods - **BW**

Centro de Pesquisa e Documentação de História Contemporânea do Brasil -
CPDOC

Conselho de Política Alfandegária – **CPA**

Cruzeiros – **Cr\$**

Economic Commission for Latin America – **CEPAL**

Foreign Direct Investments – **FDI**

Fundação Getúlio Vargas – **FGV**

Gross Domestic Product - **GDP**

Grupo Executivo da Indústria Automobilística – **GEIA**

Import Substitution Industrialization – **ISI**

Instituto Brasileiro de Geografia e Estatística – **IBGE**

International Monetary Fund – **IMF**

Multiple Exchange Rate – **MER**

Ordinary Least Square – **OLS**

Partido Comunista Brasileiro – **PCB**

Partido Social Democrático – **PSD**

Partido Trabalhista Brasileiro – **PTB**

Programa de Estabilização Monetário – **PEM**

Promessa de Venda de Câmbio – **PVC**

Shadow Exchange Rate – **SER**

State-owned company – **SOE**

Superintendência de Moeda e Crédito – **Sumoc**

União Democrática Nacional – **UDN**

US\$ – **United States Dollar**

Vector Autoregression – **VAR**

Vector Error Correction – **VEC**

1. Introduction

Fixed exchange rates have been at the core of global monetary systems for a large part of the last two centuries (Bordo, 1993, p.3). They appeal to governments and policymakers due to their predictability, which facilitates investment and trade decisions, and reduces the risk of exchange rate volatility for foreign investors (Marston, 1993, p. 515). Today, following 40 years of financial liberalization after the end of the dollar-gold peg in 1973 and the numerous currency crises that followed, it is common to see nostalgic calls from economists for the return of one of the previous fixed global exchange rate regimes.¹ Bretton Woods, the last such regime to regulate international finance, which lasted from the original agreement in 1944 until 1973, is remembered as a period of great stability, integration and expansion of trade, and economic growth, based exactly on the support of the fixed exchange rate arrangement (Frieden et al, 2000, p. 5).

The fast recovery of international trade and economic growth after the Second World War has been attributed to the stability of the Bretton Woods regime (Bordo, 1993, p. 4). Between 1948 and 1968, the volume of global trade grew by 290%, an average of 14.5% per year (Terborgh, 2003, p. 3), while the global economy grew by 4.2% per year on average (Eichengreen, 1993, p. 1). At the same time, only 2.5% of the 145 countries in the Bretton-Woods system were without an official pegged exchange rate (Obstfeld et al, 2005, p. 425). Bordo

¹ In 2008 and 2009, important global policymakers made calls for the return of a rules-based monetary system like Bretton Woods. Former Federal Reserve Bank Chairman Paul Volcker and Former European Central Bank President Jean-Claude Trichet were two of the voices raising this debate. This debate has been reported by the media and a summary can be found in Hoefle (2008).

(1993, p. 4) identifies this strong economic performance and the stability in financial markets of the Bretton Woods arrangement and asks: 'Was Bretton Woods successful in producing economic stability because it operated during a period of economic stability, or did the existence of the adjustable peg regime produce economic stability?'. Although he seems to suggest there might be more than meets the eye to the correlation, the stability of fixed exchange rates and economic growth explains why the Bretton Woods arrangement has been unattractive for economic historians, so that it remains relatively understudied (Reinhart & Rogoff, 2002, p. 2).

This paradigm has recently been challenged by a few important contributions to the literature. Bordo (1993, p. 4) himself, although never answering the question, further asked if Bretton Woods' 'statistical stability [was] an illusion – belied by the presence of continual turmoil in the foreign exchange markets?'. Reinhart and Rogoff (2002, p. 31) claim it was: they estimated that about half of exchange rate arrangements in the 1950s and 1960s had dual or parallel rates, even if official pegged rates kept being reported to the International Monetary Fund (IMF) by countries that were part of the arrangement. Monnet and Puy (2015, p. 30) argue that most countries had overvalued or undervalued exchange rates compared to their long-term economic fundamentals for most of that period, including the United Kingdom, Germany, and Switzerland. In Latin America, although almost all countries were founders of the IMF, and consequentially adopted fixed official exchange rates, at least 14 countries used parallel or multiple exchange rates (MERs) during the 1950s (Konig, 1968, p. 39). Different exchange rate regimes were also a pattern across Europe and Asia (Edwards, 1987).

Bretton Woods was indeed an extremely unstable arrangement in its early days. Full currency convertibility between Europe and the USA was only reached in 1958; there was an enormous shortage of global liquidity in the 1940s and the first half of the 1950s due to the creation of the dollar-standard; and the IMF was still a weak and developing institution incapable of performing as a trusted lender of last resort for countries with balance of payment difficulties (Horsefield, 1969). Bretton Woods was theoretically designed to solve the 'Impossible Trillema', restricting capital flows to allow currencies to remain pegged and countries to have independent monetary policies (Garber, 1993, p. 483). But this was not reflected in reality, as at least half of the countries with official exchange rates were adopting some form of parallel exchange rate or MERs to remain with the framework of the system (Reinhart & Rogoff, 2002, p. 31).

This role of exchange and capital controls was central to the instability of the Bretton Woods regime but has gained little attention in the literature. The study of these instruments is still largely concentrated on the last forty years, after the increase in financial flows following the end of the dollar-gold peg in 1973, the so-called 'era of financial liberalization'. According to Schulze (2000, p. 1), during the 1990s, 144 countries adopted controls on direct investments and 128 controlled transactions on capital market securities. And since restrictions to free capital flows are contrary to the current paradigm of liberalization, these instruments have been analyzed by scholars with skepticism and strongly negative assumptions about their desirability (Magud et al, 2011; Cardoso & Goldfajn, 1997). The same is not true for the Bretton Woods era. As capital controls were theoretically an essential part of the regime to maintain exchange rates pegged and permit independent monetary policies, they are simply

assumed to be an effective part of the system. For this reason, the effectiveness of controls has not been comprehensively tested by historians of the period (the best exceptions are Giovannini, 1988; Reinhart & Rogoff, 2002). There are many fewer studies of controls during Bretton Woods because they are seen as the norm rather than the exception for that arrangement (Marston, 1993, p. 515).

This lack of studies is the result of a misleading view of the Bretton Woods regime that does not differentiate between the roles of capital and exchange controls (Frieden et al, 2000, p. 5). While capital controls were indeed a central instrument for the arrangement and were accepted by the IMF to maintain pegged currencies, exchange controls were not (Terborgh, 2003, p. 14). Exchange controls are interventions in current account flows that restrict trade via controls on foreign exchange transactions, while capital controls are only targeted at capital account transactions. The IMF considered exchange controls as instruments for competitive devaluation and a source of global financial instability (Horsefield, 1969). Interestingly, though, both instruments have technically the same macroeconomic effect. Dual exchange rates, quotas, or other quantitative restrictions to flows have the exact same effect as applying a tax on a category of international transaction of the balance of payments (Adams & Greenwood, 1985, p. 56).

During the 1950s the IMF distinguished between these instruments. While it accepted capital account restrictions, it was strongly against interventions in trade flows and the current account (IMF, 1967). The Bretton Woods monetary arrangement was based on free markets of pegged exchange rates to stimulate the recovery of global growth and trade, and defending this stance was the main role of the IMF in its early days. Various forms of exchange controls were, however, common during that period. Most countries adopted different

exchange rates and the extent of their use depended on how difficult it was for them to keep official exchange rates pegged within the structure of the system (Frenkel & Rapetti, 2010, p. 13). Giovannini (1998, p. 11) argues that there were large asymmetric responses among countries in their use of exchange controls, which was a direct consequence of an unstable Bretton Woods system. Not following the IMF policy guide was, in fact, also the norm rather than the exception, and this essentially meant using some degree of permanent exchange controls. Hence Bordo raised the correct question when he asked whether the statistical stability of Bretton Woods was a mirage, behind which hides significant turmoil in exchange rate markets without official recognition. Eichengreen (1993, p. 626) follows the same line and concludes that 'there was nothing particularly admirable about financial market performance under Bretton Woods', although he too does not investigate what was behind the statistical appearance of stability.

While under Bretton Woods controls have been understudied and incorrectly assumed to simply function properly, a similar criticism can also be made of the literature's negative assumptions about capital controls over the last forty years, as they are assumed to be *ex-ante* ineffective and always a source of economic distortions (Magud et al, 2011, p. 3). There is a theoretical and empirical agreement in the recent literature that individual experiences should be analyzed based on a methodological approach that requires controls to be proved effective, as they are assumed to be economically inefficient (Schultze, 2000). During the last few decades a large number of papers with both cross-

country and case studies have followed this methodological line,² testing whether controls led to better economic conditions based on their stated objectives, but always assuming controls need to be proven effective, given the standard that free flows are always the best option. Most of them have reached the same policy prescription, being generally against the use of capital controls but agreeing that they might sometimes work for specific purposes without a ‘one size fits all’ rule (Habermeier et al, 2011; Ostry et al, 2010).

Recently, however, this negative assessment has been challenged, with scholars and the IMF gradually moving away from their previous assumptions about controls. After being against capital controls for many years after the end of the Bretton Woods regime, in the last decade IMF policy guidance papers have reassessed the institution’s policy advice on the subject. The IMF now accepts that controls can have an important role in smoothing capital volatility, mainly by reducing the pace or altering the composition of inflows to specific economies in moments of high global liquidity (Ostry et al, 2010, p. 5). But still the IMF is not entirely sure of where and when these controls should be adopted. In one of its most recent staff discussion notes, their conclusion was that ‘[f]or reasons that are not yet *fully understood*, capital controls and related prudential measures achieve their stated objectives in some cases but not in others, and it is not possible to draw definitive conclusions’ (Habermeier et al, 2011, p. 4).

² The most important cross-country studies are Habermeier et al (2011), Ostry et al (2010) and Magud et al (2011). There is also a long literature of case studies, which includes Cardoso and Goldfajn (1997), Capion and Neumann (2003), Carvalho and Garcia (2006), Fratzscher (2012), Goldfajn and Minella (2005), Kovanen (1994), and Marion (1994).

The IMF has thus shifted to a position of analyzing case-by-case situations, evaluating the role of controls depending on their design, objectives, and results in each specific circumstance. The same approach is also emerging in the recent academic literature. Magud et al (2011, p. 1) state that there are multiple definitions of what constitutes 'success' for the implementation of controls, as it depends on policymakers' objectives. This means that it is hard to separate out whether controls were successful only for their intended purposes or more broadly for the economy. The instruments should therefore be tested with pragmatism to not impose pre-existing views about their expected effectiveness. Clearly, a final conclusion on the subject is far from being established and additional case studies can shed light on the historical role of controls.

The history of Latin America is one of the most interesting for understanding the role of exchange controls under the Bretton Woods system. During the 1950s, as primary goods exporters and importers of manufactured products, most Latin American countries faced constraints to increasing export receipts and raising dollar inflows. The opening of import markets after the Second World War resulted in significant pressures for more foreign exchange (Baer, 1972, p. 97). With closed capital accounts, intervening in the trade balance to restrict imports became a pattern across the region. The use of exchange controls, particularly MER systems, rapidly grew as the most common instrument to restrict imports and try to adjust the balance of payments. But the instrument was adopted in very different forms. There were a variety of MER arrangements, with some countries only imposing very small margins between exchange rates, such as Cuba or Honduras, while others allowed large differences, such as Argentina and Brazil (Konig, 1968, p. 39), although most

regimes sought to privilege essential goods. Different systems were slowly developed from the breakdown of the gold standard in the 1930s to become very complex arrangements in the immediate post-war period (Frenkel & Rapetti, 2010, p. 15; Baer & Hervé, 1962, p. 176).

The IMF also played a central role in Latin America's MER systems, mostly by trying to force countries not to use these instruments. During its first years, the IMF adopted a moderate stance on MER regimes, essentially allowing them to remain in place and expecting that countries would migrate back to the dollar standard with the increase in liquidity and convertibility produced by the Bretton Woods system (Konig, 1968, p.41). The IMF considered it a transitional period for the global economy and allowed countries to adopt systems that were different from its official guidelines. During the 1950s, however, as it gained global importance and developed its internal structure, the IMF started to strongly oppose the use of MERs and by the mid-1950s had forced many Latin American countries out of these regimes by making it a condition for stabilization programs to provide balance of payments funding (Edwards, 1989; IMF, 1954, p. 74). Chile and Bolivia in 1956, Paraguay in 1957, Argentina in 1958, and Uruguay in 1959 were all cases of the IMF forcing the removal of MER arrangements (Konig, 1968, p. 41). These were also all cases when MER experiments produced distortions and led to large balance of payments disequilibria, which provided the IMF with bargaining power to demand changes to exchange rate policies as conditions for its support.

At the same time, the Latin American experience with exchange controls was strongly linked to the region's industrialization process. The post-war period was a moment of structural change for the region, as most countries produced impressive industrial growth (Efrench & Palma, 1990). This post-war industrial

development is largely interpreted in the literature according to the import substitution industrialization (ISI) model that was first identified by Hirschman (1968). The ISI model was a set of ideas based on the concept that the 'appropriate strategy for development was to replace imports from the rich North with their own domestic production' (Bruton, 1998, p. 907). To achieve this goal, the ISI model sought to promote the growth of the local industrial sector, with government given a key planning and execution role in the process.

Although ISI could be achieved through many different measures, most of the literature has emphasized the use of protectionist instruments, such as tariffs or exchange rate controls, to develop local manufacturing sectors and correct for what was seen as a long-term dependency on primary commodity exports. The prescription of protectionist instruments to stimulate industrialization was already strongly present in the academic debate of the period, with Raul Prebisch, Celso Furtado, and more generally the Economic Commission for Latin America (CEPAL) providing the main source of theoretical justification for the strategy (Bielschowsky, 1996; Love, 1996). But ISI as a model to interpret the period was later developed by a large literature of American scholars on Latin America (Haber, 2006; Hirschman, 1968; Taylor, 1998, Fishlow, 1972; Coatsworth & Williamson, 2004). This framework sees the import substitution process as the result of a relationship between governments and industrialists, with policymakers favoring protectionist instruments that are not only targeted at the development of their countries but also benefit the government, both to gain political support and build rent-seeking schemes.

There is, however, not enough evidence to support the assumption that protectionist instruments actually promoted industrialization. The use of

instruments for favoring local manufacturing sectors was widely established across Latin America, including high tariffs, import licenses, and exchange controls. MER systems are generally claimed to have been designed to stimulate industrialization, both in the region and in Brazil (Kaufman, 1990; Fishlow, 1972; Tavares, 1975; Weisskoff, 1980; Versani & Barros, 1977; Baer, 1972). Different sectoral exchange rates provided weaker currencies for manufacturing sectors that were to be promoted, in order to substitute local production for imports. Yet the literature has not properly studied the effect of the instruments on industrialization, and has only looked at the industrial outcomes to justify the instruments, without testing the causal relationship.

Given that MERs have been seen by scholars as an instrument to both stabilize the balance of payments and also to stimulate industrialization, this raises an important question about whether the Latin American experiences failed because they were indeed ineffective at balancing macroeconomic conditions, as claimed by the IMF at the time, or because the MER systems were in fact targeted at stimulating industrialization, leaving macroeconomic balance aside. This brings the political economy aspect of those experiments. There is a long literature on the political economy of capital controls in the post liberalization era that assesses whether they were used for their official purposes – usually correcting a form of market inefficiency – or were simply the result of rent-seeking by policymakers (Alesina & Tabellini, 1989, p. 2; Alesina et al, 1993, p. 12), such as favoring political supporters, maximizing taxation, or subsidizing parts of the local economy (Shultze, 2000, p. 35). Some authors have also argued that protectionist instruments were used to provide rents to governments and industrialists (Haber, 2006; Taylor, 1998; Baer, 1972). This reinforces the question of what were the true objectives behind the use of MERs

in Latin at that time, and whether the political economy aspect explains the failure of those instruments to resolve balance of payments crises or if it was due to their macroeconomic design.

Brazil's 1950s MER experience is an excellent case study to test and challenge many of these views on exchange controls and industrialization. The post-war period in Brazil was a period of important economic development, with fast economic growth propelled by a significant industrialization process through the use of a complex MER system (Klein & Luna, 2014, p. 145, Baer, 2009, p. 57; Vianna & Villela, 2005, p. 5). The period between 1945 and 1964 was a moment of rising democratic representation, with four different elected presidents in the middle of two long periods of autocratic regimes (1930-1945 and 1964-1985) (Klein & Luna, 2014, p. 143). Industrial growth averaged almost 10% per year in the 1950s, and GDP growth averaged 7.3% (IBGE, 1950-1960); the country expanded into the interior with the construction of its new capital Brasilia; it became more urbanized; and the manufacturing sector was transformed with the development of modern advanced industries, such as motor vehicles and capital goods (Aldrighi & Colistete, 2013, p. 6). Werner Baer describes the period:

Brazil has undergone profound socioeconomic changes since the Great Depression of the 1930s, especially since World War II. Its economy, which for centuries had been geared to the exportation of a small number of primary products, has become dominated by a large and diversified industrial sector in a relatively short period of time. At the same time, Brazilian society, which had been predominantly rural, has become increasingly urbanized. (Baer, 2009, p. 1)

The changes to the industrial sector in that period were impressive. Between 1947 and 1955, during the Getulio Vargas administration (1951-1954), the industrial sector grew at an average of 7% per year, increasing its share of GDP from 17% to 22% (IBGE, 1951-1954). Industry's internal structure changed significantly, moreover, with an increased participation of dynamic branches due to the greater production of durable consumer goods, intermediate goods, and capital goods (Versani and Barros, 1977, p. 239). The period 1956-1961, during the Juscelino Kubitschek presidency, saw a further acceleration of the industrialization process with industrial output growing at an annual cumulative rate of 9%, while GDP grew at 7% (IBGE, 1956-1961). This was the period of Kubitschek's famous Target Plan ('Plano de Metas'), an ambitious and comprehensive infrastructure and industrial investment program. The decade is seen as a period of diversification and integration of the industrial structure, in which advanced industries, including consumer durable goods but also capital goods, were developed in the country (Tavares, 1975, p. 95).

It is unsurprising, then, that the two governments, particularly Kubitschek's, are remembered with nostalgia by scholars and the Brazilian public (Klein & Luna, 2014, p. 146; Baer, 2009, p. 67). They were seen as pioneers of Brazil's modernization and industrialization, with Kubitschek in particular capable of delivering massive economic growth, modernization, and the territorial expansion of the country in a very short period of time. Although they had quite different economic policies, as will be discussed below, the Brazilian literature sees the governments as the continuation of the same economic model: a national strategy of industrial development responding to the rise of a new urban and industrial society (Klein & Luna, 2014; Baer, 2009; Vianna, 1987; Sochazewski, 1980; Lago, 1982).

The 'lost decades' of the 1980s and 1990s, which saw average annual growth rates of 2.3% and 1.8% respectively (IBGE, 2017), make the 1950s look even more attractive from an historical perspective, but also explain the lack of attention of Brazilian scholars to that decade. With low economic growth, external debt default, and hyperinflation, the 1980s and 1990s have provided enough material to be the main focus of Brazilian economic historians over the last few decades. There is still a large literature from the 1970s and 1980s about Brazil's industrialization process in the 1950s that is largely supportive of the industrial results of the period, ideologically linked to CEPAL and the ISI model (Tavares, 1975; Weisskoff, 1980; Versani & Barros, 1977; Baer, 1972; Bergsman, 1970). Thereafter there have been fewer studies that revise the industrialization of the post-war period from different perspectives (for example, Abreu et al, 1997; Colistete, 2006; Kaufman, 1990). But even these recent studies have not challenged the the role of tariffs and MERs, and the consensus persists.

The literature on Brazil's MER experiment fits this framework and has generally assumed the success of the MER experience and its support for industrialization without really testing it. Studies on the subject come from different periods but have reached similar conclusions: They generally consider the experience as a 'successful' case of exchange controls, which managed to stabilize the balance of payments at the same time while supported industrialization (Kafka, 1956; Huddle, 1964; Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987; Sochazewski, 1980; Bergsman, 1970; Abreu, 1990; Caputo, 2007).

The MER system in Brazil was indeed unique when compared to the rest of the region and in the context of the Bretton Woods arrangement. It was created by

the Superintendência de Moeda e Crédito (Sumoc), the Brazilian monetary authority during 1946-1964, which later became the Brazilian Central Bank, in response to a deterioration in the balance of payments in 1952, when the country ran out of international reserves and its balance of payments was in deficit by almost US\$700 million (IBGE, 1952). This deficit was the result of a long period when the exchange rate was overvalued, kept fixed at the 1939 level of Cr\$ 18.7 cruzeiros per dollar between 1945 and 1952, without correcting for an average 20% annual inflation during the period (Vianna, 1987; Huddle, 1964). Instead of only imposing widespread controls on outflows or allowing a massive devaluation of the currency – which was the case in most other Latin American countries (Konig, 1968, p. 40) – Sumoc established a regime of foreign exchange auctions to simultaneously control the level of imports, devalue the currency, and provide different exchange rates for different categories of imports. The system auctioned different quantities of foreign exchange for each category in order to reach distinct devalued exchange rates. And while it was a direct response to a balance of payments crisis, it also provided revenues to the government through the taxation of the auctions and a subsidy to exporters with the transfer of part of those revenues as bonuses (Vianna, 1987, p. 105; Sochaczwesky, 1980, p. 127).

The MER system lasted for eight years, beginning in 1953. Changes were made to its structure in 1957, and there followed a slow decline towards collapse during another balance of payments crisis in 1961 (Lago, 1982, p. 102). While the system had the same end as its neighbors', its singularity lies in its characteristics. The MER regime used a unique mechanism of auctions to distribute foreign exchange, resulted in a stable macroeconomic environment and survived for much longer than in the rest of the region. It only collapsed,

according to the existing literature, because of the decline in coffee prices at the end of the decade, which reduced the export receipts to be offered at the auctions (Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987).

There are, however, many aspects of this experiment that remain unclear and could be used to challenge the established literature on Bretton Woods, Latin America, and Brazil's industrialization. If the MER system indeed worked in Brazil but not in other Latin American countries, the reasons behind this 'success' have not been explored. How were policymakers capable of centralizing foreign exchange and at the same time providing enough liquidity to all relevant sectors? How was the distribution of foreign exchange made, and why were officials getting macroeconomic results right? Why there was no emergence of a black-market for exchange rates? The answers to these questions provide interesting insights on the efficiency of exchange controls in the form of multiple exchange rates. They clarify how a country was capable of responding to the unstable conditions of the early Bretton Woods era using exchange controls despite the opposition of the IMF.

It is also worth examining whether the centralized distribution of foreign exchange created inefficiencies for the rest of the economy. Was the system really efficient for the whole economy or did it only manage to stabilize the balance of payments by causing large distortions for different sectors? What would have happened if all sectors had had the same market exchange rate instead of going through the auction system?

Finally, the case can contribute to an understanding of Brazil's industrialization process and the political economy of that time. What were the political motivations for the use of MERs in Brazil? Why did politicians opt for that

specific design? Was the system indeed an important instrument for industrialization policies in that period? If not, can the period's industrialization still be interpreted through the ISI model? If it was so successful for both efficiency and industrialization, why did it eventually fail? What are the alternative interpretations of industrialization in that period that go beyond the ISI model?

These questions have not been addressed by the literature, which concentrates on the historical narrative and assumes that the MER system was an effective way to keep the balance of payments stable as part of the ISI model (Kafka, 1956; Huddle, 1964; Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987; Sochazewski, 1980; Bergsman, 1970; Abreu, 1990; Caputo, 2007). It is interesting, however, to note that scholars have never made the connection between the different aspects of the experiment. If the MER system was indeed 'successful', as claimed by many authors, then it challenges the assumption that exchange controls were a cause of instability, which is part of the standard understanding of Bretton Woods. But if it was not 'successful', then it challenges the positive view of the subject and its relation to industrialization. The final objective of this research is to assess whether the experiment was a 'successful' case of MERs and qualify what this success means.

The main conclusions of this research, which answer the above questions, are the following. By revisiting the peak and decline of the Brazilian MER system between 1953 and 1961, this thesis reveals that during its first phase (1953-1957) the MER system was able to stabilize the balance of payments and support macroeconomic conditions based on officials responding to fluctuations in market demand for foreign exchange and the use of minimum prices in foreign exchange auctions. This strategy, which combined the auctions mechanism

with a responsive behavior by authorities, resulted in an interesting system that helped to gradually make the exchange rates depreciate after a long period of overvaluation, while at the same time restricting the overall availability of foreign exchange to the economy to reduce import levels and stabilize the balance of payments. Authorities were 'guiding the invisible hand' of the market and this was the key factor behind the effectiveness of the first MER phase.

This thesis also reveals that, during its second phase between 1957 and 1961, the decay and collapse of Brazil's MER system was due to the increase in imports outside of the auction system, which was driven by the rise in direct government imports and exemptions given for private sector imports. The system did not collapse because of its original design or the fall of export receipts from coffee producers, as has been assumed in the literature, but because of its gradual disuse. This new interpretation of the peak and decline of the MER system shows that there were in fact two different systems, resulting in distinct macroeconomic outcomes during the two periods.

To complement these conclusions, this research also performs a counterfactual exercise to assess whether sectoral industrial production would have been different if every industrial sector had received the same market exchange rate. By replacing the auction exchange rate with the free market exchange rate for a pool of industrial sectors, the test assesses whether the effective macroeconomic results observed during the first phase of the MER were not also generating important 'distortions' for the rest of the economy. This also tests the effectiveness of the MER system as an instrument of ISI for advanced sectors, since the existence of 'distortions' on sectoral industrial growth – that is, the better or worse performance of a sector with the MER system – would

suggest that it was an effective policy tool to stimulate industrialization and affect the performance of different sectors. The results reveal that during the whole period of the auctions, the overall level of 'distortions' was minimal, both for individual sectors as well as for the industrial sector as a whole.

Finally, the last part of this thesis assesses why the original system was not kept in place after 1957 if it supported effective macroeconomic results in its original design and did not cause 'distortions'. Based on quantitative and qualitative evidence, it concludes that during the second phase after 1957, the MER system was used as part of a national development strategy to generate the accelerated industrial growth of advanced sectors, transferring the import business directly to industrialists and the government and shifting the government's main source of revenues from the MER system to tariffs to fund its increasing participation in industry. This redistribution created the incentives and channels for an industrial deepening process in Brazil, which was the main objective of the Kubitschek government, but neglected to maintain a macroeconomic balance.

These conclusions are based on new primary sources from the period that have not been used by scholars before. Vianna (1989a, p. 105) states that 'there is still an absence of a larger volume of primary material on this topic'. And while economic historians have used aggregate data of the balance of payments to assess the MER regime, studies have yet to research the quantitative data of the auction results, which is done in this dissertation by assembling a large set of new primary material. This includes exchange rates, quantities of foreign exchange offered and auctioned by authorities, and revenues and subsidies collected and provided by the government between 1953 and 1961. This information was gathered from the original documents from the institutions

that designed and managed the system in the 1950s: Sumoc and Banco do Brasil.

Although the new dataset supports the new interpretation of the MER experience of this dissertation, the institutions of the time did not record all the potential information from the MER regime. Their documents did not report the quantitative data on the distribution of foreign exchange across the 20 auctions houses of the country, the results of the sequential auction rounds which took place at each day at those locations, and also did not differentiate between the quantities of foreign exchange auctioned and offered to the different categories. As it will be shown throughout the dissertation, these details would have further supported the tests analysis performed in this research.

Still, the new dataset is comprehensive and an important empirical contribution to Brazil's economic history and to global international databases. The scholarship and the IMF have constructed statistical datasets which only use Brazil's official fixed exchange rate³. The new dataset, by contrast, contains full series of multiple exchange rates, the free market exchange rate for services and the capital account, and the MERs for importers and exporters. This data changes the existing datasets of the period, allows a new interpretation of the MER experience and consequentially supports the future research of economic

³ The best-known datasets for Brazil's macroeconomy include only the official exchange rate reported to the IMF in the 1950s. These include datasets of the Central Bank (<https://www3.bcb.gov.br/sgspub/>), the Instituto de Pesquisa Economica Aplicada (IPEA) (<http://www.ipeadata.gov.br>), and the IMF (<http://www.imf.org/en/Data>).

historians in this topic. This data is at the core of the dissertation and is presented in Appendix 3.

To frame the quantitative data, this research has also obtained qualitative sources from the period, including the minutes of the 1175 meetings of Sumoc between 1945 and 1964, Sumoc's 293 Instructions and 113 Decisions (called *circulares*), and the personal archives of Getulio Vargas and Juscelino Kubitschek to understand the political economy context of that time. Finally, information from newspapers of the period, as well as the IMF's annual reports, complements the body of qualitative sources used.

The dissertation is organized to address the above questions. It begins by situating the Brazilian case within its broader context, and then it focuses on the specifics of the MER system. Chapter 2 surveys the international context of the Bretton Woods period and the theoretical debates about exchange and capital controls. It also discusses methodological aspects of how to empirically assess capital and exchange controls and test their effectiveness. The chapter provides essential context on the debates on exchange rates, in order to situate the Brazilian MER experience.

Chapter 3 presents the historical and historiographical context of 1950s Brazil, placing the Brazilian case within the general Latin American context of industrialization. The chapter introduces important debates related to the rise of industrialization in Brazil and Latin America, the historiographical interpretation of the ISI model, and reviews the political history of Brazil.

Chapter 4 analytically reviews the chronological experience of exchange rate policies in Brazil from the immediate post-war period to the start of the MER system in 1953. It then examines the main characteristics of exchange rate

policies in Brazil prior to the MER regime, when the exchange rate was pegged to the dollar between 1946 and 1952.

Chapter 5 continues the chronological review of exchange rate policies in post-war Brazil by analyzing the rise and decay of the multiple exchange rate regime between 1953 and 1961 and discusses its collapse with the devaluation of the official exchange rate to Cr\$ 215 cruzeiros per dollar.

Chapter 6 assesses the effectiveness of the MER system by exploring the reasons why it was able to stabilize the balance of payments during its first phase between 1953 and 1957. It analyzes the allocation of foreign exchange in the auctions by searching for patterns of how officials were able to effectively stabilize the balance of payments using a centralized auctions mechanism.

Chapter 7 examines whether the MER system of the 1950s in Brazil caused negative externalities to different industrial sectors. While the MER system supported good macroeconomic results, it imposed large exchange rate differentials on the various industrial sectors. The chapter performs a counterfactual exercise to measure the performance of industrial production under a single market exchange rate, rather than the MERs. The chapter is, at the same time, a check of the existing ISI consensus interpretation of the MER system.

Chapter 8 focuses on the political economy of the system, especially the modification made to it in 1957, which led to its collapse in 1961. This is key to understand the MER experience, as it explains why the Kubitschek government did not keep the original MER regime if it was functioning to maintain macroeconomic stability. Given that there were no substantial observable changes in macroeconomic conditions that could have triggered a shift in

policy, the chapter explores whether the 1957 reforms were intended to benefit the government and industrialists. The chapter uses quantitative and qualitative materials to understand the political economy of welfare redistribution under the two systems, offering a new explanation of the decay and collapse of the MER experiment in Brazil

Overall, the main contribution of this dissertation is a novel explanation of the peak and decline of the MER system in Brazil. The 'success' of the MER system during its first phase between 1953 and 1957 is explained by a responsive approach from authorities to changes in market demand and the use of minimum prices. This resulted in a controlled depreciation of the exchange rates, which did not produce 'distortions' for the economy and stabilized the balance of payments and other macroeconomic conditions. The decay and collapse of the MER system are explained by the rise in imports outside the auction system between 1957 and 1961. They were used to subsidize the private sector and finance the increased government role in the economy. The system after 1957 produced industrialization of advanced sectors, but at the expense of macroeconomic stability. This thesis presents two phases of the MER experience in Brazil, resulting in distinct macroeconomic consequences. In this way, the dissertation challenges the existing interpretation of Brazil's economic history in the 1950s which has understated the role of the MER regime for macroeconomic stability and reveals its actual role for industrialization.

2. Bretton Woods, Multiple Exchange Rates and the Effectiveness of Exchange Controls

This chapter revisits the international context of the Bretton Woods arrangement and the historiographical debate about exchange controls. It also discusses methodological aspects of how to empirically assess the effectiveness of exchange controls – a framework that will be used to test the Brazilian case in the chapters ahead. In this way, the chapter provides an overview of the essential international background and the debates required to situate the Brazilian MER experience. It argues that the Brazilian case presents a unique opportunity to contribute to the debates about Bretton Woods and exchange controls.

2.1 Why Countries Adopt Controls: Beyond the Conventional View

The traditional explanation for the adoption of any form of capital or exchange controls derives from the concept of controls as correction tools for cases of free market inefficiencies (Shultze, 2000, p. 9). Free trade and capital flows are conventionally accepted as bringing advantages to countries involved in a transaction. Trade and capital mobility in theory increase welfare on both sides of a transaction by providing a larger set of choices for agents, resulting in optimal investment allocation, efficiency of comparative advantages for trade, and faster economic growth. This is the conventional theoretical view, which favors free trade and capital movements (Kruger, 1983; Bhagwati, 1978; Edwards, 1989). Yet, while theory supports free flows, many countries have adopted different forms of capital and exchange controls, justifying their use by appealing to the market inefficiencies that exist in reality, which diverges from the theoretical efficiency of a free flows environment (Shultze, 2000, p. 10).

Thus, it has been argued that controls on flows are justified in cases of market inefficiencies, as free trade and capital flows do not always result in the optimal allocation of resources for countries (Kovanen, 1994, p. 2). This line of thought is not a new concept in the financial literature, with James Tobin's (1978) seminal paper making a case for a global tax on foreign exchange transactions to reduce speculation and macroeconomic instability in the 1970s. According to this view, most market inefficiencies are related to some form of market irrationality, when markets' reactions diverge from rational expectations, or policy-induced distortions, due to economic policies targeted towards different objectives having negative externalities for foreign inflows. These inefficiencies are claimed to be solved by the use of controls (Shultze, 2000, p.10).

This view has become standard in the economic literature since the end of the 1970s, with a series of important scholars such as Kruger (1983), Bhagwati (1978), and Edwards (1989) building a strong consensus against the use of any restrictions on flows, and having the support of the IMF on policy prescriptions (Kovanen, 1994, p. 1). According to this consensus, free flows are the efficiency benchmark for markets and most cases of capital and exchange controls cause a more inefficient allocation of resources, disrupt savings and consumption incentives, affect trade performance, and usually cause financial markets to not function properly (Cardoso & Goldfajn, 1997). Controls for this literature are only justified when authorities identify clear market inefficiencies and are designed to only correct these specific problems. The norm is free trade and capital flows, the exception is controls, and they should only be used when markets do not behave as they were expected to.

Nevertheless, this theoretical approach does not hold when empirically confronted with the economic history of the last century. Countries used

different forms of controls throughout and most cases went beyond simply correcting a market inefficiency. The most frequent explanations from policymakers to justify their use of controls has been to limit the excess volatility of flows, protect against a fiscal default, or correct a divergence between the social and the private return of capital (Shultze, 2000, pp. 35-36). In a survey of more than 30 cases of controls being used, Magud et al (2011, pp. 3-5) summarize the rationale behind their adoption as the 'four fears' of financial flows: the fear of appreciation, the fear of 'hot money', the fear of large inflows, and the fear of loss of monetary authority. These are the market distortions commonly claimed by authorities to justify adopting controls on flows.

This conventional view is, however, too narrow to understand the historical uses of capital and exchange controls because it assumes that they are bad *a priori*. It inverts the historical question, which should be why countries opted for controls and how effective they were, rather than what was the market inefficiency that was claimed to be solved. If in most historical cases, markets do not perform as expected by theory, then the literature should be asking whether something might be actually wrong with the theory itself. Historical analysis of these cases therefore needs to go beyond the efficiency approach to controls. In the Brazilian case of the 1950s, the centralized auction system solved the inefficiency of a lack of foreign inflows to the economy, making it an efficient case from this perspective, but still the literature does not know why and how it worked, which would be required to know whether it truly was an effective system (Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987).

The standard literature on controls takes this efficiency approach a step further by claiming that controls also need to prove they are not a source of new distortions. Shultze's (2000, p. 15) guide to assessing controls states that 'the

mere existence of such distortions, however, does not prove the case for capital controls – it must be shown that capital controls are the best available measure to deal with the respective distortions’. In other words, scholars should focus on the counterfactual. Just testing the direct results of controls based on the intentions of authorities misses the vital outcome of the overall impact on the economy. Although the existing consensus assumes controls are inefficient and only uses this further test for externalities as a way to complicate the justification for controls, it raises an important question that should be tested for historical cases. There are always cost-benefit trade offs in any economic policy choice, and they need to be clarified in the case of controls as well. Thus, even if historical tests of controls should not be locked into this search for market inefficiencies, and should focus on the real effectiveness of controls for the economy, counterfactual tests are necessary to check if controls did not cause negative externalities for the rest of the economy.

This view of controls provides the theoretical background behind the empirical literature testing the success of historical experiences, for both capital and exchange controls (Magud et al, 2011; Habermeier et al, 2011; Ostry et al, 2010). Studies assume, based on the premise that free capital and trade flows are efficient, that controls are only effective when proved to be correct for an observed market inefficiency, although without also causing distortions to the rest of the economy. There does not seem to be any theoretical explanation to *a priori* argue in favor of the use of controls, only the empirical deduction that they might work because reality was different from theory.

Although counterfactual exercises to confirm the use of any policy instrument are important, the negative stance is entrenched in the literature on both types of controls, particularly for the post-Bretton Woods period. If in some cases

reality is different from theory, and justifies the use of controls, this theoretical approach is incorrect, as there is nothing necessarily wrong with the use of these instruments. This is the approach adopted in this dissertation, which seeks to move beyond the efficiency approach towards the question of the effectiveness of historical cases of controls. The dissertation adopts a more impartial view, testing the results and counterfactual of a case of exchange controls without a preexisting conceptual stance.

Another problem with the standard approach to both forms of controls is the time component, which assumes controls never work in the long run. For how long do controls need to work to be considered successful? There is no theoretical or empirical agreement on this either. The empirical literature tends to conclude that controls, when they work, do not have long-term effects on flows (Cardoso & Goldfajn, 1997; Carvalho & Garcia, 2006; Goldfajn & Minella, 2005; Jinjark et al, 2013). Controls could be considered useful tools for changing the composition of capital or altering other characteristics of trade flows for a short period of time, but are not able to fully change economic trends in a longer time horizon.

The problem with this argument is that the definition of short- and long-term periods of success is again purely ad hoc, which makes it easy to say controls do not work in the longer run and are inefficient. That is why some recent studies have been calling cases of controls, such as Brazil's, 'successful', even when the effects on the economy are short lived (Vieira & Holland, 2003; da Silva & Resende, 2010). Controls do not need to last forever, but can be effective at solving a short-run externality without creating further distortions to the economy. Chapter 7 will present an estimation of these distortions. This approach is less doctrinaire. If the Brazilian MER system, or any other

experience, is effective at providing positive contributions to the economy, without causing distortions or externalities, even if for a short period of time, it will thus be considered successful.

It is important to stress that this approach can be applied to both capital and exchange controls. It will be shown below that most case studies set during the Bretton Woods period are related to both exchange and capital controls, as both instruments were widely used by policymakers, while in the post Bretton Woods period exchange controls became very rare and studies are mostly focused on capital controls. From a macroeconomic perspective, both are the same. According to Adams and Greenwood (1985, p. 56), any dual exchange rate system or other forms of current account restriction should be considered identical to a capital control because different exchange rates are equivalent to levying a tariff on a class of international transaction. Both instruments have the same objective of controlling or restricting a class of foreign exchange flow, and have the same macroeconomic effect on the balance of payments.

However, from a policy perspective they are different because they are designed for different accounts of the balance of payments and create different options for governments. The choice of one or another depends on the political economy of the period, as well as the international context and market restrictions. This dissertation is focused on a case of exchange controls during the Bretton Woods period, but uses the general framework discussed above to consider whether it was successful or not, without pre-conceptions about whether it or a counterfactual would have been preferable.

2.2 The Political Economy of Controls

The reasons for the use of any form of controls go beyond the efficiency arguments discussed above and also include the political economy dimension of these historical experiences. One of the main assumptions of authors who have performed empirical tests of the efficiency of controls is that they are endogenous to capital flows. This assumes governments only respond to changes in financial flows, without external – exogenous – reasons for the use of controls. This assumption is based on the premise that controls should only be adopted in the case of market inefficiencies, as it supposes that rational governments only impose capital controls in moments when they face restrictions in flows – otherwise they would just adopt markets with free flows. The obvious consequence of this assumption, which also appears in most of the literature of the last thirty years (Carvalho & Garcia, 2006; Goldfajn & Minella, 2005; Magud et al, 2011; Cardoso & Goldfajn, 1997), is that controls are outliers to the system and could only be efficiently used in exceptional circumstances of foreign exchange shortages, rather than as a result of alternative political objectives. But these two reasons are not exclusive of each other in the historical experiences of controls.

Over the last two decades, a growing literature has been questioning whether in reality the appeals to market inefficiencies are not only pretexts for the real reasons behind the use of controls by governments, which usually is to benefit themselves and their political constituencies (Alesina & Tabetini, 1989, p. 2). Most of this literature questions whether policymakers have actually targeted a different set of political objectives, instead of public welfare and macroeconomic balance (Grilli & Milesi-Ferretti, 1995; Fratzscher, 2012).

Alesina and Tabelini (1989) introduce this argument to historical cases of controls, claiming that the real motivation behind these instruments is usually to pass a macroeconomic cost to certain groups in society. Based on a two agents model of workers (wage earners) and capitalists (owners of physical capital and profit earners), the authors argue that capital controls are a natural reaction of left wing governments (when workers are in power) to capital flight. This reaction happens frequently in emerging countries because of the rise in political risk when a change of government increases the chances of capital expropriation of right wing groups, leading to capital outflows. This case describes a typical confidence crisis that was commonly seen during the 1970s and 1980s in Latin American countries like Argentina, Mexico, Venezuela, and Uruguay (Edwards, 1989). Right wing governments, on the other hand, tend to react to this crisis by imposing taxation on the left wing voter base (workers), while left wing groups are more likely to impose capital controls, which is a way of taxing the wealthier groups in society (capitalists) and the right-wing voter base. Although Alesina and Tabelini (1989) look specifically at capital controls, the use of exchange controls in countries in the post-war period fits well with this framework (Edwards, 1987). Overall, they suggest authorities decide to adopt controls not because they see them as the best possible measure to deal with a specific market inefficiency, in this case capital flight, but actually to pass on the cost of macroeconomic adjustment to a specific group in society and protect their voter base.

The Brazilian political situation during the 1950s was very different from the polarization between left and right wing voters described by Alesina and Tabelini (1989), but their framework provides important insights to help understand Brazil's experience. The political structure was more diffuse, with

Brazil having its first experience of democracy in the post-war period after years of dictatorship. It is difficult to separate exactly which would be the left and right wing groups in society (Skidmore, 1982, p. 111; Leopoldi, 2000). President Vargas' voter base combined both labor unions and industrialists, and its use of exchange controls was not targeted at passing on the cost of macroeconomic adjustment to only one of these groups (Vianna, 1989; Lago, 1982). Nonetheless, the development of the MER system in Brazil, and its changes in 1957, seem to respond to different political objectives, with Kubitschek's government using the system to pass the costs to exporters and importer companies, while benefiting industrialists and the government itself. This approach points to the key importance of searching for the political incentives behind these instruments, as will be done in Chapter 8.

Many studies follow this framework to reach interesting conclusions (Alesina et al, 1993; Grilli & Milesi-Ferretti, 1995; Fratzscher, 2012). Alesina et al (1993, p. 12) argue that controls are more likely to be used by governments that are seeking to raise seigniorage revenues and keep interest rates artificially low, which is normally a feature of countries without a truly independent central bank and/or with pegged exchange rates – both characteristics of Brazil in the 1950s. Similar results were later obtained in an IMF study by Grilli and Milesi-Ferretti (1995, p. 36), who argue that controls are more likely to be found in countries with low incomes, large governments, and where the central bank is not independent. They argue that in these circumstances governments tend to benefit the most from the imposition of capital controls. Similar results were

also later obtained in studies by the European Central Bank on historical cases of controls in Europe (Fratzscher, 2012).⁴

Battilossi (2003) provides an interesting case study of the political economy of capital controls. The author examines the re-introduction of capital controls in Italy in the late 1960s and early 1970s during the demise of the Bretton Woods system. By examining the channels through which capital controls were used as implicit taxation to raise fiscal revenues, the author argues that the Italian government made use of this instrument to maintain a domestic tax base well beyond the end of the Bretton Woods system into the 1970s. The paper also attempts to estimate the size of this effect by calculating the level of seigniorage revenues obtained during that period. Although the author focuses on the Italian case, he argues that similar uses for capital controls can also be observed for a number of other European countries during that period. Overall, Battilossi's (2003, p. 28) contribution is to show a case in which the use of capital controls clearly responded to political economy objectives with an intervention that lasted for a long period of time.

Shultze (2000, p. 35-36) summarizes this literature by arguing that there are six main political economy reasons behind the adoption of controls, which benefit governments and politicians instead of social welfare. They all represent the intended reasons behind policymakers' appeal to market externalities as justifications for the adoption of controls. They are (1) the power of tax, with controls used to increase revenues; (2) inflation and seigniorage, with controls used to considerably raise revenues through the inflation tax; (3) financial

⁴ Fratzscher (2012) also argues that capital controls are more likely to be imposed in countries with fixed exchange rates, non-independent monetary policy, and a shallow financial market.

repression and subsidizing government deficits, with controls producing artificially low rates to help finance the government; (4) trade protectionism, by controlling flows to erode or produce rents created through protection; (5) distribution of income, with controls targeted to redistribute welfare and privilege for specific groups in society; and finally (6) pure rent-seeking, with controls as channels to benefit groups or sectors via rent-seeking schemes.

These objectives are not independent of each other and in many cases are parts of a highly endogenous process. In the case of Brazil in the 1950s, this dissertation argues that issues of taxation, trade protection, and redistribution of income were strongly behind the changes in the MER system after 1957, and explain the political economy of the second MER system. Overall, this literature suggests that if specific cases of capital controls are being examined, they should not only test its direct results and possible alternatives – that is, the effectiveness of the system – but also look for the political incentives behind the use of controls.

2.3 Exchange Controls and the Bretton Woods System

The literature examining the experiences of exchange controls, including MERs, is not large and can be divided in two main groups: (1) studies focused on the Bretton Woods system until 1973, which are actually few and have underestimated the role of exchange controls in the system; and (2) studies discussing controls in the post-Bretton Woods period, which is a larger and more recent literature mainly focused on capital controls. Still, both for the Bretton Woods system and also for the period after 1973, there is a group of authors who make an interesting critique of the consensus against these instruments, thus providing a rationale to justify the adoption of MERs in both

periods. This sub-section reviews the literature on the Bretton Woods period, starting with a discussion of the reasons for the different focus of research for the two periods, and then revising the main contributions for that period.

The lack of attention to the role of exchange controls during the Bretton Woods arrangement seems to come from a biased interpretation of the efficiency of that system. Reinhart and Rogoff (2002, p. 1) argue that during Bretton Woods capital controls were widely established and policymakers did not see them as distortions – a position still present in the scholarship but has recently started to be challenged by a few authors (Eichengreen, 1993; Bordo, 1993). Frieden et al (2000, p. 5) summarize the consensus on the Bretton Woods system, stating that before its collapse in 1973, ‘an overwhelming majority of countries, including 90 percent of Latin American countries, had fixed exchange rate regimes. Since then, however, Latin American countries have had a wide variety of experiences with exchange rate regimes, and, more generally, their exchange rate policy’.

There is a large debate among scholars on whether capital controls were indeed conceptually an essential instrument of the Bretton Woods system or only a tolerable externality to allow the system to reach its broader goal of restoring international trade and reduce convertibility problems. Ikenberry (1993, p. 157) defends the latter view. He argues that Bretton Woods was the result of long political negotiations between the Allies during the later part of the Second World War. While Americans had free trade and full currency convertibility as their primary policy objectives, the British were worried about guaranteeing full employment after the wartime destruction. The result was a system that ultimately had the American targets but tolerated a gradual convergence towards full convertibility in order to protect countries from the post-war

dollar shortage and economic disequilibrium. This resulted in controls being acceptable as a transitional instrument. Since full current account convertibility was only reached between the United States and European nations in 1958, the IMF accepted different types of controls during the transitional 1950s. Countries were encouraged to restrict capital account movements rather than the current account, using capital instead of exchange controls. But like the MER systems adopted throughout Latin America, restrictions on trade and current account flows were inevitable given the instability of the Bretton Woods system, despite the IMF's opposition (Terborgh, 2003, p. 14).

The Bretton Woods system tried to prevent countries from adopting exchange controls by using the adjustable pegs system in the later 1940s and early 1950s, which allowed countries to adjust their exchange rates in case of 'fundamental disequilibrium', but this was not clearly defined and rarely used. Monnet and Puy (2015, p. 30) show, for example, that the United Kingdom had an overvalued exchange rate for almost 15 years between 1945 and 1960, while Germany and Switzerland maintained an undervalued currency and never adjusted for these fundamental disequilibria. Ultimately, IMF loans were also supposed to provide a buffer for balance of payments deficits, but were clearly not enough to prevent countries from adopting different forms of controls (Bordo, 1993). In the early part of the 1950s, even the IMF recognized that international reserves and the adjustable pegs system were insufficient to face the international depression without the use of controls, and had a tolerant attitude towards MERs until the mid-1950s (Horsefield, 1969).

From a theoretical standpoint there was also a justification for capital controls to become an acceptable part of the Bretton Woods system. The 'Impossible Trilemma', the theory on which the whole system was based, gave policymakers

this alternative. Obstfeld et al (2005, p. 423-424) argue that the trilemma, which implies that it is only possible to have two of capital mobility, pegged exchange rates, and independent monetary policy at any one time, holds for most of history, particularly during Bretton Woods. The trade off created by the Trilemma led most countries to opt for a wide range of controls to allow for both independent monetary policy and to keep exchange rates pegged, giving up on capital mobility. Only 2.5% of 145 countries in the Bretton Woods system were, on average, without official pegged exchange rates during the 1950s (Obstfeld et al, 2005, p. 425).

But the fact that countries were opting for controls to solve the Trilemma did not mean the system was actually stable and efficient, or that controls were used in similar forms by all countries to be part of the arrangement. Giovannini (1998, p. 11) examines whether there were asymmetries in the use of capital controls during the Bretton Woods period, arguing that a diverse response from policymakers in the use of these instruments would be evidence of an ineffective regime that was forcing countries to respond with an asymmetric use of controls. According to his argument, this was the natural outcome of an inherently asymmetric system, with countries managing flows at their own discretion to survive a dollar system that circled around a 'center country', the United States. Giovannini provides quantitative evidence that countries adopted a variety of different controls, and also had to change them extensively over time to deal with the volatile conditions in international flows. More than differences in the types of controls, what characterized this asymmetric response was the impressive variation in the use of these instruments. One important example was Germany, which throughout the Bretton Woods arrangement adopted a variety of capital controls, including higher reserve

requirements for foreign deposits in the banking system, a prohibition on paying interest rates to foreigners and selling money-market papers, always altering the extent of these instruments according to the size of flows at the time (Giovannini, 1998, p. 17).

In the early years of the Bretton Woods period, the global economy was facing a foreign exchange (that is, US dollar) shortage (Machlup, 1964), and controls were the only solution to remain within the pegged exchange rate system created by Bretton Woods. While Giovannini (1998) does not necessarily focus on testing whether controls were effective, his argument supports the finding that controls were an inefficient response from countries to a system that was unstable by design. Garber (1993, p. 483) explains that some of these problems were already being discussed by contemporary scholars and policymakers, who, by the early 1960s, did not expect global convergence to full currency convertibility and stable exchange rates to happen under that regime. These problems are normally summarized in the form of the three main problems of the Bretton Woods system: liquidity, confidence in the dollar standard, and adjustment in case of balance of payments difficulties (Machlup, 1964; Bordo, 1993). With no confidence in the dollar standard, a lack of global liquidity, particularly for emerging economies, and an inefficient system to adjust for balance of payments problems, different forms of controls were a natural outcome.

Cross-country empirical evidence supports this interpretation. In line with Giovannini's conclusion, an important study by Reinhart and Rogoff (2002) focuses specifically on exchange controls and evaluates the instability of the Bretton Woods system. Their starting point is exactly the fact that official exchange rates were mostly pegged, giving the initial impression of a system in

which controls helped to maintain stability. But by building a database of dual and parallel exchange rates, Reinhardt and Rogoff conclude that in reality less than 40% of the IMF member countries that were officially pegging rates were in practice doing so between 1946 and 1973. In most cases, what they call the 'natural exchange rate', which was estimated through market conditions, was more devalued than the official rate and in some cases ended up forcing countries to devalue their official rates at some point. Major devaluations occurred throughout the Bretton Woods period, including the French Franc in 1957 and 1969, the British Pound in 1967 and the Deutsche Mark in 1961 and 1969 (Terborgh, 2003, p. 19). The system was so unstable in the 1950s that the authors argue that '[f]rom 1946 until the arrival of the 1960s, Europe was *de facto* a floating regime under the guise of pegged official exchange rates. Each time the official rates were realigned, the story had already unfolded in the parallel market' (Reinhardt & Rogoff, 2002, p. 25). And as will be seen below, Latin America was not very different.

Marston (1993, p. 532) reinforces this conclusion and finds that exchange controls led to large covered interest rate differentials during the Bretton Woods system, distorting investments and borrowing costs. He tests for interest rate differentials in Britain, Germany, and the United States to determine if markets were correctly functioning under the Bretton Woods restrictions. His hypothesis is that if interest rate differentials did not exist, or were only pure risk premium, it would be a sign that the system was efficiently allocating resources even with the use of various forms of controls. He finds large asymmetries and argues that this was a direct consequence of the Bretton Woods system, which almost forced economies to impose controls as the only

way to maintain exchange rates pegged and keep the balance of payments stable.

A reflection of this instability was the IMF position in the Bretton Woods system. The IMF was in favor of capital controls during the 1950s, justifying it as a consequence of the Impossible Trilemma (Konig, 1968, p. 39). Since the IMF also had the broader objective of stimulating currency convertibility, however, it developed contradictory policy guidance, defending different uses for similar types of controls. Its policy advice evolved to accept restrictions on capital accounts, while being against MERs or other restrictions on current account flows (IMF, 1947-1960). For this reason, the relationship between countries, regulators, and controls was a difficult one, particularly in the face of a system that was inherently problematic but largely defended by the institution.

Some contemporary scholars, including some of the institution's own staff, highlighted the IMF's contradictory position and defended the role of exchange controls and MERs. The influential economist Robert Triffin, who was working for the IMF in 1947, wrote on how in the post-war period it should adapt its policy prescriptions to move beyond the framework of the Gold Standard years. Triffin (1947, p. 66) argued that, in moments of balance of payment disequilibrium, countries should be allowed to deploy their international reserves through a system of priorities to provide currency to the most important parts of the economy. Although he does not specifically discuss MERs, he is very clear that there is a significant negative consensus on exchange controls inside the Fund because of their misuse in the previous two decades (the 1930s and 1940s). He argues, nevertheless, that this does not mean that this instrument should not be considered for moments of balance of payments stress. 'Unfortunately', Triffin (1947, p. 66) writes, 'the very mention

of 'exchange control' raises such emotional reactions with many people as to prevent any serious discussion of the subject', but 'the real purposes which nondiscriminatory controls can justifiably serve should not be summarily dismissed'.

Schlesinger (1952), in a long theoretical and empirical evaluation of MERs, argued that the literature should move beyond the simple distrust of those mechanisms due to IMF opposition and understand them in their full complexity. The author claims that although there was some risk of causing negative externalities to the economy, particularly when they were too complex, MER systems were interesting tools to stabilize balance of payments. In his view, MERs were definitely preferable to trade quotas, which were the IMF's preferred choice after capital controls, and could be particularly useful when preferred exchange rates were introduced to incentivize exports, such as in the Korean case, which will be discussed in the next sub-section. Overall, the author claims that 'it would appear that there is a definite but limited rationale for the inclusion of multiple exchange rates in the economic programs of underdeveloped countries. Indeed, their use in economies of this kind is decidedly more justifiable than in highly developed countries. If the systems are kept relatively simple and are not overloaded with large number of conflicting objectives, they can satisfactorily accomplish some of the purposes for which they have been designed – provided, of course, that certain basic economic preconditions are simultaneously fulfilled' (Schlesinger, 1952, p. 76).

De Vries (1956) follows a similar line of argument, offering a list of reasons for countries to adopt MERs in the Bretton Woods period. De Vries also follows the rationale that, although many countries and MERs experiences in the 1950s came to an end due to the IMF's opposition, it does not mean these experiments

did not produce effective results for individual countries. Her work reviews some of the experiments to test if it was in the self-interest of some countries to keep those systems in place despite the IMF's disagreement.

De Vries lists six reasons for countries to adopt MERs. The first is that an MER system is less arbitrary than quantitative restrictions, which had also been adopted in a number of countries in that period. MERs allow a transparent restriction to imports through a price mechanism rather than imposing a discretionary allocation of foreign exchange. As will be shown in this dissertation, this was clearly one of the benefits of MERs in Brazil, which had also previously adopted quantitative restrictions. The second reason is taxation, as the systems can provide a simple and effective way to tax imports and increase government revenues.⁵ The third is to isolate speculative transactions, since most MER systems have separated commercial from capital transactions, protecting trade from exchange rate fluctuations of capital activities. This is also one of the arguments used in the literature to defend the use of MERs after the Bretton Woods period, as will be discussed in Sub-section 2.6. The fourth is the alleviation of inflation, since the MER system can be used to smooth currency devaluations. Finally, and most importantly, the fifth and six reasons are the possibility of differentiating between particular exports and imports by creating different exchange rates for distinct sectors. This is the channel to adjust the balance of payments using exchange rates to prioritize essential imports and support export sectors.

⁵ Sherwood (1956) studies the revenues mechanism of different MER systems and reaches the same conclusion that MERs are effective to increase government revenues.

Although she lists reasons for countries to adopt MERs, and believes they had an important appeal for emerging countries in the Bretton Woods period, she concludes that MERs worked in some cases but not in others, and their success depended more on the implementation than on these theoretical benefits. Many MER designs have been distorted for political economy reasons and have resulted in balance of payments crises and inflation. Only in a few cases did the MERs' design and implementation transform the above list of benefits into an effective system. This dissertation will show how Brazil's 1950 experience, at least during its first phase, fits with this description of an effective design and implementation, although it was later transformed for political economy reasons into an ineffective system during its second phase.

Clearly, these authors' interpretations fit what was described above as the less doctrinaire view on exchange controls and MERs, as they do not assume there is anything *a priori* wrong with these instruments, and in fact provide an interesting set of arguments in favor of MERs. This discussion suggests that a more complex analysis is necessary to understand exchange rate policies in the Bretton Woods period, rather than only assume their ineffectiveness, as in the existing consensus.

2.4 Exchange Controls and the IMF

The IMF's opposition to MERs was an important limit on the use of this instrument during the Bretton Woods period. The stance of the Fund developed, however, during the late 1940s and early 1950s, with the institution having a softer stance against MERs until the middle of the second decade, which gave countries the space to adopt MERs a (Konig, 1968, p. 41).

The IMF was largely in favor of closed capital accounts and capital controls to keep exchange rates pegged, which was the primary objective of the Bretton Woods system. One of the Fund's main goals was to impede competitive devaluations and target full convertibility for its country members, as this was seen as a major source of international volatility during the inter-war period and a primary reason for the establishment of the Bretton Woods system in the first place. The IMF therefore fought against instruments that were seen as contrary to this goal (Krueger, 1983).

While the IMF was against MERs, it took time for the institution to reach this stance and even more to force countries out of those systems, which only happened after the mid-1950s. During the first years after its creation in 1944, the rise of MERs in the region was tolerated. The IMF actually received numerous questions from countries on how to evolve from MERs towards the Bretton Woods pegged system (IMF, 1947-1950). And while the IMF's regulations obliged countries to not impose exchange payment restrictions under Article VIII of the Agreement of the International Monetary Fund, it also allowed a period of transitional adjustment in which countries could slowly adapt to the new rules of Article IV of the Agreement (Horsefield, 1969). Most countries not only made use of this loophole, but increased their use of MER systems and level of controls during this supposedly transitional period, such as in the cases of Argentina and Brazil (Konig, 1968, p. 51). While most Latin American countries adopted some sort of MER in the early 1950s, a variety of countries from other regions also followed this route, including India, Israel, Korea, China, and even some West European countries, like France and Germany (Horsefield, 1969).

During this period, the IMF's tolerant attitude towards country members was also a reflection of its limited faculties for enforcing changes to macroeconomic management. In the 1940s and the first half of the 1950s, it was unable to influence other forms of domestic policy, particularly monetary policy, until it started establishing its stabilization programs, which exchanged financial support for following domestic policies guidance. For this reason, enforcing policy changes was initially difficult in Latin America (Konig, 1968, p. 50). Even the IMF's formal guidelines admitted these difficulties in restricting MERs. For example, its 1947 Annual Report claimed that some cases of MERs for stabilizing imports and balance of payments could be tolerated if they did not harm other trade partners (IMF, 1947, p. 26). The Fund also accepted that it would only be possible to eliminate this practice in the exchange rate market once domestic price levels were adjusted and this could take time (IMF, 1947, p. 40). Another example of this tolerant attitude toward MERs can be seen in the IMF's 1948 Annual Report, when it released a guideline stating how it expected countries adopting such systems to behave and to communicate further changes to the Fund. Although it accepted those systems temporarily, it always made clear that changes would be expected as soon as the country was stable enough (IMF, 1948, p. 22).

All Latin American countries became members of the IMF on its foundation in 1944, except for Argentina and Haiti, which joined in 1955 and 1953 respectively. Consequently, all countries had to report an official rate and any changes to their MER systems, which also meant they had to deal with the formal opposition from the IMF to the use of MERs, although without real enforcement to change their frameworks (Frenkel & Rapetti, 2010, p. 13). A case that exemplifies this situation was Ecuador, which the 1947 Annual Report

shows had consulted the IMF to make some changes to its already existing MER system, which the IMF agreed to (IMF, 1947, p. 23). During the late 1940s and early 1950s, its annual reports show the most the IMF was able to do was to advise countries to use alternative systems, such as mixed free and controlled exchange rates or to simplify arrangements, then transition towards tariffs as the preferred option for protection. This was effective in some cases but not in others, such as Brazil, which developed a complex auction-based MER system (Konig, 1968).

The IMF's attitude started to change in the mid-1950s, when the stabilization programs took shape, while most countries' MER systems led to large macroeconomic imbalances (IMF, 1954, p. 74). Horsefield (1969) states that very few systems worked because they had to be simple, in order to be flexible enough to adjust for changes in macroeconomic conditions, and needed to be combined with stability in fiscal and monetary policy. In most cases, the system itself was the cause of distortions and inflation, or problems arising from irresponsible monetary policies resulted in further balance of payments difficulties, leading the MER systems to collapse. Black markets,⁶ high inflation, and in most cases a balance of payments crisis were the natural consequences of those regimes. Argentina was probably the best example of a system that led to a complete collapse of the country's macroeconomic condition, resulting in an IMF stabilization program in 1958. Brazil was instead a notable case of an

⁶ Black markets were a common consequence of macroeconomic imbalances and the MER systems in Latin America, and common across the region. Grosse (1994) provides a comprehensive discussion of how black markets for exchange rates emerged in Latin America.

effective system, as will be shown here, even though it also ended in an IMF program in 1961 (Konig, 1958).

The deterioration of macroeconomic conditions was exactly the moment when the IMF was able to step in and force many of these countries out of their MER systems through the conditions attached to its stabilization programs, which required a large set of changes in domestic policies. These included the removal of restrictions on foreign payments combined with control over monetary and fiscal expansionary policies. And in order to provide some temporary protection for trade, the IMF also usually accepted a transitional period of high tariffs to compensate for the end of the MER (Horsefield, 1969). Chile and Bolivia in 1956, Paraguay in 1957, Argentina in 1958, and Uruguay in 1959 where all cases of the IMF forcing the removal of their MERs through these conditional agreements for funding (Konig, 1968, p. 41).

But the IMF was not the only reason for Latin American countries to abandon their MER regimes. As the history of the relationship between the IMF and member countries has shown, the institution has been used several times as an external constraint on local interests by governments that have had difficulty in implementing macroeconomic reforms. There is a large literature on the political economy of IMF programs, particularly for the 1990s, which has highlighted the role of the institution for local political interests (Breen, 2008). In the 1950s this was no different, with countries having to request IMF funds to solve their balance of payments problems and also sometimes using the Fund as a channel to implement difficult reforms (Horsefield, 1969).

By the end of the 1950s, the IMF had completely changed its position regarding MER practices. In its 1957 Annual Report, the tone was already much harsher,

as it was claimed that MER systems not only caused harm to the country's economy and its trade partners but were also too complex to manage and needed constant changes and other distortions to work (IMF, 1957, p. 146). Given this assessment, it was decided that rapid changes in order to simplify such systems were necessary, and the IMF would do everything possible to force countries to agree. The new position was that countries still on such systems would be allowed to maintain them only if they were showing significant progress in eliminating payment restrictions and would be 'reluctant to approve changes in multiple exchange rates system which make them more complex' (IMF, 1957, p. 147). The IMF would also provide technical assistance and other collaboration for members to simplify their exchange systems and converge to a single pegged exchange rate as quickly as possible.

It is very important to notice the IMF's view on tariffs in this context, which is presented as a secondary matter but had an important consequence for the region. While the IMF fought against MER regimes in an effort to maintain pegged exchanged rates, tariffs were allowed as the alternative instrument for countries when they eliminated the MER system. Although the IMF claimed to be against exchange controls because it sought to promote free trade, it was in fact only concerned about liberalizing exchange rates to reach currency convertibility. It claimed that it would authorize tariffs just for a transitional period, but in fact preferred countries to adopt high tariffs as a permanent instrument to control trade flows if this was the channel to replace exchange controls. As a result, most countries in Latin America, when ending their MER systems through the IMF programs, migrated to tariffs as an instrument to intervene in trade flows (Horsefield, 1969). From a pure balance of payments perspective, tariffs are much more ineffective than direct exchange controls

because the size of foreign exchange transactions cannot be controlled, as was case in Brazil's MER system. But more importantly, this emergence of tariffs as a substitute for MERs contrasts with the dominant view in the literature that the rise of tariffs in Latin America was purely an instrument of the ISI model (Haber, 2006; Fishlow, 1972; Weisskoff, 1980; Hirschman, 1966). As will be further discussed in Chapter 3, tariffs should also be seen as a consequence of the IMF policy towards exchange controls, and Brazil is an important case that shows that the longer duration of the MER system delayed the re-introduction of ad-valorem tariffs, which only happened in 1957.

2.5 Multiple Exchange Rates in Latin America and Elsewhere

MERs were the most popular form of exchange control in Latin America during the Bretton Wood period. The relationship of the region with this instrument is quite distinctive, and its use dates back to Argentina in the 1930s. After leaving the Gold Standard in 1931, Argentina created the Exchange Control Commission as an effort to stop the currency devaluation and adopt rules to distribute foreign exchange, prioritizing government spending and crucial import sectors (Abreu, 2000, p. 66). Other Latin American countries had also used different forms of multiple exchange rates since the 1930s, such as Bolivia, Chile, and Paraguay, all in response to the breakdown of the gold standard during the Great Depression (Horsefield, 1969).

The Argentine case was an important inspiration for the post-war experiences. Della Paolera and Taylor (2001) argue that the 1930s regime allowed a rapid recovery from the 1929 financial crisis in comparison with other countries from the so-called 'periphery'. The authors back their position by examining two counterfactual scenarios. The first examined what would have happened

without the action of the Conversion Office and the expansion of domestic credit, when gold would have been solely used for servicing external debt and the currency board would not have sterilized gold outflows. The second counterfactual tested a less extreme case, allowing for the break in the gold standard parity but not allowing for other forms of monetary expansion. The authors observe that the change of regime returned better results when compared to both alternative scenarios, with output recovering to the 1929 levels already by 1934-35.

This type of policy instrument became the norm in the region after the war, as 14 Latin American countries adopted different types of MER systems with the same purpose: to stabilize their balance of payments in the context of a global shortage of dollars, although in many cases scholars have also interpreted it as part of an attempt to promote import substituting industrialization, given the sectoral differentiation of exchange rates (Konig, 1968; Baer & Hervé, 1962). There were a variety of MER arrangements, with some countries only imposing very small margins between different exchange rates, such as in Cuba or Honduras, although the most common pattern was of large differences, as seen in Argentina, Brazil, Bolivia, Chile, and Paraguay (Konig, 1968, p. 39). The rationale for these systems was quite simple: with closed capital accounts, difficulties in increasing exports, and the lack of foreign exchange liquidity in the first years of Bretton Woods, MERs were a tool to provide stability in the balance of payments by reducing imports while trying to keep inflation under control.

Dornbusch (1986, p.146) provides an interesting framework to assess the different designs of MER systems, which can be used to compare the different Latin American systems. He defines four types of MER systems determined by

two types of characteristics: i) whether they have fixed or flexible exchange rate price determination, and ii) whether the foreign exchange was rationed by the government or determined by the market. Table 2.1 shows that the combination of these two characteristics resulted in four types of MERs. System I was applied when officials adopted different fixed exchange rates for different types of goods, but also discretionarily set the amount of foreign exchange allocated to each category. This was usually determined by historical precedent or purely on the discretion of the authorities. The system tended to result in black markets, given that authorities normally allocated foreign exchange discretionarily, benefiting certain groups in society, rather than for macroeconomic purposes. System II was applied when authorities discretionarily determined the amount for each exchange rate category, but allowed a flexible auction mechanism to determine the exchange rate price in which all participants could bid in the market. In this system the quantities of foreign exchange for each market are fixed, but the exchange rate price was endogenous. System III was when authorities fixed the different exchange rates prices, but allowed the market to determine the amounts being transacted at each exchange rate without quantitative restrictions. Prices were fixed but quantities were free to float. And System IV was when the government created different exchange rates, but allowed prices to be set in the market and participants to determine the quantities. In System IV the restriction was only for the types of goods and services allowed in each exchange rate market.

Table 2.1 – Types of Multiple Exchange Rate Regimes

	Type of Exchange Rate	
Type of Foreign Exchange Supply	Fixed	Flexible
Rationed	I	II
Market Determined	III	IV

Source: Dornbusch (1986, p. 146)

Almost all Latin American countries system adopted System I, with authorities fixing different categories of exchange rates, in some cases only legalizing the existence of a black market, but maintaining a discretionary distribution of foreign exchange to the different categories. There were usually different exchange rates for imports and exports, with the government centralizing foreign exchange from exporters and then allocating discretionarily to importers. Systems III and IV were basically not adopted during the Bretton Woods period because they required allowing the market to determine the quantities being transacted at each exchange rate, which was difficult due to the shortage of foreign exchange. Finally, System II, with an auction system to determine the exchange rate but with the government determining the quantities to the exchange rate market, was also not common across Latin America as it removed from government the discretionary power to distribute foreign exchange. Nonetheless, this system was adopted in Brazil for most of the 1950s, which made it distinct from other experiences in Latin America.

The IMF was an important limit to the use of MERs in the region, pressuring countries to end their System I MERs. The goal of the IMF was to move countries to a form of System III, where exchange rates were limited to a

number of fixed exchange rates but without exchange restrictions, meaning no quantitative restrictions on each of these exchange rate markets. The two most notable cases of successful IMF involvement in Latin America were Argentina and Bolivia. In the first case, after a turbulent decade from the late 1940s to the mid-1950s, the country lacked foreign reserves even to import the most essential goods. Two successful IMF missions in 1958 reached an agreement to lend the country US\$329 million, conditional upon major changes in the exchange rate policies and a stabilization program. In the latter case, the stabilization program was announced in 1956 after a year of negotiation with the country, also following enormous balance of payments difficulties (Konig, 1968, p. 41).

The cases of Colombia, Paraguay, and Chile reveal how the IMF gradually participated in the removal of countries from MER systems. Colombia appears quite often in the Fund's annual reports, mainly because it was an example of a clear path towards the simplification of the exchange system, which was exactly the IMF goal. According to the 1949 report, the country's request to keep its MER system was rejected because there was no path toward reducing the level of payment restrictions. In the 1951 report the country agreed with a reform to the system, which allowed a depreciation of both the selling and buying exchange rates, both of which had previously been fixed and with quantities determined discretionarily by authorities. From 1953 onwards, Colombia showed signs of better economic management and this was reflected in its exchange system, as the spread between the coffee export rate and other rates was narrowed, the restriction list adopted in 1951 was eliminated, and its exchange system further simplified (IMF, 1951, p. 50).

According to the 1950 Annual Report, Paraguay had a very complex MER system with several rates for buying and selling foreign exchange, all pre-determined by the government with a discretionary system to distribute foreign exchange. In the 1951 report, the country made its first step towards simplification, with the old system being replaced by a new one featuring only two fixed rates, one for most exports and some imports and the other for most imports and some exports. In addition, a free market was established for some limited transactions, which is a feature of System III, although it remained highly limited. In the 1953 report, the IMF found that the country had to sacrifice some of the simplification due to the weaker price of its exports and inflationary pressures, returning to the original MER system. Again in the 1956 report, Paraguay aimed at a simplification of its system supported by the IMF: it depreciated its currency and replaced a system in which the exchange rate ranged from 21 to 75 guaranias to a dollar with a new one in which the effective rate would be fixed (IMF, 1956, p. 83).

Chile began to simplify its exchange system in 1949, according to the 1950 report, although part of the unification of exchange rates required negotiations with foreign mining companies that operated in the country (IMF, 1950). In 1954 the country backed by the IMF devalued its currency and consolidated some preferential selling rates with a free market rate of a System IV type. In addition, the free market rate was extended to export transactions and special exchange rates for exports were eliminated (IMF, 1954, p. 82). The main part of the reform took place in 1955 with the abolition of the import licensing system, which imposed quotas on groups of imports, and the introduction of two fluctuating free market exchange rates, one for imports and exports and some

government related transactions and the other for capital transactions (IMF, 1956, p. 57).

The path of these countries was very similar. First they authorized some devaluation and reduced the number of exchange rates, reducing the discretion of their System I form of MERs; later they removed payment restrictions to create a fixed exchange rate for trade and a free market rate for capital transactions, moving closer to System III for current account transactions. In its 1967 report, the IMF looked back at its experience with MER regimes and how its stance had changed over time. The IMF recognized that it took time to reach the conclusion that those systems were ineffective, and there were situations in which it had supported them in the beginning, even providing resources. Still, the IMF believed this had always been done based on the assumption that such regimes were temporary and would end soon. It also stated the various disadvantages of MERs and concluded from the experience of countries using them to correct for balance of payments difficulties had the following problems: (1) lack of trust in the country; (2) increased complexity to maintain different rates; (3) distortions in the efficient allocation of resources; and (4) currency appreciation, generating even greater disincentives for economic growth. This is why from the mid-1950s onwards the IMF fully advocated a single exchange rate, and argued that its successful track record in dealing with developing countries strengthened this stance (IMF, 1967).

There does not seem to be any consensus on what was the optimal design for MER systems for Latin America, mostly because a large number of experiences failed to support a sustainable macroeconomic environment. But based on the experiences of individual countries, clearly most attempts did not work because a System I MER generated a discretionary distribution of foreign

exchange by governments, which usually resulted in an ineffective distribution of foreign exchange to markets and the rise of black market exchange rates.

MERs were present not only in Latin America during this period, as developing nations from other regions were also forced into complex systems of exchange rate allocation due to the same problems of liquidity in the Bretton Woods system. Probably the most interesting case outside Latin America was the South Korean experience between 1953 and 1960, the same years as Brazil. The South Korean case highlights how MER systems were designed and used for very different purposes. In contrast to Latin American countries, where multiple or parallel rates were introduced to reduce imports and stabilize balance of payments via a reduction of foreign exchange outflows, in South Korea the MER system was mostly designed to benefit exporters, in order to increase export receipts. The extremely different economic conditions of the country, which was recovering from the Korean War and did not have Latin America's dependence on primary commodity exports, played a role in the system's design (Frank Jr et al, 1975, p. 25).

Similarly to Brazil, the South Korean system also emerged after a long post-war period of extreme foreign exchange shortage. Between 1945 and 1953 the distribution of foreign exchange was managed through quantitative controls and the discretionary power of the central authorities. During this period, almost all imports were financed by foreign aid or currency redemptions from the United Nations. With the country badly affected by the war, the government itself was the major importer. The result was a multiplicity of exchange rates applied to a variety of transactions, including a large black market for dollars. By the end of the war, the official exchange rate was seriously overvalued and applied to less than one-quarter of transactions.

(Frank Jr et al, 1975, p. 26). Although the source of foreign exchange limitations was very different from Brazil's, the result of the system for foreign exchange distribution – a strongly over-valued exchange rate – was similar to the Brazilian case between 1947 and 1953 (Lago, 1982).

A different system emerged in South Korea between 1953 and 1960. Unlike in Latin America, where imports were restricted with the export sectors being the ultimate payer of the costs of the system, in South Korea it was the opposite. Between 1953 and 1960 the new system in South Korea created extremely favorable export exchange rates via a variety of mechanisms. These included a deposit system in the Bank of Korea to avoid exchange risk, an export-import link system that authorized exporters to import inputs at cheaper prices, direct export subsidies, preferential loans, and tariffs exemptions. The import exchange rate system remained extremely complex, as different exchange rates were applied for different types of goods, while quotas and tariffs were added into the mix during the mid-1950s. The result was the opposite of the Brazilian case, as it provided a strong incentive for increased foreign exchange inflows via implicit subsidies for exporters (Frank Jr et al, 1975, p. 41).

The MER experience in South Korea differed from Brazil, although it also achieved effective macroeconomic results. The literature on the South Korean case analyzes its MER system as part of a more complex governmental and private sector effort to industrialize the country and produce economic growth by deliberately 'setting the relative prices wrong' (Amsten, 1992). The system was designed to simultaneously balance macroeconomic conditions and stimulate export-led growth with preferential exchange rates for exporters. It was part of a broader industrial deepening effort to industrialize the country (Kuroiwa, 2015).

Compared to the South Korean case and particularly to other Latin American countries, Brazil's MER experience is unique in many respects. Its main characteristics were a distinct endogenous exchange rate system based on auctions, a System II MER according to Dornbusch's classification, whose details will be discussed in the chapters below. It lasted for much longer compared to the rest of the region and involved a different relationship with the IMF: whereas the MER regimes were gradually removed or ended with an IMF agreement by the mid-1950s, Brazil maintained its MER system for the whole period 1953-1961, with two different phases. The regime underwent changes until 1957, despite the IMF's opposition. Moreover, just before making a deal to receive IMF funds and end the MER regime in 1959, Brazil's president Juscelino Kubistchek decided to not accept the IMF conditions after all and maintained the structure of the MER system (Almeida, 2015). For this reason, IMF reports from the second half of the 1950s have few references to Brazil. In fact, the IMF only reports on the beginning of Brazil's MER system in 1953, but since there were no changes to the system and no discussions with the institution, Brazil is a clear outsider compared to all of the other Latin American countries. Brazil's experience with MERs only ended in 1961, when a balance of payments crisis led the government of Joao Goulart to appeal to the IMF, which resulted in a deal that ended the system in exchange for financing.

The process of eliminating Latin America MERs contributed to the IMF's prestige, and is normally seen as a victory for its policy stance, although it did not manage to solve the inherent problems of the Bretton Woods system (Bordo, 1993). But Latin America's relationship with different currency systems did not end with the MERs of the 1950s. In fact, until the end of the Bretton

Woods system in 1973, Latin American countries moved through different exchange rate regimes, while always dealing with the same problem: shortage of inflows and no willingness to allow massive exchange rate depreciations because of the high inflation they brought. After the period of MERs in the 1950s, most countries moved to passive crawling peg systems, which had the same objectives through a different instrument. Instead of fixed MERs, these systems were designed to allow a slow depreciation of the fixed official rate (Frenkel & Rapetti, 2010, p. 15). Yet, there were still many devaluations and the subsequent system also did not work as expected. For this reason, there was some return to dual exchange rates during the 1970s and 1980s (Marion, 1994).

Edwards (1987) studied the evolution of these exchange rate regimes in Latin America and argued that in most cases they did not manage to bring macroeconomic equilibrium to the countries of the region, forcing many of them to undergo massive currency depreciations. But interestingly, he also concludes that in most cases devaluations were also ineffective at reestablishing macroeconomic stability. According to Edwards, only in cases in which there was much more stable monetary and fiscal regimes did countries manage to reach macroeconomic equilibrium.

The Brazilian case will be further discussed below, where many of the unique aspects that differentiate it from the region's other countries will be shown. The Brazilian MER system's long duration and isolation from the IMF reflects the way in which it produced at least five years of a stable balance of payments, kept inflation under control, and helped increase international reserves – an outstanding result considering the Latin America pattern. Most importantly, Brazil's MER system was the only one to fully centralize all trade flows and distribute available foreign exchange through the same auction system.

2.6 Exchange Controls in the Post Bretton Woods Period

The opposition to controls for the post-Bretton Woods period is even stronger, although the literature is mostly concentrated on capital controls. For exchange controls, the consensus is also against interventions in the current account, as in the Bretton Woods period, although here is also an interesting literature against that provides a rationale to also justify the adoption of MERs for some specific conditions.

Most of the cross-country analyses on capital controls focused on the post-Bretton Woods period tend to conclude that there is no one-size-fits-all rule for the use of controls and argue in favor of analyzing case-by-case conditions. Magud et al (2011) is the most important contribution to this literature. The authors develop two general indexes for the use of capital controls for the post-1970s period based on 30 country cases. The authors distinguish between controls on inflows and outflows as a way to separate between the different objectives declared by policymakers. On the one hand, they conclude that controls on inflows tend to make monetary policy more independent, alter the composition of capital flows from speculative to foreign direct investment (FDI), and help to reduce the pressure on real exchange rates to appreciate. In moments of sudden inflows controls seem to be generally effective and a justified policy tool. However, controls on inflows do not seem to be effective at reducing the volume of net inflows and the current account deficit. On the other hand, for controls on outflows, there is only one specific case in which

controls resulted in a reduction of outflows and made room for a more independent monetary policy: Malaysia in 1998.⁷

Other cross-country studies have reached similar conclusions, such as the most recent IMF paper by Habermeier et al (2011, p.19), which argues that controls seem to have little effect on overall inflows and in impeding currency appreciation but are successful in shifting the composition of inflows.⁸ Furthermore, the authors argue that emerging market economies had different outcomes in managing inflows with capital controls due to their different financial conditions. In the case of Brazil, they argue that the large financial sector and well-developed derivatives market reduced the efficiency of controls during the 2000s.

For Latin America, the importance of the different types of flows has also been highlighted by Campion and Neumann (2003, p. 177). They argue that with the growing globalization of economies and new availability of data, it is now possible to distinguish between the different types of financial flows and their relationship to capital controls. The authors collected high frequency data of flows between 1990 and 2000 for Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela, separating between debt flows and equity flows. The study concludes that authorities have been able to shift capital between these groups by using taxation and discouraging short-term disruptive inflows. Similar to the other studies, they suggest a positive contribution to rebalancing capital inflows from speculative to long-term investments.

⁷ Johnson et al (2007) also conclude in favor of outflow controls in the Malaysian experience.

⁸ A previous IMF staff paper also reaches the same conclusions (Ostry et al, 2010).

For exchange controls after the Bretton Woods period, Dornbusch (1986) provides a comprehensive defense of the use of MERs in certain conditions. His starting question is whether they represent a 'perfectly sensible quest for extra policy instruments, or [are] ill-considered distortions with little payoff in terms of effectiveness but major allocation costs' (p. 144), as claimed by the consensus view. He argues that this is a particularly important question because international supervisory agencies, particularly the IMF, were in charge of restricting the use of multiple exchange rates practices since the Bretton Woods period. Dornbusch (1986) presents a counter set of ideas that can also be found in the works of a few other authors who also saw MERs as an important policy alternative.

Dornbusch argues that MERs have three uses that make them an effective policy tool. The first is as an adjustment instrument during periods of balance of payments problems, similar to their use during Bretton Woods. He claims that MERs can provide a mechanism to adjust balance of payments deficits when financing is not available and without causing a large devaluation to the exchange rate and a negative aggregate demand shock. By creating different exchange rates for distinct groups of imports and exports, the MER system can help to improve current account deficits by containing non-essential imports and stimulate groups of exports. As it will be shown in Chapters 5 and 6, this adjustment mechanism fits perfectly with the reasons for the effectiveness of MERs in Brazil in the 1950s, with the MER system being primarily used to correct for the balance of payments deficits.

The second use of an MER system is as a macroeconomic shock absorber in case of a temporary improvement in terms of trade which causes a real exchange rate appreciation. In this case the different sectoral MERs can help to

prevent a large capital inflow shock from having a negative impact on real sectors of the economy, which could otherwise suffer from an over-appreciated exchange rate. This problem became an issue from the 1970s onwards with the rise of oil and other commodity prices.

The third use is as a developmental policy to produce an implicit taxation structure to both generate revenues for the government and subsidize the different sectors of the economy. According to Dornbusch, this use can be measured both as the total net income the MER system generates for the government, as well as its redistributive effects to subsidized sectors. Chapter 8 will focus entirely on this structure of Brazil's MER system, showing that the second MER system after 1957 generated higher revenues to the government as well as subsidizing advanced industrial sectors.

Dornbusch concludes that MERs can be used for these three different objectives, with it being a particularly efficient way to deal with balance of payments problems. Still, he warns that MER systems do cause changes in relative prices in the economy, which the consensus sees as distortions, and which can be easily abused by governments or policymakers. He suggests that the important issue is not whether an MER system is *a priori* effective or not, but whether governments implement them to reach macroeconomic policy objectives. His warning is strongly related to the risk of governments using MERs for political economy reasons, as already discussed in Section 2.2, and which resulted in extremely discretionary systems in Latin America, as shown in Section 2.5.

Kiguel (1995, p. 28), in a World Bank study, offers a similar argument about the effectiveness of MERs to support balance of payment adjustments. He argues

that many countries adopted MERs to prevent a devaluation and as a transitional effort to limit the inflationary effect of a large devaluation or to adjust the current account deficit. He claims this approach usually includes separating exchange rates for current and capital account transactions. The rationale behind this, he argues, is to allow a free floating exchange rate for capital transactions and a more controlled depreciation process for the current account, helping to adjust the current account deficit and limit the inflationary impact. A similar argument is made by Lanyi (1975, p. 714), who also sees a rationale for the separation between capital and current account transactions, although he does not discuss the possibility of different exchange rates for types of current account transactions. He argues that 'a fluctuating exchange rate for capital transactions would remove pressure from official reserves caused by large shifts in capital flows, while at the same time insulating foreign trade from exchange rate fluctuations and eliminating the need for inefficient discretionary restrictions on capital transactions' (p. 714).

Overall, this literature suggests that there is also room for exchange controls in the post-Bretton Woods period in order to manage large capital inflows and help stabilize balance of payments deficits and inflationary effects from devaluations, which diverges from the consensus against the use of these instruments. Interestingly, the use of MERs to support balance of payments adjustments follows exactly the same rationale for their use in the Bretton Woods period.

2.7 The Literature on Controls in Brazil

Despite the widespread use of MER systems in Latin America, there is little analysis of the effectiveness of individual experiences. In the Brazilian case, the

literature offers only a limited take on the MER regime, with just a few authors superficially analyzing the effectiveness of the 1950s regime. The lack of studies of the period in Brazil is also the result of the same problems discussed more generally for the Bretton Woods arrangement, with controls seen as the norm rather than the exception and not attracting attention from scholars. In the case of Brazil, there is an additional problem. The literature has analyzed the MER system as part of the ISI model, largely ignoring its wider macroeconomic implications (for example, Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987; Sochazewski, 1980; Bergsman, 1980; Abreu, 1990; Caputo, 2007). These authors have tended to assume that MERs were an effective tool for balancing macroeconomic conditions in Brazil during the 1950s, but without showing the reasons for those results. Most of the literature on controls in Brazil is concentrated on the last thirty years, looking at controls because they are seen as anomalies to the current pattern of free flows. This sub-section revises this literature on controls in Brazil after the Bretton Woods period, as well as the few contemporary authors from the 1950s and 1960s who analyzed the effectiveness of the MER regime in Brazil. The larger literature that interprets the MER as part of the industrialization effort is explored in Chapter 3.

Probably the most important contribution of the literature on controls after Bretton Woods in Brazil is the IMF study by Cardoso and Goldfajn (1997). They argue that controls can alter the composition of capital flows in moments of high global liquidity, but have not had sustainable long-run effects on capital flows in Brazil. The authors review the use of controls in Brazil during the 1980s and 1990s and test their efficiency with vector autoregression (VAR) estimations to assess the effect of controls on capital inflows. It is interesting to

note that Cardoso and Goldfajn (1997) follow exactly the same approach as the broader literature on controls in the post-Bretton Woods period discussed above. They assume controls to be endogenous to flows, which means that authorities would only respond with controls in case of an observed market inefficiency. They assume controls to be an inefficient tool *a priori*, and this is why they conclude that controls can only have minor short-term effects altering the composition of flows, solving the market inefficiency of a sudden rise in inflows. The authors do not test for the actual macroeconomic effectiveness of controls, only their efficiency based on a pre-determined theoretical approach.

Similar conclusions were reached by other authors who have adopted a similar approach. Carvalho and Garcia (2006), Goldfajn and Minella (2005), and Jinjara et al (2013) all conclude that controls in Brazil had short-term impacts on financial flows, normally up to six months, but no long-run effects. Interestingly, in arguing against the efficiency of controls in Brazil, Jinjara et al (2013, p. 14) conclude that the rebound of inflows when capital controls were abolished in the 2000s was actually larger than their fall by the time of the initial adoption, suggesting that, while some temporary relief was achieved, the ultimate result was even stronger net inflows than initially desired.

On the other hand, there are other authors who suggest a more important role for controls in balancing flows in Brazil. Vieira and Holland (2003, pp. 24-25) argue that controls had a more significant long-term effect to alter the composition of capital flows towards less short-term disruptive forms of capital in Brazil), directly challenging Cardoso and Goldfajn's (1997) results. They argue that Brazil faced a much more complex period of capital volatility in the late 1990s and early 2000s and controls were an important tool to reduce the negative externalities of inflows. Vieira and Holland (2003) use similar VAR

estimations, but extend the time series to 2002, whereas Cardoso and Goldfjan (1997) only have data up to 1995. Vieira and Holland argue that the stabilization of macroeconomic conditions and the fall of inflation after 1994 made a significant difference to the capacity of controls to effectively alter inflows. Similar results were obtained by Silva and Resende (2010, p. 644), who also tested the efficiency of controls during the 1990s using VAR estimations. They conclude that in moments of large capital volatility, only the adoption of quantitative controls were able to contain the massive capital flight, such as during the 1999 crisis.

While there are many studies testing the efficiency of controls in Brazil over the past few decades, the same is not true for the Bretton Woods period. The best known studies on the MER regime of the 1950s focus on the historical narrative and the contribution of controls to the industrialization process, and just assume it dealt with macroeconomic conditions without really testing its effectiveness (Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987; Sochazewski, 1980; Bergsman, 1970; Abreu, 1990; Caputo, 2007). A gap in the literature thus exists in the Brazilian case, as for other countries during the Bretton Woods period.

2.8 Chapter Conclusions

This chapter has revisited the international context of the Bretton Woods system and the literature on exchange controls. It has also discussed methodological aspects of how to analyze these historical cases. There are four main conclusions to be drawn.

First, this chapter has demonstrated the need for more empirical case studies on controls that can tackle both the effectiveness of the systems, including

counterfactual exercises, but also their political economy, which has been a central reason for the adoptions of these instruments in history. Second, it has shown the limited literature on exchange controls for the Bretton Woods period and the negative consensus against MERs. Third, it has shown that, despite this negative consensus, there is a group of authors who provide the rationale for the adoption of MERs for the Bretton Woods period and also for the period after financial liberalization. This literature particularly emphasizes the effectiveness of MERs for solving balance of payment problems. Finally, the chapter has discussed the unique contribution that Brazil's case could make to this literature. Brazil's MER system was unique in terms of its design, duration and the relationship with the IMF, differing from other cases in the region.

This is the international background to the case study of Brazil in Chapters 4-8. The next chapter will provide the background from Brazil's perspective, placing the MER system within the context of debates about the ISI model, its instruments, and its effectiveness for stimulating industrial development.

3. Industrialization and its Interpretations in 1950s Brazil

Chapter 2 presented the context of the Bretton Woods arrangement and the debates about the role of exchange controls. This chapter introduces the context of the Brazilian experience, placing the case in wider historical and historiographical perspectives. The chapter thus discusses the political context of Brazil in the 1950s, as well as the existing historiographical interpretation of industrialization in Brazil and the Latin American region. Particular attention is given to debates about the rise of 'developmentalism' in Brazil and Latin America in the post-war period, together with the standard ISI model that is used to interpret industrialization. An important contribution of this dissertation will be to show the ineffectiveness of traditional instruments, such as tariffs and the MER system, for promoting industrialization, thus challenging important aspects of the consensus about the ISI model.

3.1 The Emergence of Industrialization in Brazil

Before discussing the different interpretations of the causes of industrialization in Brazil in the 1950s, it is necessary to place that unique period in a long-term perspective, in order to show how extraordinary it was.

The beginning of a local manufacturing sector in Brazil dates back to the late part of the nineteenth century. There are four main views to explain the emergence of industrialization in Brazil: the 'adverse shocks' theory; the positive relationship between primary export-led expansion and industrial growth; the 'late capitalism' theory; and finally the influence of government policies (Suzigan, 2000, p. 30).

The theory of 'adverse shocks' states that industrialization was a response to the three principal shocks of the first half of the twentieth century: the two World Wars and the Great Depression. These shocks caused a decrease in the supply of industrial products in foreign countries and consequently changed the relative prices between manufacturing and agricultural commodities. For example, between 1932 and 1939, Brazil's terms of trade declined by about 25% due to the rise in prices of imported manufactured goods and the decline in prices of exported coffee (Abreu, 1990, p. 410). In this context, the local industrial sector was able to occupy the place left by imports and profit from the relative increase in the price of their products. The adverse shocks theory is linked to the traditional ideas of CEPAL and 'developmentalist' economists of the post-war period, which will be explored below. Its main supporters in Brazil were Simonsen (1973), Tavares (1975), and Furtado (1959), who generally argued that the industrial sector is essential for overcoming the long-term dependence on primary commodities, reducing the vulnerability to periods of cyclical deterioration in the terms of trade. These authors argued that there should be a progressive detachment from the primary export sector to allow the industrial sector to grow. This opened space for policymakers to use protectionist policies, especially tariffs, to protect the position of the emerging local manufacturing sectors, even in moments of improving terms of trade.

The second theory defends the existence of a positive relationship between the industrial sector and the export sector. It claims that there is a positive linear relationship between the performance of Brazilian exports (mostly coffee) and the emergence of industrial production. Dean (1971) and Nicol (1974) were the main authors of this theory. They argue that when exports increase, domestic industries grow, and, similarly, when the value of exports decrease, the

industrial sector faces periods of decline or slower growth. This dependence on the coffee sector's performance contrasts diametrically with the theory of adverse shocks. Dean (1971, p. 94), for example, opposes the view that Brazilian industrialization was caused by external shocks and that the decline in coffee provided the initial trigger for industrial development by forcing a devaluation of the Brazilian currency, leading to greater support for industrial growth. He argues that during the fall in the coffee trade, the demand for industrialized products also fell. And industrial inputs, which were mostly imported, became more expensive, thereby reducing the industrial sector's growth potential.

The third theory is the 'late capitalism' model, proposed by Mello (1994). It states that in periods of export expansion, there is a natural surplus of capital that shifts from exports to the industrial sector. At the beginning of industrialization, declining coffee prices negatively affect the industrial sector because of the lack of capital to be invested in the local manufacturing sector, much as in the theory of Dean and Nicol, but the relationship is inverted over time and is not linear. In time, declines in coffee prices start benefiting the local manufacturing sector. The reduction of export receipts restricts the import of manufactured goods, which turns into a natural protection that encourages consumption to shift to the domestic market. This substitution of imports increases the absorption of the local demand for manufactured products and results in further industrialization (Suzigan, 2000, p. 33).

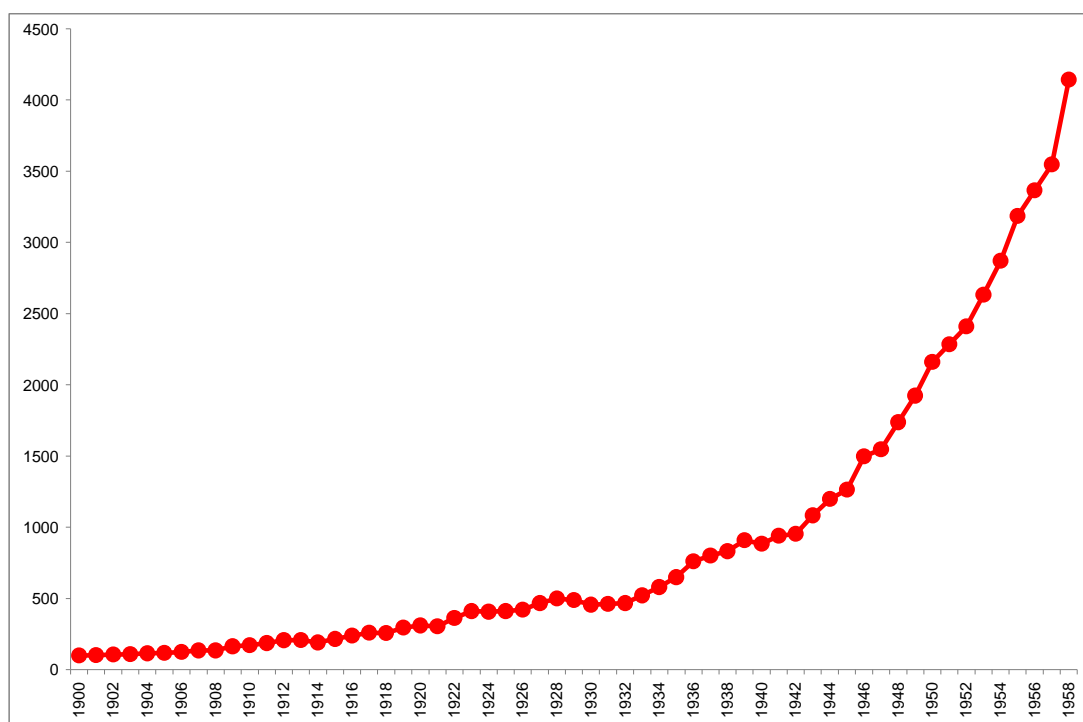
The last theory is industrialization based on government policies. Both Suzigan (2000b, p. 14) and Versiani and Barros (1977, p. 313) argue that policies such as the exchange rate and tariff protection were already important for the emergence of industrialization in Brazil long before the peak of post-war policies, even if in many cases they were not directly targeted towards import

substitution. The need to raise revenues was the main reason for a rise in tariffs, while exchange rate depreciation, usually caused by balance of payments stress, created an unintended protection for the local manufacturing sector during the end of the nineteenth century and first half of the twentieth century in Brazil and was positive for industrialization. They encouraged the diversification of industrial production before the 1920s and created a more developed industrial sector before the shocks of the interwar period.

Fishlow (1972) made an important contribution to this debate, although his views do not support only one of the above theories. While his views mostly support the theory of adverse shocks, they also contain various aspects of the other thesis, such as the effect of unintended policy instruments on industrialization and the positive effect of capital accumulated in the coffee sector. Fishlow (1972) claims that the first impulse to industrial production in Brazil was the result of the inflation and exchange rate volatility brought about by the debt crisis in the late 19th century (the so-called *encilhamento*). The weaker exchange rate provided the initial support for import substitution of some final manufactured goods at the turn of the century. Fishlow then underlines the positive effect of the First World War on the demand for domestically produced goods. He stresses that the interruption of imports of intermediate goods and capital limited Brazil's industrialization, but also argues that the war allowed the capital accumulated in the coffee sector to be invested in the local manufacturing sector. Finally, Fishlow argues that during the Second World War, the overvaluation of the exchange rate, which resulted from improving terms of trade, supported the import of capital goods and promoted industrialization. Fishlow thus provides a narrative that places a strong emphasis on the positive effects of the shocks since the end of the nineteenth

century, while also using elements from the other theories to explain how these shocks promoted industrialization in Brazil.

Figure 3.1 – Real Industrial Production Index, 1900-1958 (1900=100)



Source: For 1900-1947, Haddad (1978, pp. 7-8); for 1947-1959, Fundacao Getulio Vargas (FGV)'s *Revista Conjuntura Economica*. The two indexes were chained and adjusted to the same base of 1900=100.

Figure 3.1 shows that the start of industrial growth in Brazil happened well before the interwar period, which is the process these different theories have tried to explain. Table 3.1 shows the averages of industrial production growth by decade between 1900 and 1990. In the first half of the century industrial production averages ranged between 4% and 7%. These averages then increased from the 1940s onwards, rising to between 7% and 9% from the 1940s to the 1980s.

Table 3.1 – Average Industrial Growth- 1900-1990

Decade	Average Annual Real Industrial Production Growth (%)
1900-1910	5.65%
1910-1920	6.40%
1920-1930	4.17%
1930-1940	7.02%
1940-1950	9.46%
1950-1960	9.20%
1960-1970	7.10%
1970-1980	9.00%
1980-1990	0.04%

Source: For 1900-1947, Haddad (1978, pp. 7-8); for 1947-1959, FGV's *Revista Conjuntura Economica*; and for 1960-1990, IBGE (2017). Averages of industrial growth were calculated based on annual data.

There is no agreement among the different theories on the causes of industrialization in the first half of the twentieth century, and although the authors have used empirical evidence to support their theories, it is very difficult to prove the causation between coffee exports or unintended protectionist instruments and industrialization.⁹ Nevertheless, there is one generalized aspect that brings them together. Pre-war industrial development is seen as the result either of international shocks, unintended consequences of government policies, or a natural accumulation of capital from the coffee sector, which was then invested in the manufacturing sector. It was not, they agree, the direct consequence of economic policy targeted at industrialization. This is the main difference with the interpretation of the rapid industrial growth from the 1950s onwards, which has largely been explained as a result of intentional government policies. This interpretation is the topic of the Sub-

⁹ Suzigan (2000) spends most of his book trying to test the causation between coffee exports and industrialization.

section 3.3, where it will be shown that MERs and tariffs, not only in Brazil but also in the rest of Latin America, are described as the main instruments for this policy-led industrial effort in the post-war period.

3.2 The 1950s Industrial Growth

The following sections will discuss the different interpretations of Brazil's industrial growth in the 1950s. This section will first present the most important characteristics of that growth.

The 1950s were a moment of great transformation in the composition Brazil's industry. Until the end of the 1940s, Brazil's industry was focused on producing final goods, resulting from the process of early industrialization that was described in Section 3.1. During the 1950s the industrial sector grew in importance, as well as shifting from traditional industries normally seen in the first wave of industrialization, such as textiles and food, to more advanced industries, such as mechanical engineering, metallurgy, electrics, chemicals, and intermediate and capital goods. In this way, it became more like the type of industrial structure that is normally seen in more advanced or dynamic industrial societies (Malan et al, 1977).

During first wave of industrialization in the 1930s, industrial production grew by 60%, although traditional industries, such as textiles and food, still represented about 50% of the total value of production at the end of the war (Versani and Barros, 1977, p. 239). As discussed in Section 3.1, the interwar shocks played an important role in stimulating the import substitution of traditional industries in Brazil. During the Second World War, the restrictions to global trade and the reduction in the overall availability of manufactured goods resulted in a natural protection against imports and supported the rise of

industry. By the end of the 1940s the substitution of traditional industries was almost fully completed, as Table 3.2 shows.

Table 3.2 – Import Composition and Import Ratio, 1949

	% Imports	Import Ratio
	1949	
Steel	13.5%	29%
Machinery	17.5%	176%
Electrical Material	7.0%	81%
Transportation Material	18.6%	130%
Pharmaceutical	22.0%	41%
Minerals (Non-metals)	3.1%	11%
Paper	1.3%	11%
Rubber	0.1%	1%
Wood	0.2%	1%
Textiles	7.6%	7%
Food	7.8%	4%
Beverages	0.5%	2%
Publishing	0.4%	2%
Leather	0.3%	3%

Source: Tavares (1975, pp. 92-93). Original data from IBGE (1949). Import ratio is the ratio of imports to domestic production and calculated based on production values.

Table 3.2 shows that by 1949 most consumer sectors, such as textiles, food, beverages, leather, and paper, already represented a very small share of overall imports. The import substitution of these sectors was fully completed, as shown by the import ratios (that is, the ratio between imports and domestic production). Most of the traditional industries had import ratios around only 2-3%, which means imports from those industries were equivalent to only 2-3% of domestic production. Advanced industries, such as steel, machinery, and electrical and transportation material, on the other hand, were still mostly imported, with import ratios ranging from 30% to 176%.

This picture began to change after the war, with industrial production growing faster and exports losing importance in GDP. The share of the industrial sector in GDP rose from 19% in 1949 to 30% in 1959 (IBGE, 1949, 1959). The

performance of the economy was exceptional from the end of the war up to end of the 1970s. During this golden age, the annual average GDP growth rate was 7.3% and of industrial production was 8.8% (IBGE, 2017). For the 1950s specifically, average GDP growth was 7.4% per year and industrial production was the main driver of that process, with average growth around 10% per year (Aldrighi & Colistete, 2013, p. 6). At the same time, the share of agriculture in GDP declined from 27.7% in 1947 to 21.4% in 1961 (Schmitter, 1971, p. 27).

The 1950s can be divided into two separate periods to analyze the evolution of industrial development, separating the decade into two parts. Although the literature tends to have a very similar interpretation of the whole decade, as will be discussed in Section 3.3, this separation is important because the instruments and policies differ significantly for the two periods. Between 1947 and 1955, including the Vargas administration (1951-1954), the share of the industrial sector in GDP increased from 17% to 22% (IBGE, 1951-1954), and more importantly its internal structure changed significantly with the increased participation of dynamic branches and the production of durable consumer goods, as well as intermediate and capital goods (Versani & Barros, 1977). By 1955, almost all sub-sectors of manufactured goods were being produced domestically, whereas in 1949 industrial production had been concentrated on non-durable consumer goods (Bergsman, 1970, p. 54).

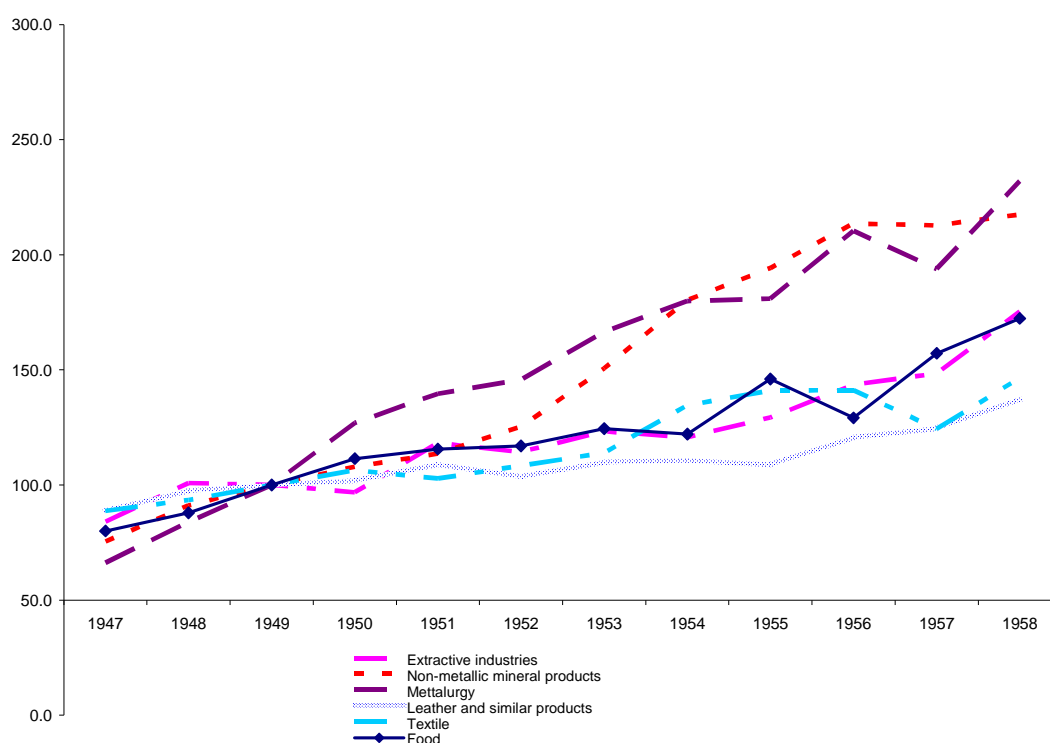
The period 1956-1961 was characterized by an even further acceleration of the industrialization process, with industrial output growing at an annual cumulative rate of 11%, while GDP grew at 7%. Industry's share of GDP increased from 22% to almost 30% by 1961 (IBGE, 1956-1961). This was the period of Kubitschek's famous Target Plan ('Plano de Metas'), an ambitious and comprehensive infrastructure and industrial investment program (Tavares,

1975). After 1955, the industrial sector became more diversified and vertically integrated, with the rise of advanced industries, both consumer durable goods but also capital goods, such as metallurgy and vehicles. Although some of these advanced sectors, such as vehicles, emerged in the first half of the decade, they had their most significant development in the second half. Bergsman (1970, p. 55) argues that in this later period it is possible to see a progressive vertical integration of the industrial sector in Brazil, with 'investments causing the simultaneous creation of both demand and supply for a wide variety of industrial products'. The best example is probably the rise of the steel sector. Although it was expanding since the war, had the steel sector's fastest growth came in the second half of the 1950s, providing the inputs for the development of the motor vehicles sector (Caputo, 2007, p. 41). Shapiro (1994) shows that the rise of the vehicles industry was mostly concentrated in the second half of the decade, with the Kubitschek's administration using the sector as the quickest and most effective way to further industrialize Brazil. She argues that, until that period, Brazil's auto industry consisted of foreign subsidiaries or licensed domestic firms that assembled vehicles locally from fully imported or semi-knocked down kits. From the mid-1950s onwards transnational corporations moved to the country, resulting in 95% of Brazil's supply of automobiles being made domestically by the end of the decade.

During the whole decade, the most important aspect of Brazil's industrialization was the shift in industrial structure. The share of food and textile industries ('traditional industries') in the value of total industrial production decreased from 18% to 12%, with an increase in the relative weight of mechanical engineering, steel, durable goods, electrics, and chemicals – advanced industries that together rose from 23% to 34% (IBGE, 1949, 1959).

Aldrighi and Colistete (2013) state that in this initial post-war period of import substitution a core group of traditional and modern industries managed to adapt foreign technology, helping to substantially increase productivity and maintain growth for a reasonable period of time. Labor productivity growth for industry was about 40% between 1951 and 1961 (Colistete, 2007, p. 98).

Figure 3.2 – Real Sectorial Industrial Production, 1947-1958 (1949=100)



Source: Data from FGV's *Revista Conjuntura Economica*, (1947-1958).

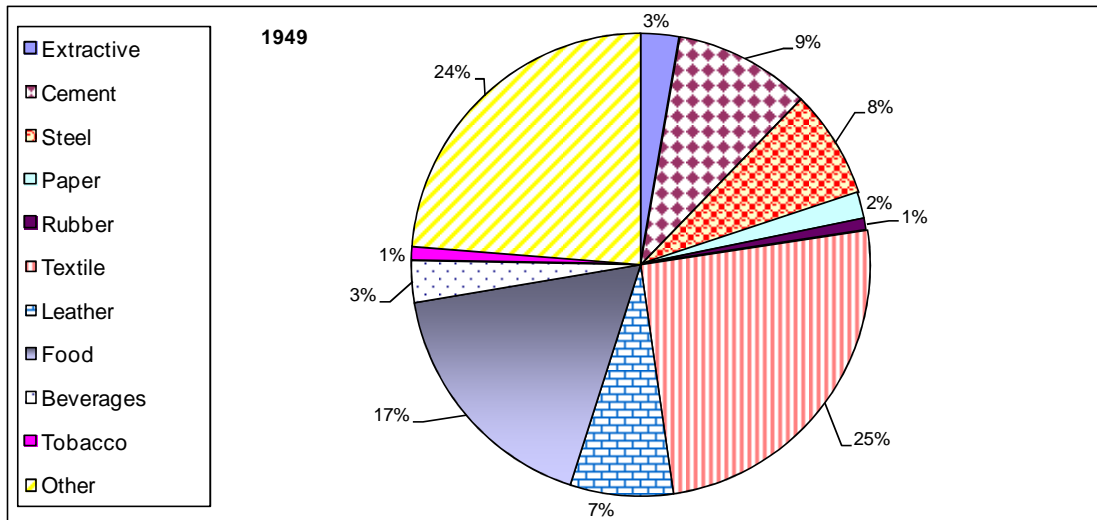
Figure 3.2 illustrates this sectoral divergence, which transformed the composition of the industrial sector during the 1950s. Industries such as textiles, leather, and food, while still growing, lagged behind compared to non-metallic mineral products and metallurgy, which were more advanced industries. The average annual growth rate of the textiles sector was 4.7% during the decade, while steel grew at 12.2% (FGV, 1950-1960). By the end of the period, industrial production was more diversified and vertically

integrated, with both capital and consumer goods being an important part of the structure (Baer, 1972, p. 98). The industrial expansion thus brought a shift from traditional industries to an advanced and integrated industrial sector.

A similar process can also be seen in the employment structure, not only with a significant increase in the overall labor force, but also its internal composition. During the 1950s the share of economically active population in the tertiary sector increased from 20.1% to 28.8%, while the share in the primary sector decreased from 71.0% to 58.5% (IBGE, 1949, 1959). This represented an increase of 33% in the overall labor force of the manufacturing sector during that decade, an impressive average of 3.3% per year (Baer, 1972, p. 100).

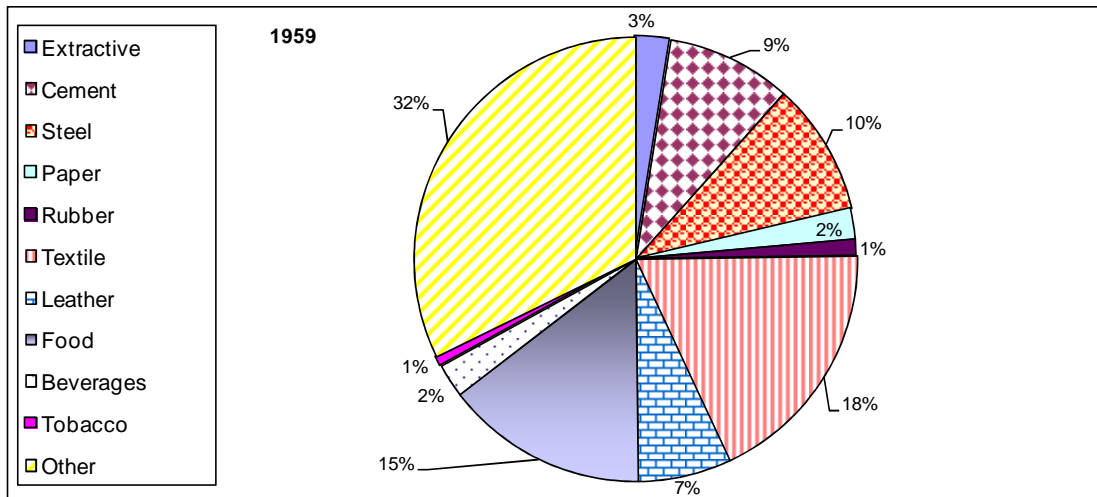
Figures 3.3 and 3.4 show the changes in the composition of labor within the industrial sector during the 1950s. Traditional industries such as food and textile lost share of total employment. Textile, for example, lost 3% of its labor during the decade, while food, beverages or tobacco saw their level of employment stagnated during the decade. This contrasts with the significant increase in the labor share of advanced industries such as steel. Labor in the steel sector, for example, increased by almost 70% during the 1950s. There was a clear stagnation of employment in traditional industries versus an important increase in labor in advanced industries.

Figure 3.3 – Labor Composition in Industry, 1949



Source: IBGE (1949). Shares were calculated as a percentage of the total labor force in industrial sector

Figure 3.4 – Labor Composition in Industry - 1959



Source: IBGE (1959). Shares were calculated as a percentage of the total labor force in the industrial sector

3.3 Beyond Import Substitution: Interpreting Industrialization in 1950s

Brazil

Brazilian economic historiography of the 1950s tends to interpret the transformation of the structure of the industrial sector from traditional to advanced industries according to the Latin American development school ('desenvolvimentistas') and the ISI model. The literature characterizes the 1950s as a period when the goal of rapid economic growth and industrialization enjoyed a nationwide consensus (Kuperman, 2012, p. 74), bringing together the government, elites, and organized urban labor. This alignment of interests resulted in governments that produced highly populist expansionary policies that made use of import substitution instruments to support the rise of modern and advanced industrial sectors (Bielschowsky, 1996, p. 7).

Politically, the 1950s were an interesting period in Brazil due an incipient experience of democracy. After the end of Vargas's dictatorship (the *Estado Novo*) in 1945, Brazil went through a period of 'open politics' that lasted until the military coup of 1964. 'Open' is one of the terms commonly used to characterize the period because there was no full control of the political power by a single person or group, and there was a reduced form of democracy with elections taking place. Only a small part of the population could be part of the political system (about 15% of the population voted in the 1950 election, or 8 million people, according to the Electoral Court), with restrictions on participation based on income, literacy, and other characteristics (Bethel, 2008, p. 87). Klein and Luna (2014, p. 143) called this period 'formative democracy': a return to democracy between two dictatorships that nonetheless still had a

restricted access to political power. During this period, a relatively small part of Brazil's population, about 15%, disputed the main political positions and was allowed to participate in the electoral game, mostly representing the interests of the wealthy social groups. This represented an important rise in representation when compared to the previous democratic period, as up to the 1930s only about 5% of the population participated in the electoral process (Nicola, 2002, p. 40). The two presidents of the 1950s, Vargas and Kubitschek, had to play this political game, managing to bring together the diverse interests of the most important social classes: an old agrarian and military elite versus a new emerging urban industrial sector (Leopoldi, 2000; Lyne, 2015). It will be shown that Vargas had problems balancing the political influence of these groups, which resulted in a mixed economic policy framework, while Kubitschek managed to please both groups with a more populist economic approach.

The division in Brazilian society is key to understanding how the two governments operated, and is emphasized by most of the political economy literature on that period (French, 1991; Hilton, 1975; Bueno & Faro, 2004; Baer, 1995; Bielschowsky, 1996; Schmitter, 1971). Skidmore (1982, p. 111) provides one of the most interesting classifications of the division of classes in the post-war period. For him, Brazil had seven social classes in the 1950s. Three were new classes that were growing in importance and favored industrialization and economic policies oriented towards protecting the labor market and shifting away from agricultural (that is, coffee) driven policies. These were the urban industrial elite, urban workers, and an urban middle class, characterized by liberal professionals and private sector business executives. They were born from the growth of industrialization at the beginning of the century, gaining more relevance with the industrial growth during the interwar period.

The next classes were declining in political importance and included the coffee exporters and the importers of manufactured goods. Both were directly linked to the old primary commodity export model of the nineteenth century and had political demands that were complementary, defending open markets for trade and subsidies for coffee exports. The remaining two classes had stable political positions. These were the local agricultural producers and the military. The first were non-politicized, since only a few commodities had to be imported, such as wheat, which meant they never really faced foreign competition and did not need government protection. The military had always been an influential group in Brazil and kept that role during the 1950s. They were generally in favor of the existing agrarian status quo, but the low ranked military were also influenced by the growing middle and working classes, so that they were generally not against the industrialization process (Skidmore, 1982, p. 114).

The main dispute over political influence was between these rising and declining groups of classes, with the agrarian elite being in favor of subsidies and protectionism for their coffee exports, while the urban industrial groups demanded policies oriented towards industrialization (Bielschowsky, 1996). The transformation that Brazilian society was going through with industrialization and urbanization inevitably meant that the three new emerging urban classes were gaining importance and political influence, coffee exporters and manufactured goods importers were losing influence, and local agricultural producers and the military maintained their relative positions (Skidmore, 1982, p. 116). Schmitter (1971) similarly argues that the new manufacturing and middle-class urban groups emerged exactly from the

success of the exporting sector, and finally gained political influence in the 1950s.

Lyne (2015, p. 78) provides an interesting framework for understanding the relationship between politicians and these social groups. For Lyne, the influence of these groups in Brazilian politics was not directly through voting, but was rather based on a clientelist framework. Politicians directly exchanged political support for policy benefits with each one of these groups, adjusting general policies to maintain groups under their control and influence. In this framework, general policies were full of exemptions created exactly to allow all groups to benefit from the government in some form. Lyne (2015, p. 86) calls this framework 'direct exchange linkages', as politicians are not only providing benefits to a specific social groups in exchange for their future votes (an indirect linkage), but were rather diversifying policies to provide direct benefits to various groups.

One of Lyne's (2015, p. 86) examples is the exchange rate policy for exporters during the Vargas period, in which the government provided a bonus to the exchange rate to subsidize exporters, although Chapter 5 will show that this system actually penalized exporters. Other forms of subsidies through the MER system, benefiting industrialists and the government, also resulted from the policy framework implemented in the 1950s. Another example of this approach was the use of state-owned companies (SOEs) to extract quasi-rents and benefits for micro social groups. Musacchio and Lazzarini (2015, 2016) show that although the rise of SOEs in Brazil was more of a feature of the 1970s and the industrial deepening pursued by the military dictatorship, there were already signs of growing state participation in the economy during the 1950s, with the creation of important companies, such as oil company Petrobras, and

of the state-owned Banco Nacional de Desenvolvimento Econômico (BNDE), which in different moments were used to generate policies to benefit specific social groups. The authors thus reinforce Lyne's framework by suggesting that the clientelist model can be applied to the 1950s, when policies were also adjusted to multiple politico-economic goals.

This analysis of Brazil's politics in the 1950s reflects the populist trend in Latin America during the post-war period. Macroeconomic responsibility was generally left to one side in order to benefit urban industrial groups. The fundamental tenet of populism in Latin America was a rhetoric centered on the interests of 'the people' by a leader whose attractiveness to the masses is secured via their strong and charismatic personality. Knight (1998, p. 223) describes populism as a political style that rallies the poor behind a charismatic leader. The coalition of support commanded by populist leaders normally includes not just the working classes, but the middle classes and industrialists as well. Government-led industrialization features strongly in this populist agenda (Ioris & Ioris, 2013; Conniff, 1982). But in practice, as Lyne (2015) points out, although there is a general nationwide agreement in favor of industrialization, policies have to be adjusted to maintain control over the different interest groups; otherwise, their coalitions would fall due to the disputes between the rising and declining classes.

In terms of economic policy, the most common feature of populist governments is the use of rapid expansionary fiscal and monetary policies to support industrial expansion, with the government at the center of this growth. Charismatic populist leaders, such as Vargas and Kubitschek, often promised fast economic growth for the huge numbers of poor via a redistribution of income. However, as Sachs (1989, p. 5) points out, these governments often

resorted to policies that merely resulted in high inflation and severe balance of payments crises. Dornbusch and Edwards (1990, p. 8) define economic populism along the same lines, arguing that it is an 'approach to economics that emphasizes growth and income redistribution and deemphasizes the risks of inflation and deficit finance, external constraints, and the reaction of economic agents to aggressive nonmarket policies'.

Yet, as will be shown in this dissertation, the Vargas administration still managed to impose some control over budgetary and monetary policies and was more macroeconomically responsible. This reflected its inability to build a unified consensus around populist policies, as it responded to the strong opposition of the old elite. The Kubitschek administration, on the other hand, is a clear example of expansionary populism because it created subsidy channels to benefit different social groups, with predictable macroeconomic consequences.

The persistence of populism has been, according to Weylang (2003, p. 1096), a central part of Latin American politics for about a century. It can be explained by a number of key factors, such as the high inequality and weak political systems. The appeal for a rapid redistribution of wealth was far more attractive for leaders and the population at large than long-term policies of gradual growth. Sachs (1989) cites pressures for increased living standards from the poor, the short tenure of governments, and the inability to tax elites as primary reasons for populism's continuing persistence. Dornbusch and Edwards (1990, p. 8) explain the persistence of populism as a result of the initial macroeconomic conditions that makes it attractive to the population, which is usually poor economic performance with very moderate growth or stagnation, resulting in lower standards of living.

In this clientelist system in which politicians had to keep different social groups under control, Bielschowsky (1996) provides a good description of the different economic schools of thought behind these political groups. He defines two main groups in Brazilian economic thinking in the post-war period. A group from the Brazilian liberal tradition, which included economists such as Eugênio Gudin and Otávio Gouvêia de Bulhões, was also influenced by new ideas arriving from Bretton Woods and the IMF; and a group of 'developmentalists', who, despite having internal sub-divisions, was mainly linked to Roberto Campos, Celso Furtado, and Roberto Simonsen, defenders of pro-industrialization strategies and highly influenced by the ideas emerging from CEPAL.

These two lines of economic ideology were at the core of the dispute over policymaking at that time, and reflected the social classes described above. The 'developmentalists' represented the rising industrial sector, while the liberals, although they did not represent any particular organized group, were guardians of the tradition of exporters and defenders of free trade. It will be shown that although industrial ideas were rising and becoming dominant in policymaking in that decade, the liberal tradition still had influence over exchange rate and monetary policies, particularly during the Vargas presidency.

Most of the literature uses the ISI model to interpret the industrial growth and the rise of advanced industries in that period. Bruton (1998, p. 907) provides a clear definition of the ISI model, describing it a set of ideas adopted by policymakers and governments who believed that 'the appropriate strategy for development was to replace imports from the rich North with their own domestic production. Large scale comprehensive planning, rather than

markets, was assumed to be the appropriate instrument'. Essentially, ISI was an economic model that advocated the rise of the local industrial sector by substituting imports and giving the government a key planning and execution role in the process.

ISI had its intellectual foundations in Latin America during the 1950s, when the Argentine economist Raúl Prebisch (1949), together with Brazilian economist Celso Furtado (1959), developed the basis for why countries should protect their local industrial sectors to overcome dependence on primary commodity exports in a context of deteriorating terms of trade. According to them, developing countries needed to create local vertical linkages and they could only succeed by creating industries that used the primary products already being produced domestically. The core theoretical concept behind the Brazilian developmentalist school was to design policies that provided sufficient protectionism to allow domestic infant industries to prosper (Furtado, 1959).

A key aspect of the ISI model was its application by policymakers with the use of a series of instruments to provide protection to the local industrial sector and stimulate the substitution of imports. As Bruton (1998, p. 911) says, '[t]he import substitution idea, by its very nature, involved protection, and from the beginning of the 1950s virtually all developing countries began to put in place a variety of instruments to protect their economies from a large number of imports'. Both the traditional literature of the 1970s and 1980s (Tavares, 1975; Weisskoff, 1980; Versani & Barros, 1977; Baer, 1972; Fishlow, 1972), as well as more recent revisions by economic historians (Abreu et al, 1997; Colistete, 2006; Kaufman, 1990; Lewis, 2005), emphasized the importance of import substitution instruments such as tariffs, exchange controls, price

administration, subsidies, and direct government participation as central for the industrial strategy of the ISI model in Latin America.

Most Brazilian authors from the 1960s to the 1980s interpreted the industrial take off of the post-war period with this framework, giving a large role for protectionist instruments such as tariffs and exchange rates to explain the impressive industrial growth. Protection was given to the local manufacturing sector by changing relative prices, thereby forcing a shift in consumer demand from imported to locally produced goods. This was usually achieved with the introducing of ad valorem tariffs, managing exchange rates or introducing mechanisms to alter the domestic prices of goods. The combined effect of these traditional instruments is summarized as the effective rate of protection (ERP). The simple formula is $ERP = (1 + t) * R * P_m / P_d$, where t is the ad valorem tariffs for a specific sector, R is the nominal exchange rate, P_m is the import price of that sector, and P_d is the domestic price of that same sector (Brandão e Carvalho, 1991, p. 62). Policymakers could increase the protection given to a sector by interfering in any of these variables, with the most common being the application of ad valorem tariffs. As it will be shown below, the MER system of the 1950s in Brazil was targeted to create differentiation between sectors and provide protection to the local manufacturing sector. In practice, however, Chapter 7 will show that this had only a minimal impact on industrial growth.

Most authors claim that Brazil's industrial growth was the result of these instruments. According to Tavares (1975, p. 95), during the 1950s the import coefficient declined in traditional industries as well as in advanced industries, reflecting the progress of import substitution. She claims that 'there was a considerable effort of import substitution performed by almost all manufacturing industries' (Tavares, 1975, p. 96). Abreu et al (1997, p. 3) state

that 'high tariffs, or non-tariff barriers after 1930, have been a crucial feature of import-substitution in Brazil'. Weisskoff (1980, p. 665) argues that 'Brazilian economic growth was spurred by deliberate and accelerated promotion of modern industry'. And Versani and Barros (1977) argue that the currency structure had a direct impact in this transformation by bringing advantages to dynamic sectors and stimulating imports of capital goods.

Hirschman's (1968) claimed these instruments of protection were the main feature of the ISI model to stimulate industrial growth in Latin America. They are one of the four impulses that supported industrialization in the region in the 1950s and 1960s. For the author, import substitution policies were easily welcomed into the existing social and political environment of that period, as in the case of Vargas and his coalition of urban classes and industrialists, facilitating their growth during the second half of the twentieth century. He argues that there were 'four impulses' for the adoption of the ISI model in that political environment: most importantly, balance of payments difficulties and government policies, such as subsidies and tariffs, but also the world wars and the gradual growth of income.

The ISI consensus remained at the core of the historiographical interpretation of industrialization in the 1950s and 1960s, without suffering much criticism. Few authors of the time have written against the ISI consensus. Leff (1967) was one of them and had a critical view of the ISI consensus. He claims that the post-war period was characterized by a singularly positive view of ISI on the part of policymakers and public opinion, supported by various economic schools of thought. His criticism is concentrated on the lack of policies designed to stimulate exports, which he argues were completely ignored by scholars and policymakers as the alternative channel to overcome the

dependency on primary commodities and balance of payments problems. Another author who also criticized the ISI consensus at that time was Macario (1964, p. 77). He agrees with Leff that there was an indiscriminate support for import substitution, which, instead of providing protection to the most efficient industries to prepare them for international competition, only maintained the status quo of an inefficient local manufacturing sector.

The ISI consensus has been revised by important authors in recent years. Yet, although in some cases they have criticized the outcomes of the ISI model, they have not challenged the consensus that industrialization was mostly the result of protectionist instruments. Haber (2006) has a strongly critical view of the process. He claims that the peak of the ISI policies of the post-war period resulted in inefficient protected industries that were not capable of competing in international markets when protection was finally removed in the 1990s.

Colistete (2006, 2010) is the Brazilian author who also provides an interesting revision of Brazil's experience of industrialization, arriving at a more positive assessment than Haber. Colistete (2006) discusses the importance of CEPAL ideas for Brazilian industrialists in the 1950s and how they shaped policymaking during that decade and the following one. He states that the defense of industrialization was their main goal and that tariffs were a central policy tool to reach this objective. Colistete (2010) provides a longer revision of industrialization in Brazil from 1945 to 1979, and finds evidence of important labor productivity growth in the post-war period and of the manufacturing sector becoming more technologically sophisticated, despite the criticisms of

Haber.¹⁰ He also finds evidence that this productivity growth lagged behind other industrializing and developed countries from the mid-1970s onwards, suggesting a more heterogeneous structure to Latin American import substitution than the widespread view of inefficient industries across the board.

Both the 1960s and 1970s literature that developed the ISI consensus (Hirschman, 1966; Tavares, 1975), as well as important recent revisions (Taylor, 1998; Haber, 2006; Coatsworth & Williamson, 2004; Efrench & Palma, 1990), have reached a consensus that two general concepts are applied to most cases in the region: (1) Latin American was passing through a strong phase of import substitution in the post-war period based on the relationship between governments and industrialists; and (2) this resulted from strong protectionist policies for the local manufacturing sectors via tariffs and other trade controls. These concepts and the influence of the ISI consensus are clearly present in the Brazilian literature on the MER system in Brazil (Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987; Sochazewski, 1980; Bergsman, 1970; Abreu, 1990; Caputo, 2007), which essentially explains the changes to the system in 1957 as an effort to increase protection while differentiating between sectors, in order to promote import substitution industrialization in more advanced industries.

One of the problems of the ISI consensus is this strong emphasis on protectionist instruments such as tariffs and exchange controls as the sources of

¹⁰ In two other papers, Colistete (2007, 2009) shows that this labor productivity growth was strongly related to the concentration of profits in the hands of industrialists, rather than wages for workers. This caused a strong increase in Brazilian inequality during this golden age of industrialization.

industrialization. There is a strong consensus that these instruments were adopted in the post-war period in Latin America and Brazil, and explain a significant portion of the increase in industrial growth. Some authors have, however, placed an interesting emphasis on a larger set of government policies rather than just protectionist instruments. Although they are all conceptually part of the ISI model, this distinction is important for this dissertation because Chapters 7 and 8 will exactly show that the traditional protectionist instruments (tariffs and exchange rates) do not explain most of Brazil's industrial growth, which is actually mostly explained by other government policies.

Baer (1972, p. 97) argued that after the Second World War most 'of the larger countries of Latin America implicitly or explicitly accepted the Cepal analysis of the hopelessness of gearing their economies towards the traditional world division of labor'. But he also argued that states used a large collection of instruments to do so, including tariffs and exchange controls, but also subsidies for capital goods imports, cheap loans by government development banks, and the direct participation of government in certain industries. Bergsman (1969) also puts a lot of emphasis on the government role in that process. He argues that 'throughout the period of postwar growth, protection, public investment and investment subsidies generally complemented each other' (1969, p. 32). There was, then, a broader government effort to promote industrialization that went beyond the use of protectionist instruments.

Fishlow (1972) made an interesting contribution to this debate by arguing that although we cannot read the minds of policymakers, it seems likely that many of the impulses for import substitution came from the unintended effects of other policies rather than direct protectionist policymaking, which is a similar

argument to the literature on the early rise of industrialization in Brazil that was discussed in the last sub-section (Suzigan, 2000). He argues, for example, that the overvaluation of the exchange rate during the war did more to stimulate and subsidize the import of capital goods to promote industrialization than explicit tariffs or other forms of direct trade control. Below it will be shown how the MER indeed was a channel to subsidize imports in the later part of the 1950s. Similar views on the role of the state are also presented by Kaufman (1990), who claims that the Brazilian case is characterized by an inward-looking strategy in which the state participated in all forms of industrial development, not only in providing protection but also in financing and directly participating in production. Lewis (2005) also emphasizes the many forms of state participation, including direct investment and price administration. Colistete (2007), who in other articles places strong importance on ISI ideas, also characterizes the period as 'the heyday of 'developmentalism', an economic ideology aimed at state-led, accelerated industrialization, with foreign and domestic private capital as active partners' (p. 93). Mussachio and Lazzarini (2015) see the 1950s as the first period of the rise of state capitalism in Brazil with the creation of the country's first state-owned companies.

One of the interesting aspects of the authors who have emphasized the broader role of the state rather than traditional protectionist instruments is their clear connection to a scholarly debate that emerged in the 1970s on the causes of industrial growth under military rule. The 1960s and 1970s were characterized by the rise of military dictatorships across the region, and in Brazil was also another period of important industrial expansion. Many authors characterized the 1960s and 1970s as a period of 'state-led' industrialization or 'industrial

deepening' (O'Donnell, 1973), in which the government took center stage in the industrial development process by not only providing protection but also by financing, expanding, and directly participating in the economy.

The emphasis on the active role of the state in promoting industrial deepening mirrors the literature on East Asia's post-war 'economic miracle'. Kuroiwa (2015, p. 1) defines industrial deepening as policies targeted towards the 'formation of local linkages and the creation of a robust local supplier base'. He argues that governments in many East Asian countries, such as Korea and Taiwan, focused on a group of policies targeted at encouraging vertical integration in the industrial sector, where a strong base of local suppliers directly linked to final goods manufacturers were the key to building competitiveness. These policies included trade protection, local content requirement rules, funding for training and information, financial assistance with subsidized state credit, direct state participation, fiscal incentives, subsidies to imported inputs, and infrastructure investment (Kuroiwa, 2015; Toshiyuki, 2005). There are numerous studies about the post-war industrial deepening process in East Asia,¹¹ and the various policies and instruments used by different countries. As discussed in Chapter 2, this was the policy framework described by Amsden (1992) as 'setting the prices wrong': a large-scale government effort to interfere in relative prices to produce vertical industrialization. The important aspect for Brazil is the industrial deepening concept, which seems to be an interesting framework for analyzing the 1950s beyond the ISI model.

¹¹ Toshiyuki (2005), Fumitake and Fujikawa (1998), and Tham and Wai (2011) are good case studies.

Industrial deepening was first applied to Latin America by O'Donnell (1973), who claimed deepening industrialization was an essential part of 'bureaucratic authoritarianism' – his term for the region's military regimes. His argument is that the elites saw in the military a means to advance industrial capitalism in the region. Serra (1979) provides an interesting contribution to the 'industrial deepening' discussion for Brazil. Against O'Donnell, he argues that deepening did not appear necessary for the survival of capitalism in Brazil in the 1960s and 1970s. More importantly for this dissertation, Serra claimed industrial deepening was already happening in Brazil in the later part of the 1950s, during a democratic period, so it did not need an authoritarian regime. Serra was the only author that has framed Brazil's industrialization in the 1950s as industrial deepening:

The deepening process advanced considerably during the 1950's – especially in the second half of the decade – and at the beginning of the 1960's. It was actively promoted by the administrations of the pre-BA regimes, which would clearly be considered democratic. (Serra, 1979, p. 117)

Serra's arguments are not intended to revise the interpretation of industrialization in the 1950s and reflect the consensus view of the ISI model, but they do provide a description of industrialization that seems to be a more accurate characterization of Brazil's industrial growth in the later part of the decade. Empirical evidence to support the importance of the government's direct role in industrialization will be a key contribution of this dissertation to the historiography of that period, while it also demonstrates the minor role of tariffs and exchange controls. The next section will revise the long-term history

of tariffs in Brazil, which demonstrates exactly that this instrument was not used during most of the 1950s.

3.4 Tariffs and the Long-Term History of Protectionism in Brazil

The case of Brazil challenges some of the above literature on the use of protectionist instruments in the post-war period. Although protection, as discussed, resulted from a much larger group of policies, there is a considerable emphasis on tariffs as the main instrument of protectionism in post-war Brazil. This sub-section explores the history of tariffs in Brazil in the long run and shows that this instrument was not present for most of the 1950s, exactly when the traditional interpretation suggests that they were central to industrialization. The challenge to exchange rates as the other main instrument of protection will come in Chapter 7, when their effect on industrial growth is tested.

The use of tariffs in Brazil had started long before the 1950s, but there was a long period with only a minor use of tariffs between 1934 and 1957, exactly during the main period of industrial take off and the shift towards advanced industries. Tariffs were kept fixed and provided just a minimal level of protection, only returning to the spotlight toward the end of the 1950s, when *ad valorem* tariffs were reintroduced. Chapter 8 will show that even this reintroduction was not targeted at import substitution and was mostly used to subsidize industrialization as part of the process of industrial deepening.

One of most interesting recent contributions is the evidence that tariffs were high in Latin America much earlier than has previously been supposed, resulting in some form of early import substitution, although the tariffs were mostly targeted at increasing tax revenues (Haber, 2006, p. 540; Coatsworth &

Williamson, 2004, p. 206). Versiani and Barros (1977) previously made the same claim for Brazil, arguing that the early days of protectionism were mostly a result of externalities from tariffs designed for other purposes. The evidence shown in Section 3.2 confirms that early substitution did happen in Brazil, as by the end of the 1940s most traditional industries had their substitution fully completed before the 1950s and 1960s period, when the ISI model is normally applied.

This argument also holds well when the economic history of tariffs in Brazil is reviewed. They were first introduced in the country during the end of the colonial period, when in 1808 the King of Portugal moved the crown to Brazil to escape from the Napoleonic Wars. With Brazilian ports becoming an important part of Portugal's expanding trade, the first import tariffs were introduced in the following years. This process continued after independence. During the Empire, from 1822 to 1889, the country established trade relationships with Britain and signed its first important commercial agreements (Silva, 2008, p. 1). Tariffs were not primarily used to stimulate import substitution or the development of the local manufacturing sector. Foreign trade agreements between Brazil and other countries (mainly Britain) essentially exchanged imports of foreign manufactured goods for exports of local primary commodities (Conde, 2002, p. 163).

There were a few moments, however, when tariffs were raised for shorter periods of time, such as in 1844, with the Alves Branco Tariffs, or during the Paraguay War between 1865 and 1870 (Silva, 2008, p. 3). Yet, as in other weak post-independence Latin American states, import tariffs were conceived as an instrument for taxation, and these temporary increases merely resulted from moments of financial stress, such as wars or large debt payments (Conde, 2002,

p. 164). Yet, as Luz (1978, p. 60) notes, these episodes resulted in large tariffs increase, such as the Alves Branco Tariffs, which increased import tariffs by between 20% and 60%, but only for a limited number of goods. It is important to note that during this long period from the nineteenth century up to the Great Depression, the export-led growth model dominated economic thinking in Brazil and most of Latin America (Bielschowsky, 1996). From a political economy perspective, this approach protected the interests of the country's elites: agricultural producers who were primarily coffee exporters (Cortés Conde, 2002). This social group remained a significant part of the Brazilian class structure even after the war, when industrialists and the other urban classes emerged as the most important social groups.

Luz (1978, p. 51) shows that during most of the nineteenth century nationalistic economic thinking, which became the norm in the middle of the twentieth century, had very little influence over the Brazilian society and policymakers. Nonetheless, the fiscal needs of the country resulted in a moderate protectionism that supported the early rise of some industrial production, as discussed in Section 3.1. During the period of export-led growth, voices defending tariffs and protectionism were found coming from a few statesmen, such as Alves Branco and Rodrigues Torres, who reflected the pressure from some isolated industrialists. It was only after the creation of the Industrial Association in 1881 when the industrial sector started to slowly grow in importance and organization. Pressure for protection increased under the leadership of Malvino Reis and Antonio Felício dos Santos, though it remained incipient (Silva, 2008, p. 4).

Broader protectionist policies in Brazil began after the proclamation of the Republic in 1889. There is a long discussion among scholars about whether the

surge in industrialization in the pre-1914 period was 'export-driven' – that is, the result of credit expansion and capital accumulated from export-led growth (Suzigan, 2000) – or actually resulted from deliberate government policies, including tariffs and exchange rate protection (Versiani & Barros, 1977), which was discussed in Section 3.1. According to Versiani and Barros, pre-1914 industrialization in Brazil cannot have been based solely on a direct relationship between agricultural exports and industrial investment. Instead, there were the main factors driving the process: the rise in tariff protection in the late part of the nineteenth century and the exchange rate instability of the country during the first republican period. The world wars and the Great Depression later reinforced protectionist policies due to the strong restriction imposed on imports, but they were not the initial triggers for industrialization. Higher import tariffs were the result of an increased pressure on revenues for the new republic and volatility in exchange rates (Versiani & Barros, 1977, p. 313).

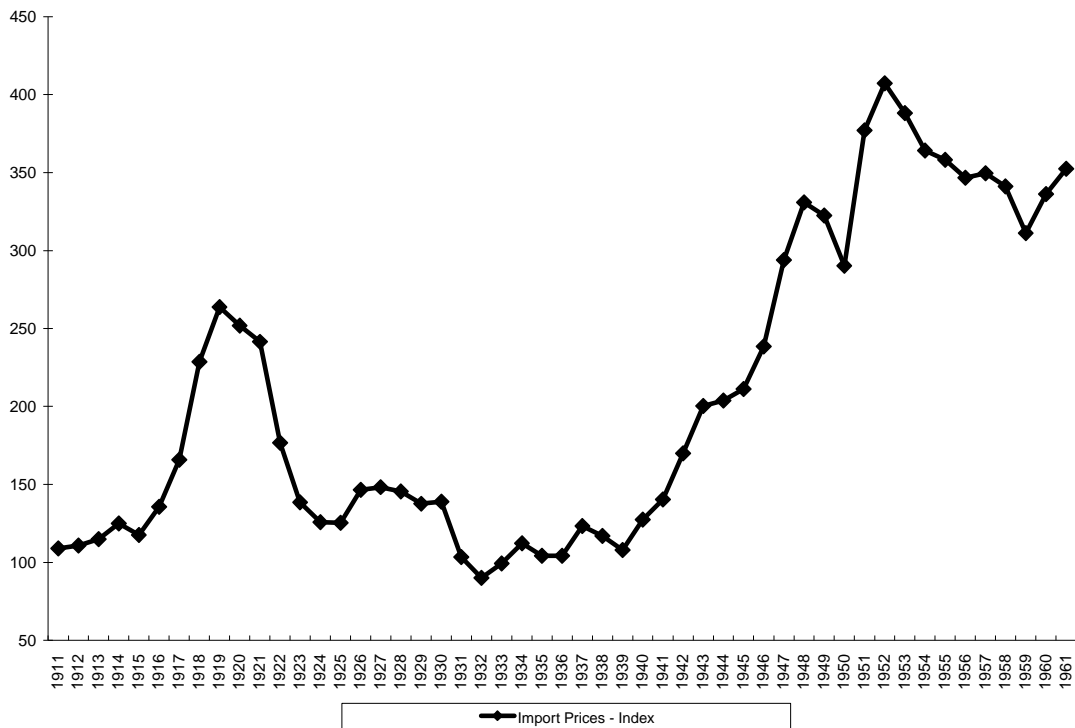
During the first republic between 1889 and 1930, the fight between the agricultural elites who favored free market policies and the growing importance of the industrial sector resulted in changes to the tariffs structure, and the overall trend started slowly moving toward protectionism. Cumulative changes to tariff laws led to more products being transferred from specific nominal tariffs, which were the standard during the Empire, to ad-valorem tariffs, which maintained the level of protection over time. The number of products with ad-valorem tariffs grew from 46 under the Alves Branco Tariff of 1844 to 114 in the 1910 tariffs revision. The maximum tariff rose from 60% to 100% and by the early 1920s the average import tariff was already around 30-35%. Although these were still far from the levels reached after the 1957 reform,

which led to tariffs that averaged more than 60% in the 1960s, and while they were not deliberately targeted towards import substitution, there was a gradually increasing process of protectionism (Silva, 2008, p. 7)

The growing importance of the industrial elites in policymaking was also a major part of the 1930s political shift in Brazil, when Vargas first ascended to power based on the support of the new classes, gradually reducing the attention paid by the government to the old agricultural elites. In that context, the expectation would have been an even faster increase in the use of tariffs for more deliberate import substitution policies. Nonetheless, the use of tariffs paradoxically declined as a policy instrument for protection until the 1957 reform.

Despite the greater prominence of the industrial classes, tariffs continued to be used for fiscal purposes in the 1930s. During the term of Oswaldo Aranha as Finance Minister, the 1934 tariff legislation reduced to just seven the number of products under ad-valorem taxes and fixed specific tariffs for all others goods, which did not undergo modifications until 1957. Aranha's plan had no link to import substitution or industrialization because, as in previous periods of Brazilian economic history, it was purely based on fiscal needs (Silva, 2008, p. 8). With the impact of the Great Depression and the increase in social spending proposed by Vargas, ad valorem revenues were falling with the deflation of prices in global markets, which was particularly acute for Brazil because tariffs on imported goods represented 40% of government revenues (Silva, 2008, p. 9). By fixing specific nominal tariffs, Aranha tried to preserve the revenues from the main source of taxation. This is shown in Figures 3.6, which present the long decline in import prices during the 1920s and early 1930s.

Figure 3.5 - Import Prices, 1910-1961 (1910=100)

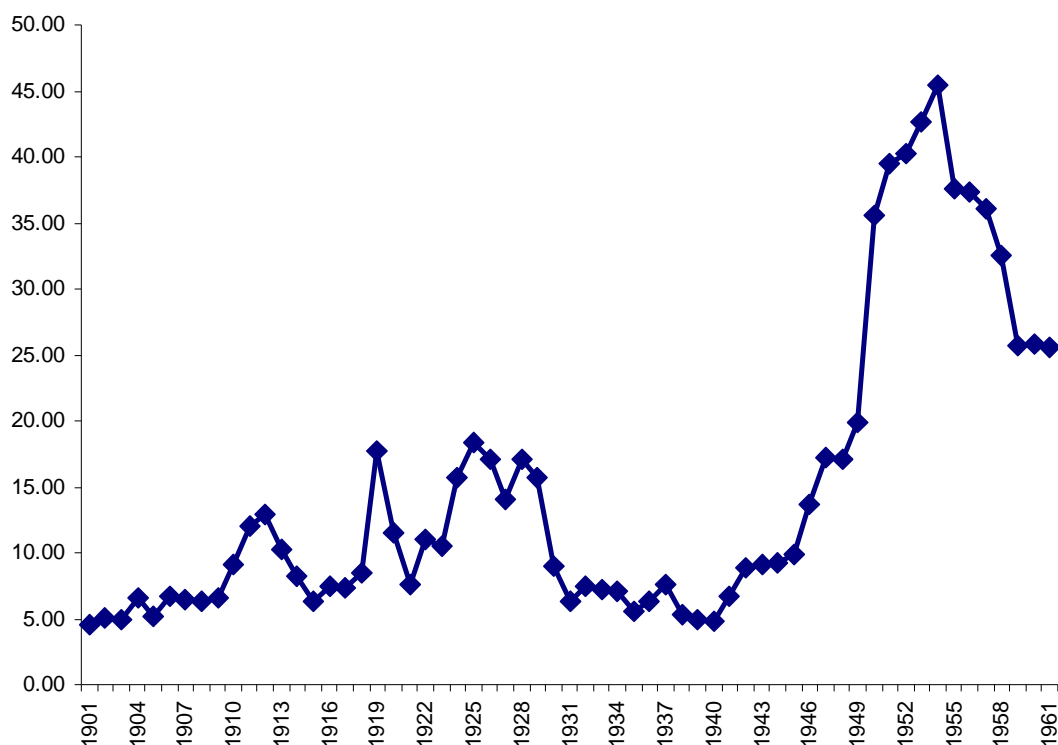


Source: Own construction from Abreu (1990, p. 410). Original data from FGV's *Revista Conjuntura Economica*.

Figure 3.5 shows that from 1920 to 1934, import prices fell drastically by 55%. As a consequence, there was a deterioration in Brazil's public finances: between 1928 and 1934, fiscal revenues from tariffs declined by 8.2 percentage points of total revenues, from a share of 42.4% to only 33.8% (IBGE, 2017). By fixing specific tariffs, the 1934 reform therefore sought to hedge against this process. But with an average inflation of 8.9% between 1934 and the end of the war (IBGE, 2017), specific nominal tariffs rapidly fell behind the nominal price of imports, reducing the effective rate of protection. Until the war, this decline in tariff protection was increasingly compensated for by the rise of other non-tariffs forms of protection, mostly quotas or quantitative restrictions. But these were also quickly reversed during the war as the fear of a shortage of imports led officials to maintain very low restrictions on trade. Although the value of 'free on board' (FOB) imports grew by 47% between 1939 and 1945, from

US\$218 million to US\$323 million, rise in transportation costs meant that the quantum of imports declined by 11.4%, given the strong restrictions to global trade (IBGE, 2017).

Figure 3.6 - Coffee Export Prices, 1901-1961 (1995=100)

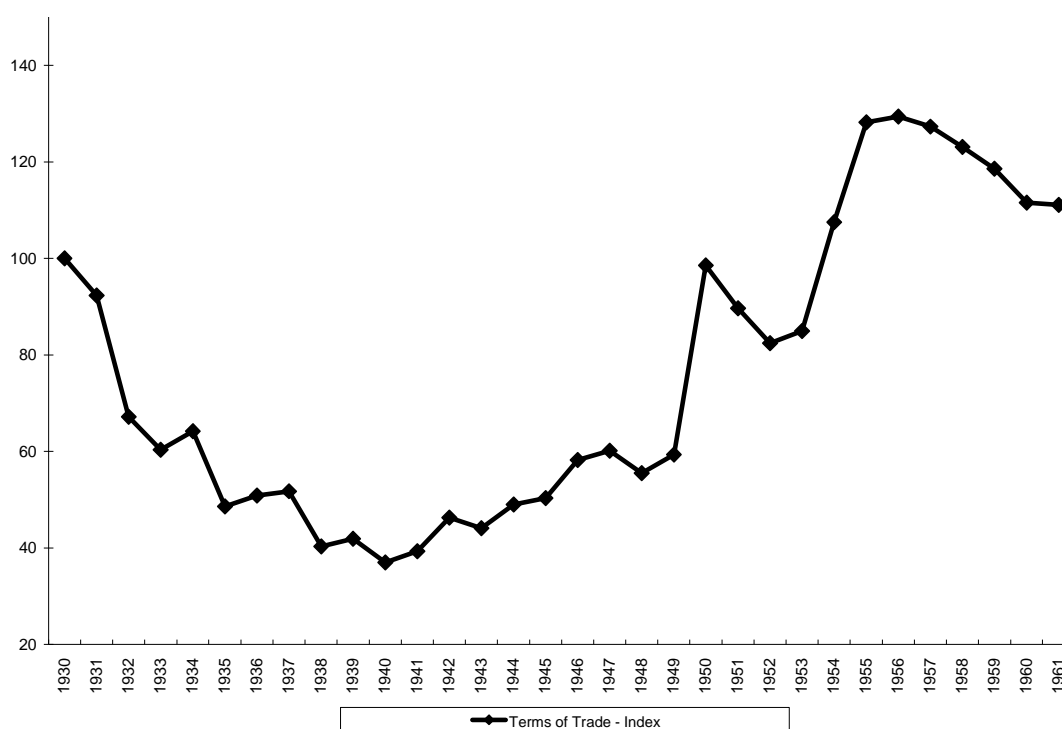


Source: Compiled by IBGE (2017). Original data comes from the Instituto Brasileiro de Café and the IMF's International Financial Statistics (IFS).

On the other hand, exports receipts increased substantially in the same period. Figure 3.6 shows an important recovery of coffee prices during the Second World War. Export prices of coffee increased by 102% between 1939 and 1945. Abreu (2004) shows that Brazil, as a commodity producer, benefited significantly from the Second World War, managing to increase foreign receipts due to the demand for agricultural products. Most Latin American countries

were in a similar situation and ended the war with high foreign exchange reserves (Abreu, 2004, p. 15).

Figure 3.7 - Terms of Trade, 1930-1961 (1930=100)



Source: Data compiled by Abreu (1990, p. 410). Original data from FGV, *Revista Conjuntura Economica*.

This improvement can also be observed in the terms of trade, shown in Figure 3.7. Following the rise of coffee export prices, the terms of trade increased by 44% between 1939 and 1946. The positive balance of payments position that resulted prevented changes to the import tariffs system in the immediate post-war period, further reducing the effective rate of protection of the nominal tariffs. Malan et al (1977, p. 165) show, however, that while the restrictions on imports and the improvement in terms of trade supported Brazil's balance of payments during the war, preventing authorities from changing the tariff structure, most of the foreign exchange reserves accumulated during this period were actually in inconvertible currencies. Of the US\$700 million that

Brazil recorded as international reserves in the immediate post-war period only about US\$92 million were truly convertible. This became a severe restriction on the balance of payments between 1947 and 1949 because the boom in imports and the lack of import restrictions resulted in a significant balance of payments deficit, and there were not enough reserves to cover the gap.

The overall result of the 1934 tariffs law was that the average tariff rate, which was around 35% ad valorem by the late 1920s, fell to less than 30% by 1939, and around 10% between 1943 and 1950 (Silva, 2008, p. 7). During both the Dutra administration (1947-1951) and Vargas' second mandate (1951-1954), the effective tariff rate remained below 10%, with most revenues collected from small ad valorem taxes limited to the 5% charged by state ports as entrance fees. These were originally designed to be an additional source of revenue only for states, but ended up becoming the sole source of tariff protection with almost all goods paying specific tariffs that had become low in real terms (Lago, 1982). Table 3.2 shows the ad valorem equivalent of specific tariffs for some specific products between 1933 and 1945.

Table 3.3 - Ad Valorem Equivalent of Specific Tariffs on Selected Products, 1933-1945 (%)

	1933	1939	1945
Cement	77.8	54	19.9
Iron	39.1	26	17.8
Rails	29.7	13.5	9.7
Tires	71.6	61.1	-
Motor Cars	48.3	41.9	-
Coal	24.7	15.3	6.9
Wheat	16.2	22.4	7.3
Wines	67.5	20.3	19.7
Cotton Yarn	50.6	24.2	8.6
Weighted Total	36.1	29.2	10.4

Source: Reproduced from Abreu (2004, p. 32).

Table 3.3 shows the major decline of protection with fixed specific tariffs losing traction to inflation during the period 1933 to 1945. This can be seen in a variety of sectors, making the weighted total protection close to 10% by 1945, which then fell to below 5% by the mid-1950s, providing little protection at all (Silva, 2008, p. 11). It is important to highlight, however, that during the war the low rate of protection from tariffs and the rise in export prices did not prevent industrialization from continuing. As shown in Section 3.2, by the end of the 1940s the substitution of almost all consumer industrial goods was completed in Brazil despite the lack of protectionism. The restrictions to global trade and the shortage of global manufacturing production to be imported by Brazil, as shown by the decline in import volumes, became a natural form of protection, stimulating the substitution of imports of non-durable goods (Versiani and Barros, 1977, p. 313)

By the end of the war, the administration of Eurico Gaspar Dutra opted for a liberal approach that did not change this situation of low tariffs. The decision reflected the belief that Brazil would be a major recipient of FDI after the war and also that the country had accumulated enough reserves to cover a transitory balance of payments deficit (Malan et al, 1977). Both views proved to be wrong and the country faced large balance of payments problems until 1953, when the MER was adopted. The discussion of the return to tariffs started exactly during this period, during the second mandate of Getulio Vargas between 1951 and 1954. The debate about a new tariffs system grew and industrialists based in Sao Paulo demanded a shift toward more differentiation and ad valorem tariff protection, in an effort to both protect the wartime industrial growth, but mostly to stimulate import substitution in advanced industries (Colistete, 2006, p. 6). This did not, however, result in policy action

until 1957, and even this return to tariffs as a source of protectionism will be questioned. Although it was claimed by the Kubitschek administration as another step toward the import substitution of modern industries, this dissertation presents new evidence that suggests it was mostly targeted at generating revenues and slowly dismantling the MER regime that had been in place between 1953 and 1957. This will be the main theme of Chapter 8.

3.5 Chapter Conclusions

This chapter has discussed the economic history of Brazil's impressive industrial performance in the 1950s, the historiographical interpretation of that period based on the ISI consensus, and debates about the broader role of the government in the process of industrialization and the long-term history of tariffs in Brazil. The chapter has two important findings that place Brazil's MER experience in perspective.

First, the impressive industrial growth and the shift from traditional to advanced industries in the 1950s. This was the main transformation that took place in the Brazilian economy during this period.

Second, the explanation of this process is largely based on the ISI model, which sees the industrial process as the result of a set of ideas and policies designed to replace imports by local manufacturing. This consensus sees government planning and execution as central in this process, and gives an important emphasis to protectionist instruments such as tariffs and exchange rates to achieve the industrial goals.

The importance of these traditional instruments is analyzed in this dissertation. The history of tariffs presented in this chapter shows that they had only a

minor use during the post-war period, while the role of exchange rates will be tested in Chapter 7. Overall, it will be argued that other government policies were much more important for industrial growth than these protectionist instruments.

The industrial history of the 1950s as well as its interpretations provided in this chapter is also the necessary context to understand the evolution of Sumoc, the monetary authority responsible for macroeconomic policy at that time, and the sequence of macroeconomic policies that it applied. These are the topics of the next chapters.

4. Politics, Institutions and Exchange Rate Management Pre-MER

Chapters 2 and 3 placed the MER experiment within the larger context of exchange controls and Bretton Woods, as well as Brazil's industrialization in the 1950s. They provided the historiographical and historical context to understand this dissertation's contributions to the literature. This chapter provides a review of the political history of post-war Brazil, the history of the institutions and actors responsible for exchange rate management in the post-war period, and the chronological historical experience of exchange rate policies from immediately after the Second World War until just before the adoption of the MER in 1952, including the earlier attempts to solve the balance of payments problems. The chapter will show that Sumoc, the institution responsible for economic policy, was an 'arena' for debates about macroeconomic policy between two different schools of economic thought and served the interests of the leader in power at each time. It will also show the ineffectiveness of the import licensing regime and the free market for the exchange rate, predecessors of the MER system, to adjust the balance of payments problems of the country.

4.1 The Politics of Vargas and Kubistcheck

This section presents a short chronological revision of the political history of Brazil in the 1950s, which is the background context for the analysis of macroeconomic policymaking provided in the rest of the dissertation.

The division of social classes discussed in Section 3.3 provides the background for understanding the politics of 1950s Brazil. There were essentially two important political groups in Brazil's incipient democracy: one that represented

the interests of the traditional elite, mostly agricultural exporters but also importers of manufactured goods and part of the military; and the other representing the emerging urban industrial and labor classes in society. The traditional elite was represented by the political party UDN (União Democrática Nacional), which had been created in 1945 after the end of the Vargas dictatorship, with a strong conservative stance in opposition to Vargas' pro-industry and labor positions. The industrial and urban classes were represented by the PTB (Partido Trabalhista Brasileiro), which was created by Vargas himself in an effort to gain the support of the urban classes (Figueiredo, 2012, p. 167). Alongside the PTB was the PSD (Partido Social Democrático), also a pro-urban and labor party, but with a more centrist approach than the PTB. The PSD's main leader was Juscelino Kubitschek, and the party was not created by Vargas; rather, it was encouraged by him as another vehicle for increasing the influence of his industrial and urban ideas (Vianna & Villela, 2005, p. 28). There were also a variety of other smaller parties that were generally aligned with the UDN or the PTB/PSD, with the most important being the PSP (Partido Social Progressista), the PR (Partido Republicano), and the PDC (Partido Democrata Cristão) (Lyne, 2015, p. 77).

Vargas won the 1950 election with 48.7% of the votes, against 29.7% for Eduardo Gomes, a general from the UDN, and 21.5% for Cristiano Machado, the PSD candidate (Vianna & Villela, 2005, p. 29). Vargas' campaign was based on winning the urban and industrial electorate, defending pro-industrialization policies, and implementing labor protection laws. Even though Vargas had sympathy from parts of the traditional elite that had supported him during his dictatorship between 1937 and 1945, the UDN maintained a strong opposition to his mandate. The PSD supported Vargas and was part of his coalition, giving

him a majority in congress (57% of seats), although this was not a very large coalition and his own party, the PTB, had only 15.6% of congressional seats (Figueiredo, 2012, p. 165).

Vargas tried to attract the support of the UDN, so at first chose a very conservative cabinet, but he was not successful and most of the party remained strongly opposed to his government. This resulted in a weak coalition during his mandate and a highly polarized political arena (Hilton, 1975; Leopoldi, 2000). Vargas' effort to conquer the UDN while having won with support from PTB and PSD fits Lyne (2015)'s framework of a model of political bargaining in which the limited representation of the electorate (only 15% of the population voted) meant politicians were more inclined to look for support from the main political groups in society, rather than following a policy direction that purely reflected their voting base.

Vargas was not particularly successful in bringing the UDN to his side and spent most of his mandate trying to balance these forces but without being able to build a consensus regarding the direction of economic policy. His economic policies, as the rest of the chapter will show, fluctuated between the 'old' conservative liberal policies, which Skidmore (1982, p. 125) calls 'orthodox', and the 'new' industry and labor-oriented policies. The president's mandate was quite unstable. For the old classes, who feared losing their status and incomes, economic nationalism was a bad strategy. On the other hand, 'the middle class had an instinctive attraction to the economic nationalism doctrines' (Skidmore, 1982, p. 143), given that they would benefit from the increase in the country's economic autonomy due to the creation of jobs and social protection. This division was also reflected in the military, which was split over supporting Vargas. The lower ranks adopted an anti-Vargas stance,

close to the UDN party, but the most prominent figures in the military class, such as Góes Monteiro, still supported Vargas' mandate (Baer, 1995, p. 72). Sumoc, the institution responsible for macroeconomic management, was the arena where this battle between liberal and developmentalist ideas took place.

There are many examples of how this difficult political environment resulted in hard policy choices during the Vargas years. One example was the creation of Petrobras, the country's oil producing company in 1954. At first, Vargas planned Petrobras as a project of mixed capital – the government being the majority shareholder – with the monopoly of oil extraction and refining. However, throughout the process the Brazilian Communist Party (PCB) adopted a strong stand of national radicalism, focusing their propaganda against international oil companies and the subjugation of the Brazilian economy. In order to keep their support in the coalition, the administration changed the project to a more nationalistic option, but this resulted in losing part of the UDN's support for the new company (Skidmore, 1982, p. 131).

Vargas's administration remained turbulent throughout his mandate, with the UDN opposition getting more aggressive over time, while Vargas' nationalistic rhetoric also intensified. After numerous fights with the UDN about a number of issues, mostly relating to economic policy choices like the creation of Petrobras, the crisis reached its peak in 1954. Social tensions were high and Vargas' rhetoric, particularly his sympathy with the unions, made the UDN consider alternatives to remove him from office (Skidmore, 1982, p. 146). In March 1954, Aliomar Baleeiro, one of the most extreme members of the UDN called for a military coup to remove Vargas from office (Vianna & Villela, 2005, p. 38). In August, an attack on conservative journalist Carlos Lacerda led to the final act of his government. Vargas and his supporters were accused of the

attack and before being removed from office by the military, Vargas shot himself.

While his rhetoric and the contents of his suicide note could give the impression that it was the radicalization of his developmentalist rhetoric that resulted in the end of his government, it was actually his 'middle way' between orthodoxy and the new politics that was unable to balance the different political forces in the country, leading to radicalization on both sides (Skidmore, 1982, p.180). Vargas ended up being an isolated politician who could not find a way to balance the diverse political forces of his time, which ended up costing him dearly (Vianna & Villela, 2005, p. 39).

The transition to Kubitschek's government reflects how he was able to build a much more stable and pro-development policy framework. The period under João Café Filho (1954-1955), who was Vargas' vice president and became interim president until the next elections, was marked by ideological conflict. After the 1955 elections, a crisis emerged between the voters who supported the result of the new elections, which was won by Kubitschek, and the conservatives from the UDN, which again lost the elections and were against Kubitschek taking office because of the presence of João Goulart, Kubitschek's communist vice president, who was seen a threat to the conservative UDN. Kubitschek's campaign and election, including the presence of Goulart, was mainly targeted at the expanding urban classes, with a strong national developmentalist rhetoric that was becoming central to Brazilian society, but was exactly what the UDN was trying to block. (Skidmore, 1982, p. 188; Bueno & Faro, 2004, p. 141)

Carlos Lacerda, the conservative journalist, was the main advocate in favor of a coup against the newly elected president, claiming Kubitschek was only supported by communists and was elected without reaching an absolute majority of votes: Kubitschek was elected with 36% of the votes, while Juarez Távora was the runner up with 30% (Figueiredo, 2012, p. 165). In support of the election result and against the coup was General Lott. As a nonpartisan public figure, he stood by the constitution to guarantee the military would endorse any candidate's victory. Lacerda, by contrast, began to engineer a coup in order to prevent Kubitschek and Goulart from assuming their offices. General Lott therefore called a 'preemptive coup' against the anti-Vargas followers to ensure that Kubitschek became president (Skidmore, 1982, p. 194).

Once in office, Kubitschek managed to build a much more stable political environment. Although his own party, the PSD, held only 35% of congressional seats, a coalition with the PTB and other smaller parties controlled 68%. Hence, while his personal result in the presidential race was not that large, his control over congress allowed him to deliver legislation. As will be shown, this included changes to the MER system, such as the new tariff law of 1957, which was strongly supported by his coalition and his political base of industrialists and urban classes (Figueiredo, 2012, p. 167).

This relative stability was also the result of the political balance that Kubitschek's administration was able to build, even after taking office in an extremely divided society and through the pre-emptive coup. Kubitschek managed to avoid direct conflicts with the UDN and found ways to meet everyone's needs, particularly through substantial changes in economic policy. His political and economic strategies gained him the support of industrialists, while he managed to keep the unions on side using Goulart as his intermediary

(Leopoldi, 2000). More importantly, he also managed to keep control over the traditional elite. The openness of trade to imports and the authorization of foreign investments was one of the features that helped to build support from these traditional groups. While he favored industrial policy, using the state to support a strong national development process, he was at the same time attracting foreign companies (Bueno & Faro, 2004). Politically, Kubitschek adopted a very moderate stance with regard to the UDN, backing off from confrontation, giving amnesty to the generals who had planned the coup against him, taking an anti-communist stance, and building a good relationship with the United States, the main source of foreign investment (Skidmore, 1982, p. 206). This was reflected in a very different set of policies compared to Vargas.

4.2 Sumoc: The 'Arena' of Macroeconomic Policy

This section focuses on the changes in the personnel and economic thinking of the two institutions behind policymaking during the post-war period: Sumoc and Banco do Brasil. Until 1946, Brazil did not have a Central Bank or an institution solely responsible for monetary and exchange rate policies. Banco do Brasil, which dates back to colonial times, when Portugal's King Dom Joao VI moved the crown to Brazil in 1808, was still responsible for managing money supply and exchange rate policies in the first half of the twentieth century. However, Banco do Brasil was primarily a commercial bank, with branches spread throughout the country and allowed to lend money and collect savings like any other bank. Banco do Brasil was not the banker of the other banks. It did not have instruments to properly function as a lender of last resort and lacked the capacity to control money supply, with an internal

endogenous process of printing money to generate liquidity for its own demand for lending (Lago, 1982, p. 13).

After the Bretton-Woods conference in 1944, an influential Brazilian economist called Otávio Gouvêia de Bulhões, head of economic studies in the Ministry of Finance since 1939 and one of the country's representatives in the conference and with close relations to the IMF in its early years, came back to Brazil convinced that the country needed to follow the best practices of international financial institutions, such as the IMF and the Federal Reserve system, which included the creation of an independent Central Bank to control monetary and exchange rate policies (de Pinho Barreiros, 2009, p. 516). Bulhões, as well as Eugênio Gudin, another important economist of that time, were influential academics of the liberal school of economic thought (Kuperman, 2012, p. 240). The group also included Alexandre Kafka, an Austrian trained economist who migrated to Brazil before the war and was one of Gudin's main advisors. According to Bulhões (1990, p. 47), the idea of creating an independent monetary institution dates to before the Bretton Woods conference and was already being discussed internally in the Ministry of Finance while he was the head of the economics studies department between 1939 and 1945. But the conference, and the changes expected to international capital flows that would emerge from it, made it essential (Bulhões, 1990, p. 46). Gudin and Bulhões were part of the liberal tradition of economic thinking in Brazil, which was connected to the traditional elites of Brazilian society. They saw control over monetary and exchange rate policies as key to guaranteeing a macroeconomic balance with low inflation and balance of payments stability (Kuperman, 2012, p. 155; Bielshowsky, 1996).

Before Vargas' return to power in 1951, which forced him to find a balance between the rising industrial and urban classes and the declining traditional elite, he had been strongly supported by the traditional elite and liberal economic thinkers during his previous period in power between 1930 and 1945. Indeed, it was exactly during the last part of his first presidency, as well as during the presidency of Eurico Gaspar Dutra from 1946 to 1951, that the liberal group around Bulhões and Gudin was most influential in setting macroeconomic policymaking and building Sumoc (Baer, 2009, p. 73). In fact, throughout the post-war period the executive bureaucracy of the different administrations always had a central role in determining economic policies, with the role of the legislature in setting macroeconomic policies almost inexistence (Schmitter, 1971). It was, however, the influence of the different economic schools over the distinct administrations that explains the shifts in policy (Leopoldi, 2000).

In 1945, at the end of Vargas' first presidency, the liberal group convinced Minister of Finance Sousa Costa and President Vargas to create the new institution Sumoc, which was the first step, while still incomplete, toward a future Central Bank (Lago, 1982, p. 14), but which became central to determining macroeconomic policies during the end of the 1940s and the 1950s. Sumoc had the normative power to determine exchange rate and monetary policies, as in a modern Central Bank, with its council responsible for establishing policy changes from 1946 to 1964. However, Sumoc was not yet a Central Bank because Banco do Brasil retained its role in implementing macroeconomic policies. The direct control over monetary and exchange rate policies was only transferred to Sumoc with the creation of the Central Bank in 1964, during the military dictatorship. Banco do Brasil, particularly its

exchange rate department, remained throughout the end of the 1940s and 1950s as the single operator of exchange rate policies, including the MER system created in 1953 (Lago, 1982, p. 16; Figueiredo Filho, 2005, p. 50).

The reason for this dual system, with one institution being the normative policymaker and the other with direct operational responsibility, resulted from the conflict to create Sumoc. Banco do Brasil was a powerful institution at that time, whose directors had, in practice, been responsible for economic policy since the bank was created. And while the President of Banco do Brasil and its directors were appointed by the Minister of Finance, the institution had a long history of forming its own staff and was extremely independent regarding policy decisions. More importantly, its mixed structure of being a commercial bank and a monetary authority made it difficult for it to control the money supply, even if the leadership of the bank sought to do so (Malan, 1974, p. 2).

Gudin, Bulhões main academic advisor, suggested an intermediate option between creating a new Central Bank and giving Sumoc just the normative control over policies. Gudín believed the only technical staff in Brazil who could support the creation of a Central Bank were inside Banco do Brasil, and Sumoc needed that expertise to become viable. In his view, the future Central Bank would be a natural evolution from the bank (Bulhões, 1990, p. 54). At the same time, the mixed structure was also designed to keep Banco do Brasil's important staff involved in policymaking decisions, both because of the need for their expertise and due to their historical importance (Lago, 1982, p. 16; Malan, 1974, p. 5). This intermediate solution gave Banco do Brasil an important role but transferred the authority over the main decisions to Sumoc, which would gradually develop into an independent Central Bank. The negotiation was conducted by Bulhões himself, who was at that time an

important policymaker as Secretary of Economic Research in the Ministry of Finance, working together with Vargas, the Finance Minister, and some of Banco do Brasil officials, particularly Jose Vieira Machado, who was the director of exchange rate policies at the bank (Lago, 1982, p. 17).

Sumoc's council, the most important committee of the new institution, was the apex of this mixed structure, with a large influence of Banco do Brasil officials. The council was composed of five people, all of them appointed by the government: the Minister of Finance; the President of Banco of Brasil; Sumoc's Executive Director, a new position created for the institution; and Banco do Brasil's directors of Exchange Rate and Monetary Policy. Of the five members, three were Banco do Brasil officials. Together they had the power to continue dictating policymaking inside the new institution, demonstrating the continuity of the old structure within the new arrangement (Figueiredo Filho, 2005, 51).

The first Sumoc Executive Director was José Vieira Machado, a liberal economist who was Banco do Brasil's head of the exchange rate department. It is important to stress that there was no homogenous economic thought representing the entire institution of Banco do Brasil. The bank's staff were influenced both by the liberal ideas of Bretton Woods, as they had been policymakers for a long time, but also by the emerging developmentalist thought. These different currents of economic thought shared, and fought, for the control of Sumoc during the whole decade. As will be shown below, which dominated changed according to the political preferences of the leader of the country. While Sumoc was designed to remove Banco do Brasil from the normative direction of macroeconomic policymaking, which was seen by the liberal group as a way to form an independent liberal institution, it did not

operate autonomously from the federal administration and the President appointed its members and determined its policy direction (Figueiredo Filho, 2005, p. 55).

Vieira Machado remained as Sumoc's executive director not only in its first years during the end of Vargas' Estado Novo but also through Dutra's presidency between 1946 and 1950. He ran Sumoc for six years in total and was responsible for building the institution's structure and moving it to the center stage of policymaking at that time. He was responsible, together with the three different Finance Ministers during Dutra's administration,¹² for the failed liberal experience of the first post-war administration, which will be discussed in detail below (Klein and Luna, 2014, p. 146). President Dutra, a general elected based on a liberal policy framework strongly supported by the traditional elites, focused his mandate on re-opening the economy and the exchange rate markets after the war (Figueiredo Filho, 2005, p. 60).

When Vargas returned to power in 1951, however, he was elected on a platform of promoting industrialization, and Sumoc changed somewhat to reflect this position (Bastos, 2011, p. 76), although its policies remained a reflection of Vargas' dual stance, as was discussed in Chapter 3. Vieira Machado left and the three Sumoc Executive Directors in charge during Vargas' new mandate, as well as the two Finance Ministers – Horacio Lafer and Osvaldo E. Souza Aranha – were ideologically very different from the liberal ideas of the initial leadership of Sumoc. They were all important developmentalist economists linked to CEPAL (Lago, 1982, p. 75). Lafer,

¹² Gastao Vidical (1946), Pedro Luiz Correa e Castro (1946-1949), and Manuel Guilherme da Silveira (1949-1951).

Vargas' first Finance Minister, for example, as well as his team composed of Roberto Campos, Romulo de Almeida, Glaycon Paiva, and others, were all exponents of nationalist developmentalism (Figueiredo Filho, 2005, p. 59).

Sumoc's policymaking gradually changed due to this new political environment. The decision to introduce the MER system in 1953 was not only a reaction to the worsening of the balance of payments in 1952, but also ideologically designed to support industrialization (Lago, 1982, p. 95). What is clear, however, is that the Sumoc leadership during this period followed a responsible policy framework on exchange rates and monetary policy. This resulted from the mixed approach that Vargas took to balance the influence of the traditional elite, which demanded control over inflation and balance of payments deficits, with the interests of his pro-industry base. This is what Skidmore (1982, p. 117) called the 'pragmatic adoption of economic liberalism'. At the same time, the framing of policies that could simultaneously target macroeconomic stabilization and support industrial take off was always part of the policymaking process, as is shown below by the design of the MER system (Figueiredo Filho, 2005, p. 182).

Between 1954 and 1955, after Vargas' suicide, which, as shown in the last section, resulted from the enormous pressures the President felt from the traditional elite, his Vice-President, Café Filho, took office for a short period of time and adopted a conservative stance to stabilize the country. He appointed Gudin as Finance Minister and Bulhões as Sumoc Executive Director, and this resulted in a short period when Sumoc was again ruled by the liberal policymakers who had created the institution back in 1945. Some of the other civil ministers were public figures with a conservative view and some of the military ministers had an anti-Vargas position (for example Eduardo Gomes as

Aviation Minister and Amorim Vale as Navy Minister) (Ioris & Ioris, 2013; Skidmore, 1982, p. 181).

But this did not last long, as the Kubitschek presidency once again turned Sumoc back to developmentalism. As shown in the last section, Kubitschek managed to produce a much more cohesive national development strategy, which was also reflected in his macroeconomic policies. From 1956 to 1961, Sumoc became a much less influential body for policymaking and the discussions and formulation of macroeconomic policies started to come straight from the top, directly from the Finance Ministry and the cabinet (Malan, 1974, p. 5). Sumoc was ruled by seven different executive directors, compared to just three under Vargas. All were developmentalist economists linked to the Minister of Finance or coming straight from Banco do Brasil. None of them seem to have had any relevant outside career and almost no influence over policy decisions. The three Finance Ministers from that administration – Jose Maria Alkmin, Lucas Lopes, and Sebastião Paes de Almeida – were the central decision makers under Kubitschek. During this period Sumoc just reflected broader choices made by the president and his cabinet, as will be shown in Chapter 8. The influence of the orthodox and more macroeconomically responsible group was basically inexistent during this time.

This reduction of Sumoc's relative importance in economic policy also explains why, as Lago (1982, p. 140) suggests, the project for gradually transforming the institution into a proper Central Bank took so long to materialize. Gudin's initial plan back in 1945 was to create a mixed institution that would gradually gain power to finally be able to control monetary policy, not only from a normative stance, but also operationally. During the Vargas period, and under Vieira Machado's leadership, Sumoc grew with new departments and a

structure that was becoming ready for the next step of becoming a Central Bank, although it was not independent from the politics of Vargas, as already discussed. The period under Café Filho was very short and politically unstable, so Gudin could not bring back the debate about upgrading the institution to a proper Central Bank. And finally the shift to Kubitschek further limited any progress on this front. The administration had no interest in an independent Central Bank, concentrated policymaking around the president and the Ministry of Finance, and made Sumoc a less significant participant. The plan for a Central Bank only returned to centre stage in 1964, during the military dictatorship, which had a conservative stance on economic policy and brought the group of liberal economists back to power (Skidmore, 1982, p. 355).

Many economic historians have tried to separate and categorize these two different groups of policymakers who influenced Sumoc and economic thinking more broadly. Lago (1982, p. 5) argued that it is possible to call the original founders of Sumoc around Bulhões the '*Sumoquean*' group, compared to the '*desenvolvimentistas*' linked to CEPAL and industrialization. Kuperman (2012) and Bielschowsky (1996) suggest that this ongoing dispute over economic policy was also a representation of the broader economic debate in Brazilian society during that time,. The developmentalist group was a strong source of economic policy advice during the 1950s and 1960s, with major influence from Raul Prebisch, Celso Furtado and CEPAL in general.¹³ On the other hand, Bulhões and Gudin were from a group much more linked to ideas associated

¹³ See Bielschowsky (1996) for more on the ideological debates of the 1950s. Colistete (2001) also provides a comprehensive review of the Cepal ideas.

with Bretton Woods and the IMF. They were economists with foreign training who opposed most of the policy prescriptions of the 'developmentalists'.

Leopoldi (2000) provides evidence of how Sumoc was in the middle of a broader dispute in Brazilian society between the 'old' elites and the 'new' industrial groups. She argues that the industrial sector was growing in terms of organization and political voice during this period, particularly through the Federação das Indústrias do Estado de São Paulo (FIESP), the federation of industries of the state of São Paulo (see Colistete, 2004). This group played an important role in analyzing and suggesting policies to Sumoc, particularly during the periods when the institution was ruled by economists of the 'developmentalist' group, such as during the Kubitschek administration.

This history of Sumoc suggests that while the institution was created following liberal ideas, it became an 'arena' for macroeconomic policy between two different schools of economic thought and served the interests of the leader in power at each time: from Vargas' balanced approach to the full orthodoxy of Café Filho to Kubitschek's preference for the developmentalist school. This back and forth process happened a few times during the twenty years of Sumoc's existence and reflected the broader conflict in Brazil's political economy. The next sub-section will detail the exchange rates policies that resulted from this volatile history.

4.3 1947-1953: From Fixed Exchange Rates to Balance of Payments Crisis

During the presidency of Eurico Gaspar Dutra (1946-1950) the experiment of opening the economy and exchange rate markets resulted in a severe balance of payments crisis in the early 1950s (Klein & Luna, 2014, p. 153; Baer, 2009, p. 75),

which forced the Vargas government to opt for alternative policy solutions, such as the MER system, which will be presented in the next chapter.

During President's Dutra term, Sumoc can be characterized, as discussed in the last sub-section, as an institution with liberal ideas closely influenced by the IMF and the Bretton Woods policy guidelines. Its main policymakers were from the Sumoquean group, such as Bulhões and Vieira Machado, who thought a new era for Brazil was starting and the country needed to open its economy to benefit from the recovery in international trade and capital flows (Lago, 1982, pp. 6-7). An ex-military general, Dutra was a conservative politician who represented a conservative political base and the liberal ideas of the 'old' elites in Brazil (Bielschowsky, 1996).

In this context, Sumoc developed a framework of policies targeted at inserting Brazil into the 'new global era', and its first two decisions at the beginning of Dutra's mandate were the opening of the foreign exchange market to the private sector and fixing the exchange rate at Cr\$18.7 per dollar, the same nominal parity as in 1939. This decision ended the wartime centralization of foreign exchange transactions in Banco do Brasil, allowing private banks to freely transact foreign exchange using the fixed exchange rate (Lago, 1982, p. 57).

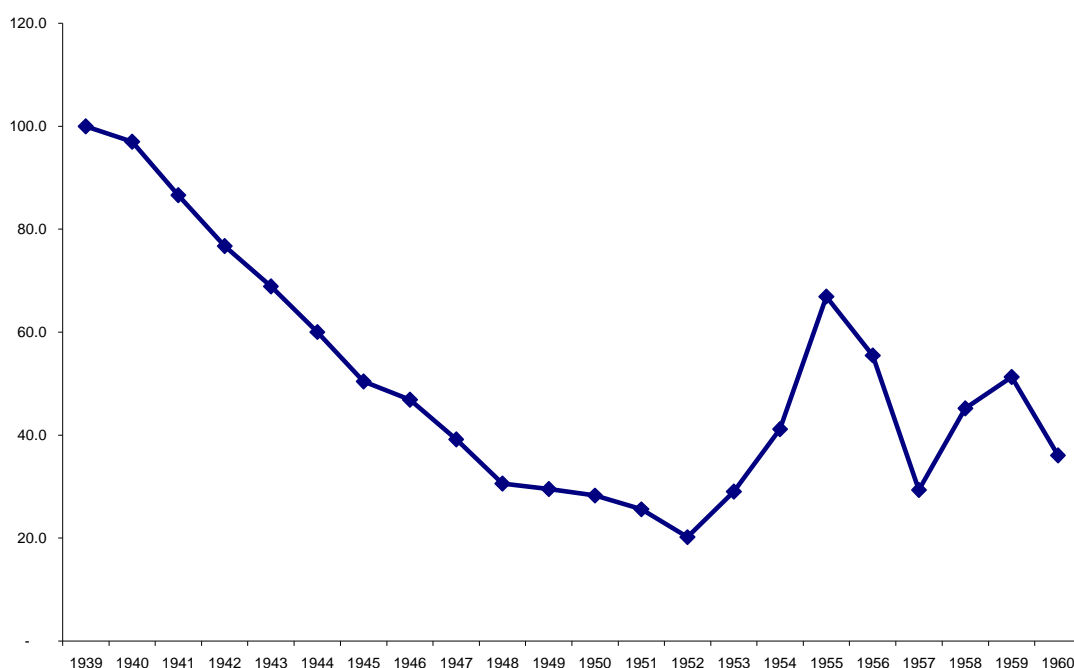
The decision to fix the currency at the same pre-war level was controversial internally at Sumoc, since the board knew it was fixing the exchange rate at an overvalued level, given that inflation was running above 20% annually (Kuperman, 2012, p. 145). The decision is mostly explained by the fear of an even faster inflationary rise in case of a weaker exchange rate. According to Bulhões, who participated in this debate inside Sumoc and was in favor of

fixing the exchange rate at the Cr\$18.7 rate, this was their best option even though it was overvalued both because of high inflation, which was the result of various wartime supply restrictions, but also because the country needed to quickly report an official rate to the IMF (Bulhões, 1990, p. 50). Bergsman (1970, p. 28) adds that the pressure to make imports more flexible, as they had been restricted during the war, also strongly counted in favor of a stronger exchange rate. Sumoc feared that the combination of greatly increased imports at higher prices could result in higher inflation. Although the minutes of Sumoc's meeting describe this technical debate (Sumoc Minutes 66, 16/12/1946), the conservative nature of Dutra's government, which had traditional importers as a core group of supporters, also reinforced Sumoc's decisions (Bergsman, 1970, p. 28). This combination of a strong currency and an open market for the exchange rate was a very liberal mix of policies, which reflected Sumoc's first leadership's belief that this would attract foreign investments (Lago, 1982, p. 58).

But the overvaluation of the exchange rate would soon bring balance of payments problems. During the period of 1939 to 1945, prices had risen by about 100%, yet in 1947 the currency was fixed at the same nominal level as 1939. In 1953, when the currency finally devalued with the introduction of the MER system, the accumulated inflation was above 150% (IBGE, 1945). Figure 4.1 shows the evolution of the real exchange rate during this period. It was calculated with a reference year of 1939 and using the weighted average of the quantities auctioned at the various categories of MER regime and the exchanges rates of each category between 1953 and 1960. It is clearly possible to see how, between 1939 and 1952, just before the MER regime started, the official rate was five times stronger in real terms than its initial level and this

resulted in a strong deterioration of the balance of payments, as will be shown below.

Figure 4.1 – Real Exchange Rate, 1939-1960 (Cr\$ per US\$, 1939=100)



Source: Own construction with primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil, inflation from IBGE (2017). See Appendix 4 for the methodology.

Although officials acknowledged the overvaluation (Sumoc Minutes 77, 3/6/1947), they did not fear a balance of payments crisis because they believed that Brazil was poised to be an important recipient of foreign direct investment (FDI) (Vianna & Villela, 2005, p. 23). This would allow the balance of payments to remain under control, while at the same time increasing the overall level of foreign exchange inflows and making imports more flexible. This strategy was exactly the IMF policy guidance at the time, with the opening of the exchange rate market combined with a fixed exchange rate seen as the textbook way to stimulate trade (IMF, 1947, pp. 39-40).

At the same time, Brazilian authorities thought that they had quite a comfortable level of international reserves, with about US\$700 million dollars accumulated during the war, or about 3.5% of GDP, and a positive surplus in the balance of payments of about US\$61 million in 1945 (IBGE, 1945). International reserves were accumulated during the war due to the rise in commodity prices (coffee export prices increased by about 102% between 1939 and 1944), an increase in manufacturing exports of traditional industries to allies, and the restrictions imposed on imports (Abreu, 2004, p. 405). This buffer was seen as a protection in case short-run balance of payments deficits resulted from the strategy of re-opening the economy and allowing imports to rise in the first few years after the war (Vianna & Villela, 2005, p. 23).

It is important to stress that the capital account was almost fully closed during the war and only slightly opened during Dutra's administration, as in most economies during the Bretton Woods era. FDI inflows were welcomed, but other types of financial and portfolio flows were almost inexistent at that time and highly restricted by capital controls. As discussed in Chapter 2, controlling capital flows was an essential part of the Bretton Woods regime because the Impossible Trillema made it the only way to keep exchange rates pegged, as required by the IMF, while also maintaining an independent monetary policy. This meant that FDI was the only relevant international flow for the capital account, and in case it was insufficient to finance the deficits of the current account, it forced a reduction in the current account deficit or a sale of international reserves.

Due to the opening of the economy and the highly overvalued exchange rate, imports rose rapidly. But the level of FDI did not follow this movement and there were almost no inflows on the capital account during the first post-war

years, with Brazil not being a major destination of international flows. FDI averaged only US\$13 million between 1947 and 1951, while imports rose on average by US\$120 million during the same years (IBGE, 1945-1951). Banco do Brasil was quickly forced to sell its international reserves, which declined by US\$100 million between 1947 and 1951, to cover the rising deficit in foreign accounts (IBGE, 1945-1951). To make things worse, international reserves were in practice much smaller than the US\$700 million that Sumoc had reported in its books in 1947. From those, only about US\$92 million were in truly convertible currencies by the end of 1946 and US\$33 million by the end of 1947, as Table 4.1 below shows. Until the late 1950s, the Bretton Woods arrangement did not build a fully convertible currency system and countries needed to have bilateral payment agreements (Magud et al, 2011).

This phenomenon later became known in the Brazilian literature as the 'illusion of foreign exchange', since Sumoc authorities thought they had a good level of international reserves but in reality most of those funds could not be used to pay for the rising current account deficit (Baer, 2009, p. 75). Table 4.1 shows the net foreign exchange position in convertible currencies and Figure 4.2 shows the evolution of the current account, FDI, the balance of payments, and the changes in international reserves for the whole period from 1946 to 1961.

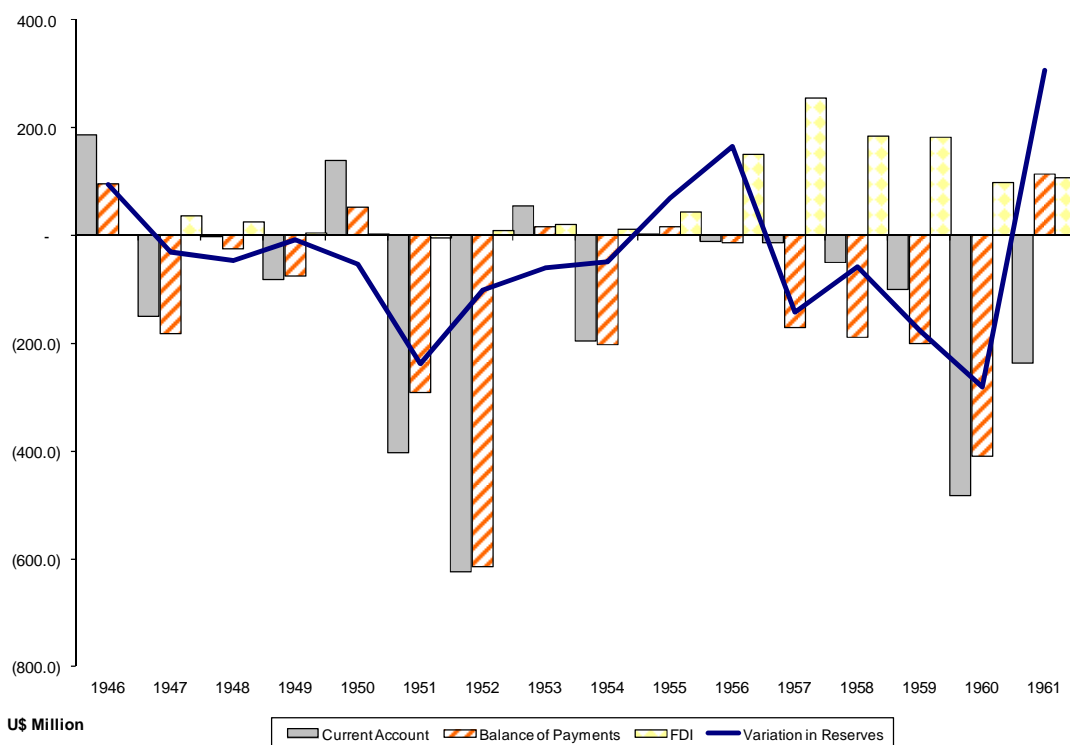
Table 4.1 - Net Foreign Exchange Position in Convertible Currencies, 1946-

1952 (US\$ Million)

1946	92
1947	33
1948	62
1949	121
1950	128
1951	-30
1952	-24

Source: Reproduced from Malan et al (1977, p. 165).

Figure 4.2 – Balance of Payments, 1946-1961 (US\$ million)



Source: Own construction from IBGE's *Anuários Estatísticos* (1946-1961)

In 1947, the second year of Dutra's mandate, increased imports of goods and services of US\$800 million in 1946 and 1947 (IBGE, 1946-1947) resulted in a current account deficit of US\$200 million, pushing the country towards a balance of payments crisis. In 1947, inflows in the capital account amounted

to only \$ 12 million, which was far from enough to compensate for the large current account deficit (IBGE, 1947). The root of the problem was not the lack of convertible reserves, even though they were much smaller than the official overall level of international reserves and critical for a quick collapse in 1947, but the structural increase in balance of payments deficits. Even if Brazil could use all of its official reserves, over time they would not have been enough to contain the rising balance of payments deficit, which was already US\$200 million. The trade and services balance deteriorated from a surplus of US\$255 million in 1945 to a deficit of US\$127 million in 1947, with exports rising by US\$500 million while imports increased by US\$885 million (IBGE, 1945-1947). International coffee prices rose during this period by 74% (Figure 3.1), increasing export receipts, but the rise in imports was significantly faster. The problem was that Brazil was incapable of stabilizing its balance of payments with the strong pre-war exchange rate, the high demand for imports in the post-war period, the openness of the foreign exchange market, and no FDI inflows. The positive export performance was not enough to stabilize the growing current account deficit.

Dutra and Sumoc were forced to react. The solution was to introduce quantitative restrictions on imports through the concession of licenses by Banco do Brasil (Baer, 2004, p. 75). At the same time, Sumoc re-centralized foreign exchange operations, forcing all transactions to go through Banco do Brasil first, and only then allowing other commercial private banks to operate in the market in case there was any surplus of foreign exchange (Sumoc Instruction 25, 3/6/1947). By the end of 1947 Banco do Brasil quickly returned to being the major currency operator, accounting for around 70-80% of all foreign exchange transactions (Klein & Luna, 2015, p. 154)

The choice of an import licensing system rather than a devaluation of the official exchange rate was based on the theory that a devaluation of the exchange rate would not boost exports because coffee production was inelastic to relative price changes (Lago, 1982, p. 49). At the same time, there was also the fear that high inflation would return. One of the few achievements of those first years of Dutra's government was to bring inflation down from 16.5% in 1945 to 7% in 1946 (IBGE 1945-1946), thanks to the combination of the strong currency and the openness of markets. By restricting imports, officials were essentially assuming that there was no other way to improve inflows – both from exports or capital account flows – and the only option was to reduce outflows by containing imports.

The import licensing regime was authorized by Sumoc and administered by Banco do Brasil. One of the bank's departments was responsible for analyzing all requests and deciding whether to give import licenses, depending on the priority and importance of each product and sector. There was no clear methodology for this process. The decisions were discretionary and based on the 'rule of tradition', according to which the historical level of imports was used to determine whether a company or sector could import. In theory, this system was supposed to provide a ceiling to the overall level of imports, with the 'rule of tradition' allowing companies and sectors to maintain their *status quo* of imports, while restricting the increase of new imports much beyond existing levels.

Huddle (1964, 1967) provides an interesting theoretical analysis of this system, which preceded the MER auction system. He is one of only two authors who have analyzed the MER experience of the 1950s from an effectiveness perspective, the other being Alexander Kafka. They both offer a more

theoretical rather than empirical evaluation of the MER system and were written during or just after the experience of the 1950s. They offer the contemporary scholarly view of the MER experience.

Huddle explains that in the 1950s the contemporary view of the MER system was that the adjustment of the balance of payments would have to take place by selecting imports and not by depreciating the exchange rate because of the inelasticity of coffee exports to international prices, which he claims was a general belief among Brazilian policymakers and meant that they believed a devaluation of the exchange rate would not result in rising exports. In fact, they believed it would only result in higher inflation from the weaker currency. As a result, they tended to initially favor controls to adjust the balance of payments through the level of imports rather than depreciating exchange rates. Huddle also argues that policymakers defended the selective import licensing system as a way to stimulate imports of capital goods and induce industrialization, following the classic ISI model. Huddle links this policy advice to Celso Furtado, a prominent Brazilian economist in that period who was closely linked to CEPAL school of economics.¹⁴

Nevertheless, by analyzing descriptive data on the composition of imports and exports for that short period between 1947 and 1951, Huddle concludes that the protection of capital goods claimed by policymakers did not actually happen, and also did not result in more investment for the economy. Quantum and price indexes for selected exports prove that there was a more competitive international market for coffee exports than officials thought, and a depreciated exchange rate would probably have helped to increase coffee exports. His

¹⁴ For more on his theoretical work and policy advice, see Furtado (1959).

explanation for why the selective import system did not work to stimulate capital imports and did not promote industrialization was the existence of a huge black market for foreign exchange during 1947-1952, and the 'rule of tradition', which regulated the import licensing system. This rule determined that the amount of imports that policymakers authorized to each sector depended on its 'tradition', meaning the past level of imports and the importance of the sector to the economy. This system basically allowed existing sectors to import without any changes to the overall import composition.

In a second study for the same pre-MER period, Huddle (1968) estimated the black market exchange rate that resulted from the import licensing system. He calls it only a 'guesstimate' and uses price distortions to adjust the nominal exchange rate and calculate the black market rate. His estimate looks quite impressive at around Cr\$ 36 cruzeiros per dollar, which was double the official rate, while he suggests that bribes for officials to sell foreign exchange represented about 30-40% of the black market rate (Huddle, 1968, p. 116). Essentially, Huddle believed that the black market was composed of the bribe component, since authorities were in practice selling foreign exchange at a more expensive price, and a liquidity component, which was the mismatch of supply and demand in the market. Huddle claims the import licensing system was inefficient, with loopholes allowing imports to flow through the black market. This resulted in a major balance of payments crisis in 1952, which forced the government to move to the more restrictive MER system (Lago, 1982).

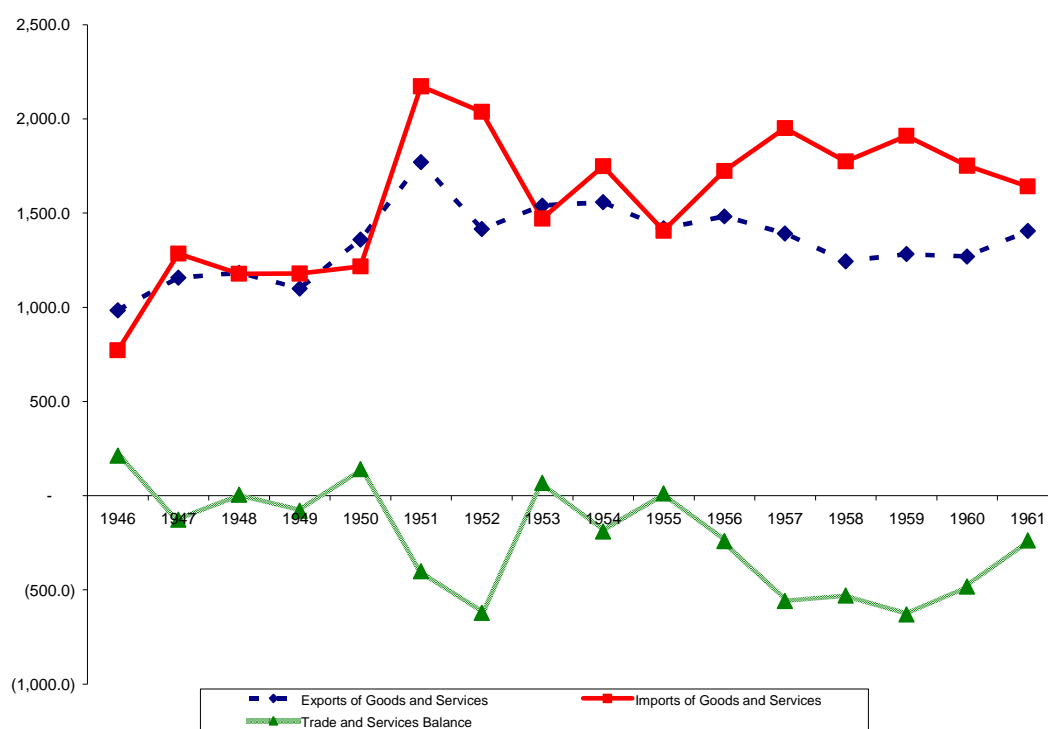
Overall, the two studies combined provide a critique of the system. Huddle essentially argues that most sectors managed to continue importing without major restrictions and there were no relevant changes in the composition of

imports. He also claims this system created a significant incentive for corruption, as the controls were in the hands of a few officials, leading to the appearance of an important black market for foreign exchange.

His criticism is confirmed by the data. Under the import licensing regime the current account deficit was gradually reduced, even reaching a surplus of US\$140 million by the end of Dutra's mandate in 1950 (IBGE, 1950). This was, however, the result of a favorable international context, with coffee prices continuing to rise and terms of trade improving, rather than being due to the import licensing regime restricting imports. Figure 4.3 shows how both exports and imports rose to similar levels between 1947 and 1950. The balance of payments situation did not get much worse only because export prices were able to compensate for the failure of the import licensing system. Imports of goods and services soared by US\$888 million between 1947 and 1951 (IBGE, 1947-1951). This not only supports Huddle's interpretation that the import licensing system and its 'rule of tradition' had actually maintained the previous *status quo*, but also shows that the system was not enough to contain a further rise in imports. The discretionary system not only allowed sectors to maintain their previous level of imports, but also permitted a significant rise of new imports. The import licensing system was clearly very ineffective. The real problem, the overvalued exchange rate and rising imports, remained hidden by the favorable international environment but would soon return. Gudin, the influential economist in the liberal group at Sumoc, estimated in 1950, based on the accumulated inflation since 1939, that the equilibrium exchange rate that would stabilize the balance of payments was between Cr\$25 and Cr\$28 per US\$, at least 35% weaker than the overvalued official exchange rate of Cr\$ 18.7.

He also suggested accepting that depreciation was necessary to overcome the structural balance of payments deficit (Gudin & Kingston, 1950, pp. 120-121).

Figure 4.3 – Balance of Trade and Services, 1946-61 (US\$ million)



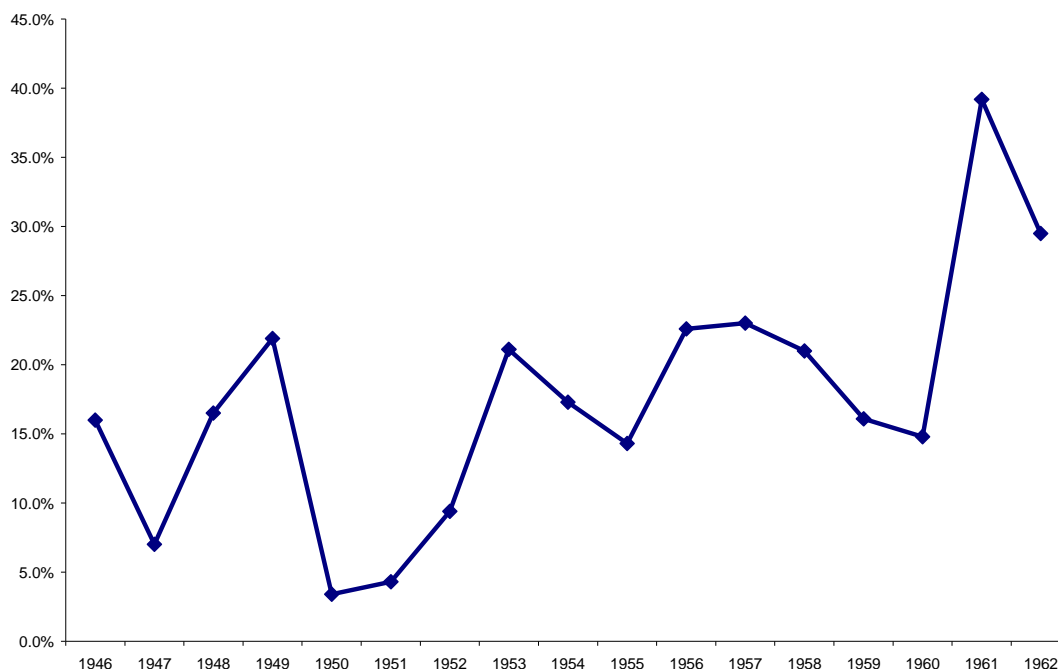
Source: Own Construction from IBGE's *Anuários Estatísticos* (1946-1961).

But the relief did not last long. Dutra left power and Vargas returned to the presidency in 1951. As discussed in Section 4.1, Vargas represented the emergence of the new urban and industrial social classes, while still being influenced by the 'old' elite that had supported his dictatorship between 1937 and 1945. The influence of the developmentalist school and CEPAL's economic thinking was growing, but at the same time the liberal group behind Sumoc's policies in its early post-war period remained present in Sumoc, as reflected by the influence of the conservative elite on Vargas' administration (Lago, 1982, p. 75).

In the early stages of Vargas' mandate, the new administration made significant changes to the economic team, moving toward the developmentalist group. Vargas appointed Horacio Lafer, an important industrialist from São Paulo, as Finance Minister. Walter Moreira Sales, a traditional banker from the state of Minas Gerais, was appointed as Executive Director of Sumoc. The new economic team quickly decided to start relaxing the import licensing regime following the improvement in the trade balance due to the growth in exports in the later part of Dutra's period (Vianna, 1987, p. 43).

Sumoc's council promoted this flexibilization as a way to contain inflation, as the import licensing system imposed at the end of Dutra's mandate reversed the decline in prices achieved in the first part of his term, when exchange rate controls were relaxed. Even though the exchange rate remained overvalued, the import restrictions put pressure on prices (Figueiredo Filho, 2005, p. 124). At the same time, the fear of another escalation in global conflict with the Korean War also contributed to the decision to relax the import licensing system due to the fear of another shortage of goods, similar to the Second World War (Vianna, 1987, p. 43). These initial decisions by Sumoc were intended to stabilize inflation, in order to open the space for policies to stimulate industrialization in the later part of the mandate (Vianna, 1987, p 32). Figure 4.4 shows the increase in inflation from about 5% to above 20% between 1950 and 1952.

Figure 4.4 – Annual Inflation in the Consumer Price Index, 1946-1962 (%)



Source: Own construction from IBGE's *Anuários Estatísticos* (1946-1962).

However, this easing of import restrictions led to a rapid increase in imports, although this time it was not followed by an increase in export receipts. A reversal in coffee prices in 1951-1952, shown in Figure 3.1, resulted in a reduction of foreign exchange inflows and a rapid deterioration in the current account deficit once again, as seen in Figure 4.2. The terms of trade fell about 9% in 1951 and another 8.1% in 1952 (Abreu, 2004, p. 405). With a still fragile position in international reserves after the use of almost all convertible reserves in 1947 during the 'illusion' of foreign exchange, the situation quickly started to become unsustainable and a balance of payments crisis was the looming (Baer, 2009, p. 74).

Clearly, throughout the period from Dutra to the first years of Vargas policymakers believed that there was a conflict between inflation and the

balance of payments deficits, as discussed above by Huddle (1964) and described in the minutes of Sumoc meetings between 1947 and 1952. Expanding consumption in a growing economy was not fully supplied locally, generating great pressure for imports. In this context, Sumoc policymakers kept trying to balance the pressure from rising imports, which helped to contain inflation, with imposing restrictions on imports to stabilize the balance of payments, which resulted in inflation. In moments when rising export prices helped, such as in the end of Dutra's mandate in 1949 and 1950, it was possible to relax import restrictions while at the same time obtaining enough foreign currency for the balance of payments. But when export prices were less favorable, such as in 1951 and 1952, the balance of payments deteriorated again and the trade off between inflation and the balance of payments became clearer. And Sumoc was right in this assessment. As will be shown in Chapter 5, when policymakers finally allowed exchange rate depreciation via the MER system, the new system was much more effective at stabilizing the balance of payments, but it generated some inflationary pressures.

As an attempt to solve the growing balance of payments crisis, Sumoc made a first move toward allowing some currency depreciation in 1951. As described by the minutes of the Sumoc meeting 263 (25/06/1951), its board members discussed the creation of a free market for foreign exchange only for services and the capital account. In that meeting, Fernando Cadaval, Exchange Rate Director for Banco do Brasil, reported that the bank was receiving significant pressure from society to allow a liberalization of the exchange rate market for transactions such as travel, tourism, and health treatments, and when Banco do Brasil refused to provide foreign exchange at a cheaper rate, they saw evidence of the emergence of a black market exchange rate. He argued that Sumoc

needed to create a free exchange rate for transactions outside of the trade balance to solve this problem, and that in practice informally this market was already functioning outside Sumoc's control.

The board discussed this idea and agreed it was reasonable to allow transactions outside of the trade balance to take place via a free market in which supply and demand for foreign exchange could freely operate. The discussion in the board was, again, around the theme of inflation and whether the expected depreciation of the new free market exchange rate was going to bring additional pressure on inflation compared to the expected benefits. There were also doubts over whether this partial depreciation could really help the balance of payments, since services and capital account transactions were a smaller part of the balance of payments: in 1951, capital account flows were US\$48 million and services US\$257 million, whereas trade flows were US\$2.1 billion. Services and capital represented only 12% of overall foreign exchange flows (calculated based on IBGE, 1951).

The process of discussing the creation of the free market was long and resulted in debates in the following Sumoc meetings between July and October of 1951. Different versions of the law were discussed with the Ministry of Finance. At the end of the debate, exactly because these two accounts represented a relatively small part of the balance of payments, Sumoc's board decided to move forward with the project and the free market was approved by the board with the draft of the law being sent to congress in October 1951, after the Sumoc's meeting 265 .

The project was not approved in its original form by the congress, which debated it for almost one and half year. Eventually the debate resulted in Law

1807 in January 1953, which officially created the free market rate but also a first experiment at multiple exchange rates, as will be discussed in the next chapter (Lago, 1983, p. 93). Nonetheless, as the law was sent in the form of a decree, it meant it was valid from the moment of its publication, requiring only later approval by congress. The free market rate had therefore become operational at the end of 1951.

It is important to stress that this decision, and the discussion within the board, was the first time since 1947 that the board seriously considered the alternative of depreciating the currency to solve the balance of payments deficit. The informal rise of the free market in 1951 was very important in shifting the board's view. Either the fear of inflation or the lack of belief that currency depreciation would support exports, were the two reasons why this had not previously been considered. But the awareness that the currency was overvalued had been present since 1947 (Sumoc Minutes 77, 3/6/1947).

It is also important to highlight that there was no direct link between the free market and the official exchange rate. In this period Banco do Brasil continued to have centralized control of both imports and exports, while the availability of foreign exchange for the free market was separate and came exclusively from inflows outside the trade balance, that is, from services or capital. Given the small size of inflows for capital and the structural deficit in the services balance, the free market exchange rate quickly depreciated to Cr\$40 per dollar (against Cr\$18.7 at the official rate) and kept depreciating throughout the decade.

Yet, since the size of transactions outside the trade balance was small, this depreciation did not have any significant impact on the balance of payments.

The real problem, which was the impact of the strong currency on the current account, remained without a solution. In 1952 the current account deficit peaked at almost US\$600 million, which was about 2.6% of GDP (IBGE, 1952), forcing Sumoc to cash out all of its international reserves (Vianna, 1987, p. 49).

4.4 Chapter Conclusions

This chapter has reviewed the political history of post-war Brazil, the history of the institutions and actors behind macroeconomic policy, and presented a chronological review of economic policies from the end of the war until 1952.

The first part of the chapter reviewed Brazil's political and institutional history and concluded that while Sumoc was created according to liberal ideas, it became an 'arena' for macroeconomic policy between two different schools of economic thought and served the interests of the leader in power at each time: from Vargas' balanced approach to the full orthodoxy of Café Filho to Kubitschek's preference for the developmentalist school.

The second part of the chapter discussed the macroeconomic policies of the immediate post-War period, during the presidencies of Dutra and the early years of Vargas. It showed that the import licensing regime adopted at the end of Dutra's administration was not effective at stabilizing the balance of payments, and also that the creation of the free market rate was only a minor step in the process of allowing exchange rate depreciation.

The next chapter will provide a detailed analysis of the MER system between 1953 and 1961, and how it first solved the balance of payments problem, but then declined and collapsed following the changes made by the Kubitschek administration.

5. Macroeconomic and Exchange Rate Management under the MER regime

Chapter 4 provided a review of the political history of post-war Brazil, the history of the institutions and actors responsible for exchange rate management during that period, and a chronological overview of exchange rate policies from the end of the Second World War until 1952, including the earlier attempts to solve the structural balance of payments deficits before the adoption of the MER regime. The chapter argued that the import licensing regime and the introduction of the free market rate were not enough to stabilize the balance of payments, and did not solve the structural overvalued exchange rate problem. By the start of 1953, Brazil was close to another balance of payments crisis.

This chapter continues the chronological review of exchange rate policies in post-war Brazil, now focusing on the period of the MER regime between 1953 and 1957. It begins by discussing the first phase of the MER between 1953 and 1957, which was effective at stabilizing the balance of payments and improving macroeconomic conditions. It then reviews the changes in the MER system after 1957, which led to the decline and eventual collapse of the MER experiment in Brazil.

5.1 1953-1957: Instruction 70 and Multiple Exchange Rates

During the 1952 balance of payments crisis Sumoc continued discussing other ways to reduce the foreign exchange shortage and improve the balance of payments deficit. The free market rate had been functioning since the end of 1951 but its official law remained without approval in congress until the start of 1953. Sumoc minutes describe a long process of negotiation between Sumoc,

the Ministry of Finance, and members of the private sector and politicians in congress who sought to agree on the law. Since the free market was proving enough to stabilize the balance of payments given its limited impact on flows, the pressure for a devaluation of the exchange rate for some trade transactions was rising (Sumoc Minutes 300 to 350, 1952).

This debate inside Sumoc resulted in another attempt to allow some further currency depreciation, now in the form of also allowing some depreciation for a group of exports in an effort to stimulate them. Officials' belief that most exports, particularly coffee, were inelastic to currency depreciation meant, however, that Sumoc proposed the depreciation only for a limited number of sectors. Thus, sectors that did not represent more than 4% of total exports (considering the previous three month average) were allowed to transact at the free market rate. It is important to notice that all imports and most exports still remained authorized to only use the official rate, but with this change the free market rate, at least for a short period of time until the MER was adopted, was now used for a mix of services, capital, and some merchandise exports. This decision was incorporated in the final version of Law 1807, which officially created the free market rate. The new exemption also gave Sumoc the prerogative to determine which sectors would be included or removed from the free market rate. Law 1807 was approved in congress on 7th January 1953, and the Sumoc meeting 360 on 10th February of 1953 decided that Sumoc would determine which sectors would be included or removed from the exemption. Although the MER system was only created for imports later in 1953, in practical terms Law 1807 produced a small first experiment MERs, as a small group of exports were allowed to transact at the free market rate.

During the first half of 1953 various minutes of Sumoc meetings describe long discussions about the situation of the balance of payments, which was not improving even with the free market rate applied to a small group of exports. The minutes also describe the difficulty Sumoc officials had in determining which sectors would receive or not the exemption to operate at the free market rate. At every meeting Sumoc discussed a demand from a new export sector that sought to be allowed to export at the free market exchange rate (Sumoc Minutes 375 to 392, 1953).

Around the middle of the year Vargas changed his economic leadership, appointing Oswaldo Aranha, a Brazilian politician and diplomat, as Minister of Finance and José Soares Maciel Filho, an economic journalist, as Sumoc's Executive Director. According to Bulhoes' memoirs (1990, p. 100), Maciel Filho was not well regarded by the original Sumoquean group and was considered an economic populist. Nevertheless, the new leadership seems to have followed the same pragmatism as the previous Sumoc board and was forced to search for solutions to the balance of payments crisis. Many minutes of Sumoc board meetings during 1953 describe long discussions about the conditions of the balance of payments but without reaching practical solutions (Sumoc Minutes 375 to 392, 1953).

In October 1953, the new economic leadership came up with a solution to try to permanently resolve the balance of payments situation while at the same time avoiding a large currency depreciation. On 9th October Oswaldo Aranha opened a board meeting by saying 'I have called the board for a special reason to present a suggestion for a topic of the highest importance for the economy and the finances of the country', and then started to discuss the draft of Instruction 70 (Sumoc Minutes 408, 1953), which was then approved and

launched a few days later. Aranha acknowledged Marcos de Sousa Dantas' contribution to Instruction 70, as he had brought the original idea to the table. Dantas was the President of Banco do Brasil and also an economist linked to Vargas (Sumoc Minutes 408, 9/10/1953).

Instruction 70 proposed that the import licensing regime should be replaced by a system of foreign exchange auctions. The regime gave Banco do Brasil the monopoly of all trade foreign exchange transactions, leaving only services and the capital account to the free market. On the import side, goods were divided into five categories. Category 1, which had the most favorable exchange rate, included the most essential goods, such as some foodstuffs, chemicals, agricultural equipment, and medicines. Category 2 included some production inputs (rubber, for example), electrical material, and medical equipment. Category 3 included all industrial equipment, capital goods, and some consumer durables, such as vehicles. Category 4 included all non-essential equipment and some production inputs like steel. Category 5 included all other sectors, which were basically all the remaining consumption goods. In the minutes of Sumoc's relevant board meetings, there is no explanation of why officials opted for five categories, only a reference to them spending a long time debating which sectors to include in each of them (Sumoc Minutes 408, 9/10/1953).

According to Kafka, who was an advisor to the board during this time, the main objective of the system was achieve balance of payments stability, although the choice of five categories and the distribution of sectors among them was part of a plan to stimulate industrialization in advanced sectors (Kafka, 1956). Given the restrictions on the availability of foreign exchange, the structure of the auction system prioritized sectors without local substitutes

while strongly restricting foreign exchange for goods that could be produced locally. Most advanced industrial goods, such as steel and capital goods, which were supposed to undergo import substitution at that time, were included in Categories 3 to 5, while essential foodstuffs and some products that had no local substitute were included in Categories 1 and 2. As will be discussed in Chapter 7, at first this structure was targeted at providing protection to these industrial sectors in line with developmentalist economic thought, but in practice the allocation of foreign exchange to different sectors did not provide a stimulus for their faster substitution. The depreciation of the various exchange rates was in fact only adjusting for the cruzeiro's long period of overvaluation (see Figure 4.1). Chapter 8 will also provide primary evidence from Vargas' personal archives that while protectionism and stimulating import substitution were part of the plan behind the MER system, balance of payments stability was the primary reason for the auction system.

To keep the balance of payments stable and regulate the outflows of foreign currency, Banco do Brasil defined the quantities of foreign exchange to be auctioned for each category on a weekly basis, which were then auctioned in public exchange houses across the country. In practice, Banco do Brasil was not auctioning the actual dollars but rather a license to import products in that category for the exact amount purchased in the auctions (Gudin, 1956, p. 502). As Banco do Brasil was the only one authorized to execute the foreign exchange operations, it was able to guarantee that the licenses were only used to import products in the correct category. These new licenses were called promises to sell foreign exchange (*promessas de venda de cambio*, PVC) (Vianna, 1987, p. 103).

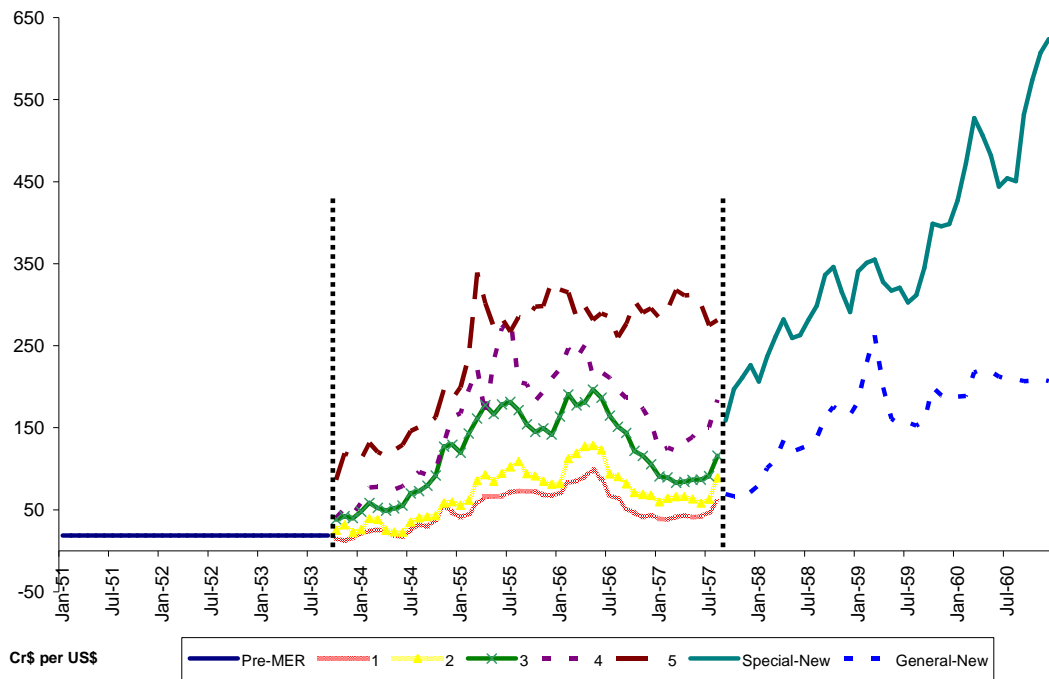
The auctions were held in different exchange houses throughout the country, with the distribution of foreign exchange between the cities also arbitrarily allocated by Banco do Brasil. During the whole period of auctions, São Paulo and Rio de Janeiro, Brazil's biggest cities, each received at least 30% of all foreign exchange, with the remaining 40% distributed to the rest of the country. Initially only 12 auction houses were established, but the number increased to 20 over time (Huddle, 1964, p. 95). Although most of the trade in Brazil was concentrated in São Paulo and Rio de Janeiro, officials believed the system would be more efficient if there were a large number of exchange houses, allowing foreign exchange to reach different parts of the country, even if in small quantities (Lago, 1982, p. 95).

Kafka (1956) thought that having various auction houses across the country allowed foreign exchange to reach demand across different regions, helping to contain the emergence of a black market, but it could also result in regional exchange rate differences, as there was no price mechanism to match the exchange rates resulting from the auctions held at different places. To correct for this, minimum prices for the exchange rates for the different categories were introduced for all auction houses based on the auction results of the previous week. At the end of each week, the information from the auctions was centralized at Banco do Brasil, which then decided the quantities and minimum prices for each category and each location for the following week (Gudin, 1956, p. 503). This process helped to guarantee price homogeneity in the auction results.

The auctions were made for the price of the foreign exchange, which means the bids were for the highest price importers were willing to pay for the foreign currency to be used for one of the categories. The exchange rate for each

category was also called *custo de câmbio* and was the sum of the official exchange rate plus a *sobretaxa*, which was the price resulting from the auctions. Most of the auctions were for US dollars, but there were also some smaller auctions for other currencies from countries with which Brazil had direct trade relationships and payment agreements, such as France and the United Kingdom (Vianna, 1987, p. 100). Even if full currency convertibility was only reached between the United States and Europe later in the decade, most countries were already using the US dollar as the reserve currency during those early days of the Bretton Woods period, so most of Brazil's trade transactions were conducted in US dollars. Sumoc's records of the quantities of foreign exchange show that on average less than 5% of all currency offered in the system was not US dollars, mainly consisting of small amounts of French francs and British pounds (Sumoc's *Annual Bulletins and Reports*, 1953-1961). The higher the category, meaning the less essential the sectors and goods included, the smaller was the amount of foreign exchange offered by Banco do Brasil. This pushed the price of foreign exchange up and depreciated the exchange rate for that category. Auctions took place once per week in each of the auctions houses, and only registered import companies could participate. Individuals were not allowed because all services and capital transactions were already taking place at the free market exchange rate, which was on average about 10% of overall amounts transacted in the foreign exchange market. The auctions followed a traditional English auction system, in which open ascending bids were made. The minimum PVC was US\$1,000 and the process was repeated as many times as was needed to sell all of the available foreign exchange at each location (Gudin, 1956, p. 503). Figure 5.1 shows the average monthly exchange rates per US dollar for each category in the period of the MER regime.

Figure 5.1 – Multiple Exchange Rates, 1951-1960 (Cr\$ per US\$)



Source: Own construction from data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

The devaluations obtained in almost all categories are impressive, even for Category 1, in which the essential products were included. In some cases, the exchange rate reached almost Cr\$400 per dollar in a couple of years (about a 2,100% depreciation), such as in Category 5, with the official Cr\$18.5 remaining as the parity rate reported to the IMF during the whole period. It is remarkable how well controlled the depreciations of the multiple exchange rates were. Given that the price was endogenous and resulted from the auctions mechanism, a lot of variation in the resulting exchange rates could be expected, as well as possibility of the different categories crossing each other over time. There was no *a priori* technical reason for Category 1 to remain lower than Category 2 and so on during the whole period between 1953 and 1957, and yet

this was achieved under the MER regime. This suggests the authorities were able to distribute foreign exchange across the five categories, so that the depreciations were controlled and exchange rates followed the ranking of priorities. It suggests the key aspect of the system lay in controlling the quantities of foreign exchange being auctioned. Chapter 6 expands on this analysis, looking at the data on quantities auctioned to understand how this distribution took place.

Most of the foreign exchange collected from exports by Banco do Brasil was offered at the auctions, but the government kept its essential external purchases outside of the auction system, retaining about 30% of foreign exchange for its own use (Vianna, 1987, p. 105). Sections 5.2 and 5.3 will discuss this aspect in more detail, where it will be shown that the increase in imports outside the auctions, from the government but also from exemptions given to the private sector, was a major reason behind the decay of the system in the later years of the 1950s.

On top of paying a higher price for foreign exchange because of the *agio*, which was the difference between the official exchange rate and the auctioned exchange rate, the importer also had to pay an 8% tax on the amount of dollars being purchased. Everything combined, importers were paying the official rate plus an 8% tax on the amount being bought plus the *agio* (Lago, 1982, p. 100; Rio & Gomes, 1955, p. 356). As previously indicated, there were basically no import tariffs added to this price because the 1934 tariffs law was still in place and tariffs were specific rather than ad valorem. Tariffs overall did not represent more than 5% ad valorem and were not a major source of protectionism since the exchange rate devaluations were significantly larger

(Sochczewski, 1980, p. 99). Tariffs only became an important part of the structure when the system was reformed in 1957, as will be discussed below.

It is important to clarify who exactly were the importers who participated in the auctions to fully comprehend how the system worked. The above system would only work if importers alone could participate, functioning as intermediaries between the foreign exchange market and the rest of the economy. If importers were part of the local industrial sector, in a vertically integrated system in which they imported inputs for local production, then the whole system would do nothing more than only provide foreign exchange to the larger industrialists in society, similarly to the pre-MER licensing system, which allowed industrialists to keep their existing levels of imports even with the restrictions of the licensing system. This does not seem to be the case for the new MER system, however, as it appears to have been designed so that importers were a distinct group. Only registered import companies were allowed to participate in the auctions, and there were two important institutional restrictions to entry: (1) scale mattered because the minimum license value was set at the high level of \$1,000 and importers were allowed to bid on any of the auctions houses across the country but only if they had formally opened branches in each location; and (2) more importantly, importers were forced to pay for the currency and the *agio* upfront, while having up to 120 days to confirm the imports with Banco do Brasil and only then sell the goods locally. The latter restriction meant that importers needed a cash flow in the form of credit from Banco do Brasil, which was only provided to registered import companies. This was an official policy and had the objective of helping importers to participate in the MER system, while also excluding non-import companies from it (Kafka, 1956).

The system was entirely different for exporters. Instead of an auction system, exporters were not anymore allowed to transact in the free market and were obligated to sell all their foreign exchange to Banco do Brasil, which paid them a fixed exchange rate. The government created two fixed exchange rates to pay the exporters: the official rate plus a bonus of Cr\$5.0 per dollar for coffee exports and the official rate plus a bonus of Cr\$10.0 for all other product categories (Rio & Gomes, 1955, p. 357).

These bonuses, on top of the fixed exchange rate for exports, were intended to compensate for the depreciation of the import MERs. Exporters, particularly coffee producers, were the main source of foreign exchange and still had a relatively important position in Brazilian society in the early 1950s, as discussed in Chapter 4 (Skidmore, 1982, p. 114). There was a clear concern on the part of policymakers in the Vargas period to compensate exporters, which was reflected in the design of the first MER system. While the regime was initially designed to stabilize the balance of payments and protect local production through devalued exchange rates, it was in theory simultaneously able to use some funds coming from importers to subsidy the export sector. The government was obviously trying to at least officially compensate exporters for not having the same depreciated exchange rates as importers, and was willing to use part of its revenues to do so, even though a large part still remained for the government use (Sochaczwesky, 1980, p. 91).

Chapter 8 will present qualitative evidence that explicitly highlights authorities' concern about supporting exporters. And this was not only the case for coffee producers. By the early 1950s, policymakers knew coffee production was facing an important structural decline, and they sought to stimulate other export sectors, including manufacturing, although they were starting from a

low base. This debate was present in the discussion of the design of the system in the minutes of the Sumoc meetings at the end of 1953 (Sumoc Minutes 408, 9/10/1953).

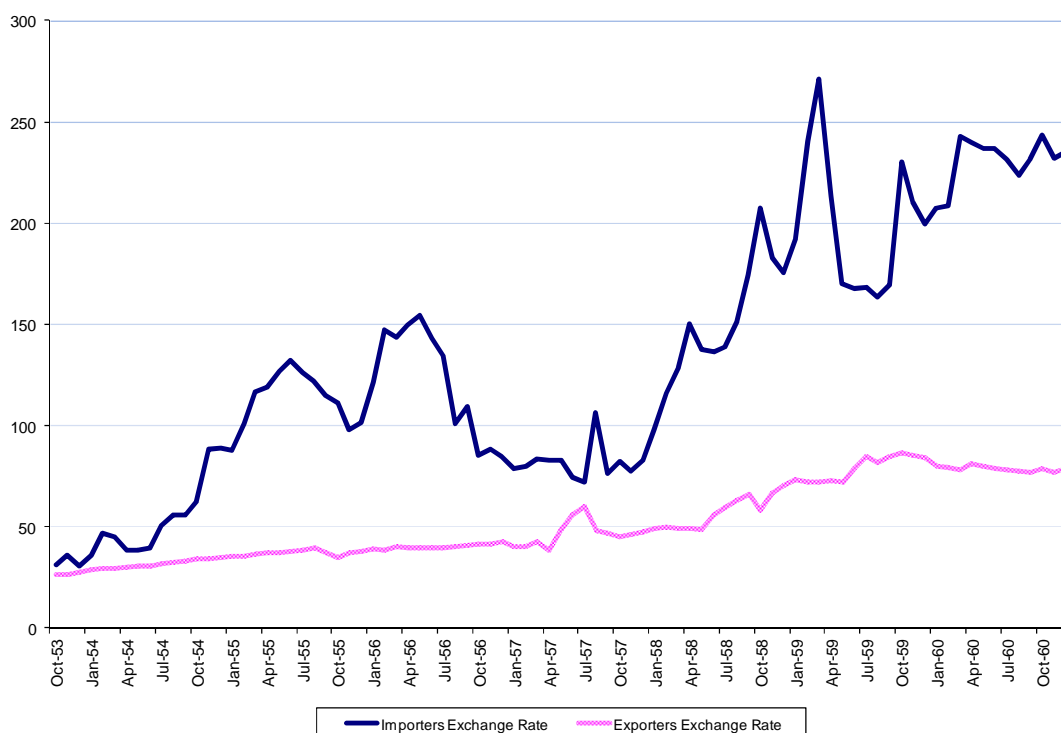
From a theoretical viewpoint, then, the bonus for the exporters contrasts with Leff's (1967) claim that exporters never had any stimulus during this period. He argued that exports were seen only as a form of 'leftover' from production that was not internally consumed, and policymakers were only concerned with import substitution. Tyler (1983, p. 98) makes a similar argument and claims policymakers in Brazil had a strong 'anti-export' bias to favor import substitution policies in the post-war period until the end of the 1970s, although he believed bias was smaller in the 1950s than in the subsequent period. The bonus for exporters suggests a real concern for trying to stimulate manufactured exports and compensate for the gradual decline of the coffee sector.

This was also the reason why the bonus for categories other than coffee was double: Cr\$10.0 per dollar versus Cr\$5.0 per dollar. And given that the official exchange rate was Cr\$ 18.7, this was a substantial subsidy being transferred to exporters. The bonus for coffee exports was, however, smaller because it was the major export good and its bonus was consequentially more costly than the other sectors. During the early 1950s, coffee exports still represented 60-70% of total exports, with only 30-40% coming from all other sectors, including just 3% from manufactured goods (Bergsman, 1970 p. 100; Vianna, 1987, p. 54). In practice, exporters were receiving the official rate plus this subsidy from the government. These bonuses for exporters were paid using the money from the *agios* charged to importers, and were the so-called *bonificações* (Lago, 1982, p. 101).

These export bonuses were not the same during the whole existence of the system, and were gradually increased (such as in Sumoc Instruction 99, 17/08/1954) to compensate for inflation and also to catch up with the adjustment to import exchange rates, which were rising rapidly in the auctions, as seen in Figure 4.1. Since the exporters' rate was fixed and the importers rate resulted from the auctions, Sumoc was always running to catch up with the pace of depreciation of the exporters' exchange rate, to prevent the gap between importers' and exporters' rates from not widening too quickly.

But in practice this never happened, and exporters kept seeing a widening gap with the import exchange rate. So while theoretically the system was designed to also support exporters, contrary to the argument of the anti-export bias, in practice it was not doing so. The bonuses were never enough to compensate for the widening gap between the average import and export exchange rates, which meant that in fact exporters were transferring a large implicit subsidy to importers. This can be seen below in Figure 5.2.

Figure 5.2 – Import versus Export Average Exchange Rates, 1953-1960 (Cr\$ per US\$)



Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

Figure 5.2 shows that the gap between the average import exchange rate grew when compared to the export exchange rate after 1957. The policy of increasing the bonus to exporters happened during the whole period and accelerated after 1957, but was never enough to provide any real stimulus to the export sector. Exporters kept receiving a much smaller rate in comparison to the rate charged to importers at the auctions, disincentivizing their business. This explains why the adjustment in the balance of payments that resulted from the MER system was essentially made via a reduction in imports. Exports receipts of coffee were in a slow decline during the decade, and there was essentially no rise in exports of manufactured goods (IBGE, 1950-1960).

The money received by the government, both from the transfer tax and the *agio* paid in the auctions, had two destinations: revenues to the government and the subsidies to exporters just discussed. Banco do Brasil had a booking account to register this flow of taxes and subsidies, with the remaining money sent to the government, which rapidly became an important source of revenue (Vianna, 1987, p. 104; Rio & Gomes, 1955, p. 358). Table 5.1 shows *agios* and *bonificações* during the period 1954-1957.

Table 5.1 – *Agios* and *Bonificações*, 1953-1960 (Cr\$ Millions)

	Agios (Taxes)	Bonificações (Subsidies)	Net Revenues from MER System
1953	\$5,111,965.34	\$4,261,950.00	\$850,015.34
1954	\$45,058,894.56	\$20,148,510.42	\$24,910,384.14
1955	\$66,796,524.79	\$26,108,713.13	\$40,687,811.66
1956	\$81,860,754.64	\$32,048,247.92	\$49,812,506.72
1957	\$76,320,652.41	\$38,931,920.00	\$37,388,732.41
1958	\$70,780,550.18	\$47,810,548.33	\$22,970,001.85
1959	\$96,652,195.28	\$77,480,875.00	\$19,171,320.28
1960	\$117,755,731.73	\$76,261,912.50	\$41,493,819.23

Source: Own construction based on primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

Table 5.1 not only shows the significant increase of *agios* during the first four years of the system, but also that the subsidies were significant and net revenues were very large for the government. In 1954, Cr\$24 million represented 20% of the total government budget – a figure that reached 25% in 1957 (calculated from Sochaczwesky, 1980, p. 127). Nominal revenues from the system continued to rise after 1957, but, as will be shown below, their share of government revenues declined, as they were substituted for by revenues from the introduction of ad valorem tariffs. A more detailed analysis of the welfare effects of this system, in which importers, exporters, and the government

received part of the benefits, is the topic of Chapter 8. It will be seen that despite this rebate for exporters via the *bonificações*, the system was not as capable of protecting exporters as it initially appears. Particularly after the changes in 1957, which will be discussed below, the exporters were actually the main group subsidizing a system that benefited mostly industrialists and the government.

This complex MER system, with its redistributive implications, was originally conceived of by the group of developmentalist economists linked to Vargas, although their plan still clearly shows the desire to stabilize the balance of payments and depreciate the currency, rather than simply promote industrialization. Chapter 8 will discuss the political economy of the system and provide further primary evidence that the main objective was balance of payments stability, although promoting industrialization was also a secondary objective of the system's design. Bulhões and the original Sumoquean group were kept out of policymaking during the Vargas mandate. In a late interview, Bulhões (1990, p. 101) said he was against the introduction of the MER system and would have preferred a unilateral depreciation of the exchange rate and opening all transactions to the free market, as this would have been a better way to adjust the balance of payments. He also argued that the protectionism implicit in the auction system was supposed to be done by tariffs and not exchange rate differentiation. At the same time, however, he agreed that the system was a much better option compared to the previous licensing system, which kept the exchange rate overvalued and was a major source of corruption in Banco do Brasil.

Huddle's (1967), who as discussed in Chapter 4 was one of the few authors who studied the evolution of the MER at that time, also provides a theoretical

evaluation of the first phase of the MER system between 1953 and 1957, which he claimed to be a much more effective system than the previous import licensing regime. According to him, the main benefits of the MER in its first phase were: (1) the balance of payments discipline it created, allowing a major correction of the current account deficit by effectively controlling the level of imports; (2) the distribution of imports to priority sectors; and (3) the ability to transfer profits from importers to the government in the form of taxes on the auctions.

Huddle's assessment of the system was mostly correct. The import licensing system was, as he suggests, incapable of providing balance of payments stability and imports did not fall at all, which is why the 1947-1952 system resulted in a balance of payments crisis, as shown in Chapter 4. Moreover, the MER system imposed in 1953 was indeed a much more effective regime for stabilizing the balance of payments and providing macroeconomic stability, which will be shown in the rest of the chapter below. He was also right to argue that the increased production of capital and final consumer goods was not a direct consequence of the MER instruments, as Chapter 7 will show that the MER did not produce industrialization as a protectionist instrument, and Chapter 8 will show that the government's industrial policy was the main driver of industrialization. Overall, without much empirical evidence, Huddle was right in his general assessment of the reasons for the failure of the import licensing system and for the effectiveness of the MER.

The other contemporary author who also provides a theoretical analysis of the MER system was Kafta (1956). Kafta wrote as the system was being introduced and was not able to analyze its final results. His analysis is nonetheless important when the context of his work is discussed. Kafka was part of the

group of policymakers who created the system in the first place. He worked as an advisor to Sumoc, the normative monetary authority during that period, and then as advisor to the Ministry of Finance between 1951 and 1955, when the system was introduced and implemented. In this context, it is not surprising that he also claims, like Huddle, that the MER system was a much better option compared to the previous import licensing regime. But Kafka also discusses some of the operational difficulties involved in implementing the MERs, which is an interesting primary source to show how policymakers dealt with the challenges facing the transition to the MER system in the 1950s. He did not write about the system again because he left to work at the United Nations in 1956. His only later academic work is a theoretical discussion about protectionism, without a specific focus on the Brazilian case (Kafka, 1962), which means there is no later analysis from him to revise his own remarks written at the time.

Kafka's overall take on the MER system is positive and similar to Huddle's. He stated that 'the new exchange auction system undoubtedly represents a vast improvement over its predecessor, mainly because it limits substantially the administrative discretion and because it recognizes the depreciation of the currency' (Kafka, 1956, p. 321). He also claims that it was an 'imperfect cure' to the various problems of the previous import licensing system, which mostly aligns with Huddle's view from the 1960s.

Kafka also makes some interesting comments about the operational part of the MER auction system. Although he believed it was an advance on the previous system, there were some operational difficulties. He states that the auctions were only made in large denominations (US\$1,000 or the equivalent in other currencies), and only for registered import companies. This excluded smaller

companies and individuals from the system, reducing competition. At the same time, however, he argues that this was the only way in which the system could have worked and it rationalized import demand compared to the previous system, in which anyone could fight politically for their share of foreign exchange (Kafta, 1956, p. 311).

Another interesting point is that there was a lot of variation in the exchange rates between the various auctions houses across the country. The introduction of minimum price bids was chosen as a way to equalize them, although it led to not all foreign exchange offered being purchased. Kafka (1956, p. 312) states that this was more common for countries with inconvertible currencies or for which there was little demand, and not for the US dollar, which received most of the funds. He does not think this resulted in any special problem, as this non-purchased foreign exchange was usually sold in the following auction. Kafka (1956, p. 312) also argues that the authorities were able to distribute foreign exchange according across regions and according to the sectoral demand for each category, which is the topic of Section 5.5 below, as it will test the mechanics of how the system was able to produce balance of payments stability.

Indeed, the system was quite effective at stabilizing the balance of payments via a reduction in imports: imports fell by US\$600 million between 1952 and 1955 (IBGE, 1952-1955) and the trade balance and the balance of payments stabilized quite rapidly, achieving a surplus of US\$17 million in 1955, against a deficit of US\$203 in 1953 (IBGE, 1953-1955). In contrast with the previous import licensing system, there was no black market for foreign exchange between 1953 and 1957 (Huddle, 1964).

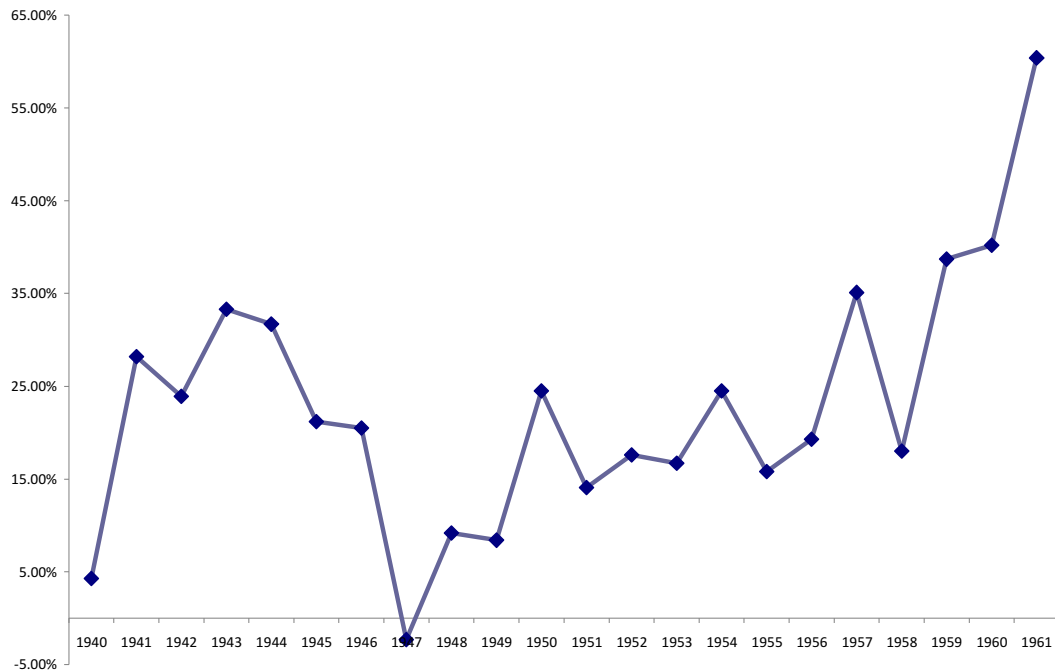
5.2 1955: Instruction 113 and the Surge in FDI

The MER system stabilized the balance of payments for several years, but after Vargas' suicide in 1954, Café-Filho assumed the presidency for a brief period before the next elections in 1955. Under Café Filho, the original Sumoquean group returned to run economic policy. Gudin was appointed Minister of Finance and Bulhões himself was appointed Sumoc's Executive Director, with Kafka and Campos as Gudin's senior advisors. As they did during the Dutra administration, the immediate objective of the liberal group was to reduce inflation, which was increasing after the devaluation of the exchange rates under the new MER system. Although it remained stable around 20% during the years of the first MER, it had climbed from 9.4% in 1951 (IBGE, 1951), at the end of the Dutra administration, which was a major concern for the liberal group. The acceleration of inflation following the devaluation of exchange rates between 1952 and 1954 confirmed Sumoc's officials view that the trade off between stabilizing the balance of payments and inflation was indeed present. Without the downward inflationary pressures from rising imports at the overvalued official exchange rate of the previous period, the combination of restricted imports at weaker exchange rates generated fear of inflationary pressures. Nonetheless, the liberal group still saw the MER system as working well, as it gave a structural solution to the balance of payments by having a controlled devaluation of the currency (Lago, 1982, p. 166). Gudin thought that the MER system was an intermediary between 'total chaos' and 'normality', but should be allowed to continue in place, given the government's other priorities (Malan, 1974, p. 4).

On top of the inflationary pressures rising from the depreciation, Gudin and Bulhões were also worried about the monetary expansion over the previous

few years (Bulhões, 1990, p. 104; Vianna, 1987, p. 117). The previous economic team was led by developmentalists, both at Sumoc and the Ministry of Finance, who both designed a system for balance of payments stability but also allowed an expansionist monetary policy to provide funds to Banco do Brasil and help industrialists. As mentioned, Sumoc was not yet a fully effective monetary authority, as Banco do Brasil could print money to fund itself and give credit to markets. Sumoc therefore tried to enforce monetary control by issuing instructions to Banco do Brasil with monetary expansion quotas, but they were not always followed and during Vargas' years Sumoc adopted quite a relaxed stance on the issue. Figure 5.3 shows how the expansion of the monetary base rose from around 15% annualized growth to close to 25% between 1951 and 1954. While this was not yet enough to force the country into a complete macroeconomic disequilibrium, it was enough when combined with the depreciation of the various exchange rates to bring inflation back up from around 5% in 1951 to almost 20% in 1954 (see Figure 4.4).

Figure 5.3 – Monetary Base, 1940-1961 (Annual % Growth)



Source: Own construction from Abreu (1990, p. 402). Original data from IBGE.

The liberal group leading Sumoc only stayed until the following year, but that was enough time to implement some tightening of the money supply, although this was difficult to implement given the endogenous money printing process at Banco do Brasil (Gudin, 1956, p. 508). As seen in Figure 4.6, the monetary base growth rate fell by about five percentage points between 1954 and 1955. The main instrument of this tightening was the instructions issued to Banco do Brasil, which were supposed to determine the levels of monetary expansion (Sumoc Instructions 83 to 125, 1954 and 1955).

Notably, the liberal group recognized one of the disadvantages of the MER system that they nevertheless kept in place: the negative impact on investments and FDI inflows (Caputo, 2009, p. 42). With most imports restricted to the auctions, a lot of uncertainty was brought to the imports of capital goods and consequentially to investment. Brazil already received minimal foreign

investment in the post-war period, but the uncertainty regarding the availability of capital goods made this condition even worse.

Between 1953 and 1955, after the MER regime was installed, gross fixed capital formation fell from 15.1% to 13.5% of GDP, having been at a similar level of around 15% in both 1952 and 1951, and the capital account fell from a net inflow of US\$59 million to only US\$3 million (IBGE, 1951-1955). So while the system was working well to stabilize the balance of payments from a current account perspective, which was the primary objective, it was also indirectly having a negative impact on the capital account. Solving this externality would help the system as whole, as the more capital inflows there were, the more foreign exchange would be available for the auction system, reducing the pressure imposed on importers. It is important to stress that while the capital account was almost closed at the time, with other sources of financial flows being largely inexistent, FDI was legal and made through the free exchange rate market. Only imports of goods were made through the auction system. Transactions of services and FDI could be exchanged outside the system at the free market rate (Sochczewski, 1980, p. 90).

The response to this problem came with an important adjustment to the auction system in 1955: Sumoc's Instruction 113. This new policy followed some of the original ideas that had led to the formation of Sumoc in the mid-1940s and was targeted at re-opening the economy, but in a more gradual way than under Dutra's administration, exactly because of the balance of payments problems that had resulted from that experience (Lago, 1982, p. 117). Instead of re-opening the market as a whole, Sumoc decided to do it only for capital goods in a direct attempt to solve the problem of lack of FDI flows. The new legislation allowed importers of capital goods to classify them as FDI, making them

eligible for the official exchange rate, without having to go through the auctions. Foreign investors could now directly buy capital goods outside the country with their own funds, and then import them at their face value as FDI, without including them as imports in the balance of payments. In this way, imports of capital goods were removed from the auction system and instead of having a negative value in the current account, they were recorded as positive values in the capital account. This modification reduced significantly the cost of FDI inflows, as foreign investors could be sure that they would be allowed to import capital goods at the much cheaper (that is, overvalued) official exchange rate (Sumoc Minutes 507, 17/01/1955). This structure combined with a boom of investments from multinational companies in Brazil and in Latin America as a whole during the late 1950s, which will be discussed below, explains the significant rise of FDI flows.

The implicit aim of Instruction 113 was to start stimulating new sectors for industrialization, particularly the automotive industry (Bulhoes, 1990, p. 110; Malan, 1974, p. 5), which demonstrates that the liberal group, while it had a much more orthodox policy approach, was also still supportive of industrialization. As shown in Chapter 3, this was one of the various policy moves targeted to stimulate industrial development, which were not part of the common tariff-dominated description of the ISI model. This policy, as well as the other tools used for industrialization in the second half of the decade and the political economy behind this policy move will be analyzed in Chapter 8, where they will be analyzed as part of an industrial deepening process.

Caputo (2007, p. 40) argues that the discussion inside Sumoc to find ways to stimulate the capital goods imports started even before Gudin and Bulhoes' term in the institution. Previous instructions during 1953 and 1954 authorized

Banco do Brasil to allow imports of some capital goods outside the auction system, suggesting officials were already concerned with this externality a few years previously. In fact, Law 1807 and Instruction 70 in its Article XVI, which can be found in Appendix 2, included the discretionary possibility for Sumoc to authorize imports outside the system if it wanted to (Sumoc Minutes 408, 9/10/1953). This was, however, almost not used by Sumoc before Instruction 113 was introduced in 1955.

When the developmentalist group came back to policymaking in mid-1955, after Kubitschek was elected, the new legislation from Instruction 113 remained in place, as it brought clear benefits to industrialization and FDI inflows. Between 1956 and 1961 Kubitschek delivered his famous investment program, the Target Plan, and Instruction 113 became a major channel to allow foreign investment to enter the country (Baer, 2014, p. 80). As Figure 4.2 shows, FDI to import capital goods surged from about less than US\$50 million per year during 1950-1955 to more than US\$200 million by 1957. Industrialization levels also surged as discussed in Chapter 4, with industrial growth increasing on average by 2 percentage points from 7% to about 9% (IBGE, 1950-1960). In a way, the increase in foreign investment that Dutra had expected in 1946 only happened a decade later and after this change in the legislation.

This significant rise in FDI was not only the result of the subsidy from Instruction 113 but also a consequence of an important change in the global context in the second half of the 1950s (Lago, 1982, p. 172). In contrast to the late 1940s and early 1950s, this was a period of expansion of international trade and investments in emerging markets. This period saw, moreover, the emergence of a new form of foreign investment with the rise of multinational corporations. Investments not only came as portfolio capital or infrastructure

projects for commodity exports, which had been the case in the first half of the century, but directly toward the production of knowledge-based products in developing countries (Buckley and Casson, 1976, p. 36). Furthermore, important changes in the organization of international businesses were taking place, in particular the development of horizontal multinational corporations (Hymer, 1976, p. 270). This new context strongly benefited Brazil, which offered a growing industrial economy combined with a subsidy scheme designed to attract foreign corporations.

Shapiro (1994) stresses that this new international environment was the result of the end of the ten years of recovery that followed the end of the war. The profitability of domestic operations fell in both the United States and Europe, pushing firms to place greater emphasis on overseas expansion. International competition intensified as a result, and aggressive European firms began to challenge the US firms in their traditional export markets, including Latin America. In this context, when the first firms decided to invest in Brazil, others followed to defend their market shares. Shapiro (1994) also shows that in the specific case of the auto sector, this shake-up in global competition between US and European companies gave the Brazilian government greater leverage over the auto transnationals. By issuing a credible threat that the Brazilian market would be closed to imports, which was indeed delivered with the new tariffs Law in 1957, and by creating subsidies such as Instruction 113 to attract them, the government was able to pressure and attract transnationals to engage in full-scale local production.

The structure created by Instruction 113 allowed industrialists to classify their imports of capital goods as FDI at the official exchange rate (Sumoc Minutes 507, 17/01/1955). In practical terms, foreign investors had to request an

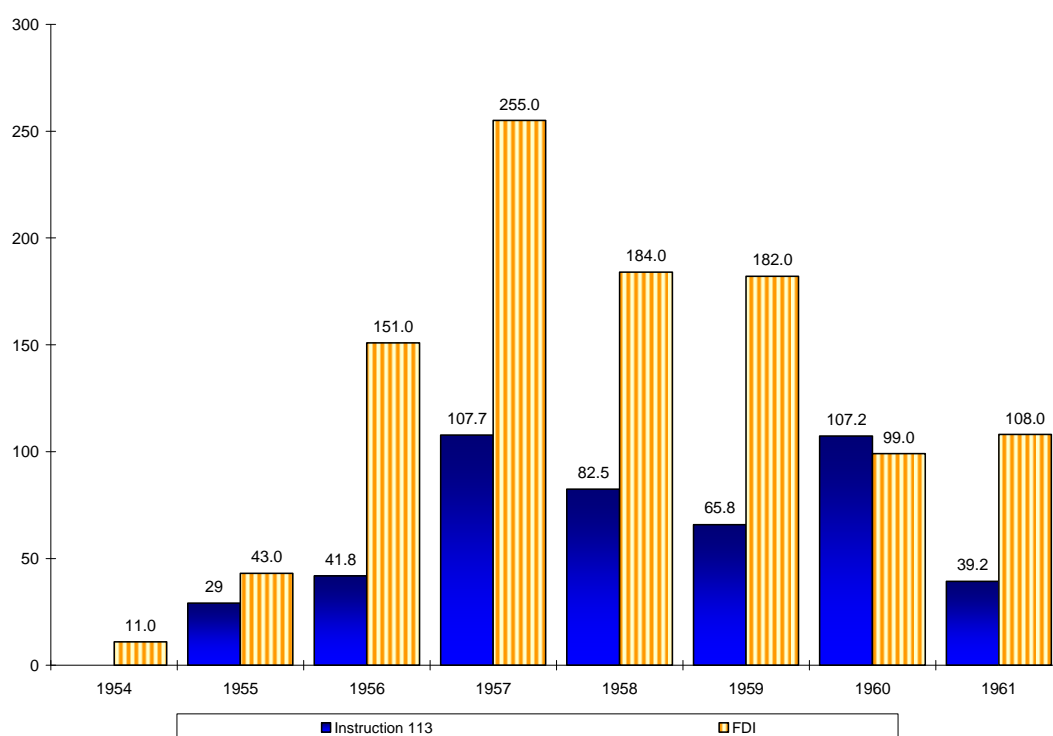
authorization to Sumoc to import via Instruction 113. With this authorization they could then purchase the capital goods abroad and bring them to any Brazilian port to be registered as FDI (Sochawesky, 1980, p. 90). Between 1955 and 1960, there were 1,545 authorizations issued under Instruction 113, representing US\$497 million, which was about half of all FDI during the period (Caputo, 2007, p. 5; IBGE, 1955-1960).

The strategy is largely seen by the literature as an important stimulus to the import of capital goods and the promotion of advanced industries in the second half of the 1950s (Figueiredo Filho, 2005, p. 163; Caputo, 2007, p. 105). In fact, the implicit idea of Instruction 113 was exactly to stimulate new sectors for industrialization, particularly the automotive industry (Bulhoes, 1990, p. 110; Malan, 1974, p. 5). Hence, 38% of the total FDI during the years 1955-1963 went to the automotive sector, although other important industries such as chemicals (13%) and machinery (16%) also received an important share of the inflows (Caputo 2007, p. 46). Under the Target Plan, the Kubitschek administration created the Automotive Industry Executive Group (Grupo Executivo da Industria Automobilística, GEIA), which was composed of government officials and private sector executives, to plan, study, and approve benefits to develop the automotive sector (Kertenetzky, 2016, p. 5). Chapter 8 will focus on the analysis of Instruction 113 from the political economy perspective and as a channel to subsidize industrialization.

From a macroeconomic perspective, however, Instruction 113 contributed to the decline of the auction system as a mechanism to stabilize the balance of payments. By classifying imports – even if only capital goods – as positive FDI inflows in the balance of payments, the government was ‘cheating’ about the amount of foreign exchange that was available. In the restricted capital account

system, large sums of FDI could have been the solution to allow imports to rise in the MER system without misbalancing foreign accounts. But since a major part of this 'FDI' was imports via Instruction 113, they were in reality illiquid, and could not be used as foreign exchange to be distributed through the MER system.

Figure 5.4 – FDI and Instruction 113, 1954-1961 (US\$ Million)

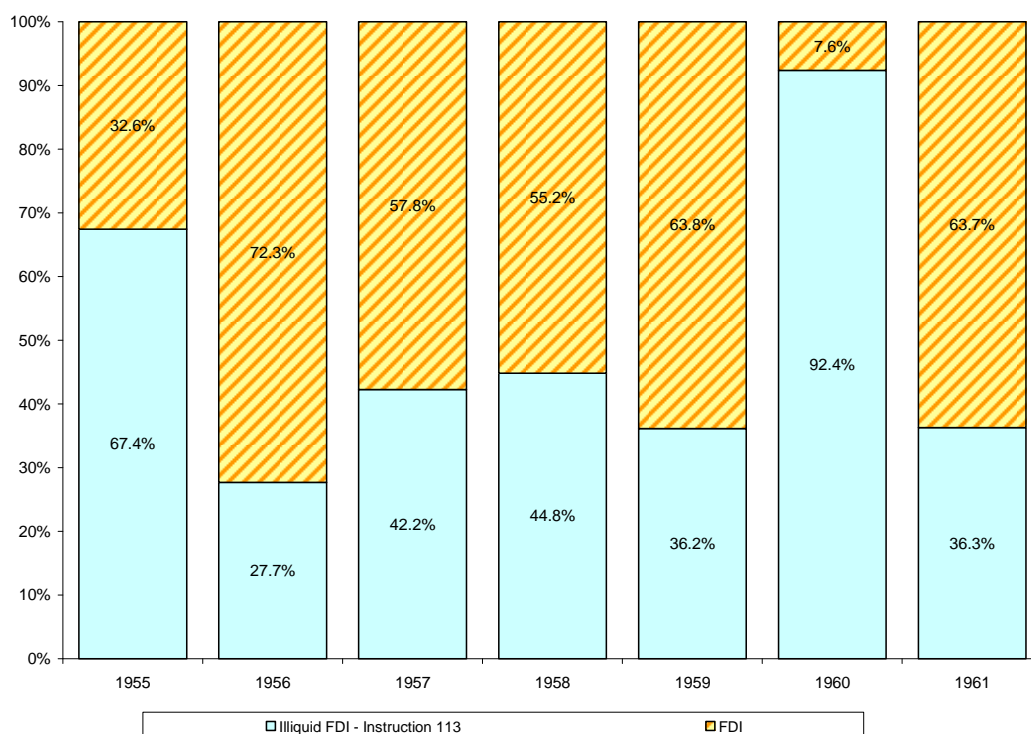


Source: FDI data compiled by IBGE (2017), with the original data from Sumoc; Instruction 113 data from Caputo (2007, p. 54).

Figure 5.4 shows the evolution of both FDI and Instruction 113 flows after 1955. It shows how both surged after 1955. FDI was practically zero in the first half of the 1950s, which was a disappointment for Sumoc officials in the Dutra administration, so they started adjusting the balance of payments through restrictions on imports. With the major incentives from Instruction 113, FDI picked up from 1955 onwards, however, peaking at US\$250 million dollars in

1957. FDI flows, on average, represented 20% of the level of imports, which averaged US\$1.2 billion dollars. In theory, the inflows of FDI could thus have financed one fifth of imports, reducing the foreign exchange constraint and reinforcing the MER system.

Figure 5.5 - Liquid and 'Illiquid' FDI, 1955-1961 (US\$ Million)



Source: Own construction. FDI data compiled by IBGE (2017), with the original data from Sumoc. Instruction 113 data from Caputo (2007, p. 54). See Appendix 4 for the methodology.

But Figure 5.5 shows this was a mirage by presenting the distribution of liquid versus 'illiquid' Instruction 113 FDI between 1955 and 1961. On average, Instruction 113 FDI accounted for 49.6% of the FDI flows. These imports did not compete with the rest of the economy for the use of the limited supply of foreign exchange, as foreign companies used external funding to buy capital goods and then import them, which was a useful financing procedure for a country that did not have access to foreign debt markets in that period (Caputo,

2007, p. 12). Nonetheless, it meant that only half of the FDI in the period was available to support the financing of other imports via the MER system.

As FDI was on average US\$150 million per year, only US\$75 million could be used to fund additional imports. When these figures are compared to the level of imports, it becomes clear that FDI was not enough to finance the surge of imports outside the MER system. Imports rose by almost US\$300 million per year between 1955 and 1961, so the additional US\$75 million of liquid FDI was not enough to pay for that (IBGE, 1955-1961). If the US\$75 million of illiquid FDI is counted as imports, the surge in imports reached almost US\$400 million per year, against an annual decline of only US\$80 million of export receipts over the same period (IBGE, 1955-1961). There is no balance of payments that can remain stable under these conditions. Moreover, it is worth remembering the increase in amortizations that resulted from these FDI flows in the later part of the 1950s. They represented on average US\$280 million between 1956 and 1960 (IBGE, 1956-1960). This means that Instruction 113 produced a system in which foreign companies brought imports instead of foreign exchange, and then took away foreign exchange to repay debts and profit. The illiquid FDI were not only an opportunity cost on the foreign exchange that could have been used to finance the MER system, but eventually had a significant balance of payments cost via the outflows.

5.3 1956-1958: Reform and Decay of the Auction System

The Kubitschek administration made other important changes to the MER system. As already noticed, his choices for the economic team were clearly a return to developmentalist ideas, but without the restrictions placed on Vargas by the traditional elite. The new government's developmentalist policies

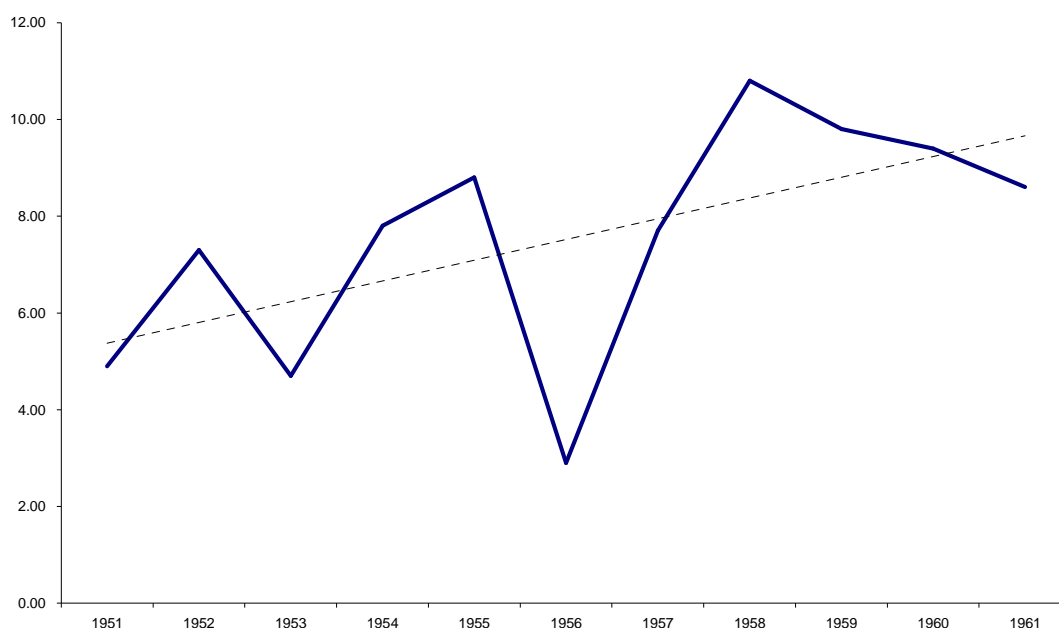
sought to make a stronger effort to accelerate industrialization, but resulted in a much less responsible macroeconomic framework than during the first half of the 1950s. Kubitschek won the election against Juarez Tavora, a conservative candidate from UDN who defended macroeconomic equilibrium and the continuation of the liberal policies adopted under Café Filho. Interestingly, some authors attribute Kubitschek's easy victory to exactly the tightening of the money supply under Café Filho, which brought inflation down and the economy back to a slower growth rate in 1955 (Bulhoes, 1990, p. 114; Skidmore, 1982, p. 203). But as discussed before in Chapter 3, Brazilian society was changing and the new urban and industrial groups were keen on a more developmentalist and pro-growth strategy, so Kubitschek's victory was not a surprise. Kubitschek had many difficulties before assuming power due to Brazil's extreme social divisions. A strong ideological conflict emerged between those who supported the result of the elections and those who opposed it because of the presence of João Goulart, Kubitschek's Vice President, who was known for his relationship to the Communist Party, even though he was from the PTB party (Bueno & Faro, 2004). Kubitschek was only able to take office after General Lott, a nonpartisan public figure from a divided military, stood by the constitution and endorsed his victory (Skidmore, 1982, p. 194).

After winning this initial battle, the new president was inclined to defend his broader political base of industrialists and urban classes. The new Minister of Finance was Jose Maria Whitaker, a banker from São Paulo closely linked to the industrialist class, who Bulhoes (1990, p. 114) describes as someone ready to 'throw money to the air as much as possible'. His tone shows how the liberal group was worried about the possible shift of policies during the Kubistheck years.

Indeed, the return of the developmentalist group is an important part of the explanation of why the auction system started to slowly lose its capacity to stabilize the balance of payments and to then finally collapse in 1961. This is particularly true after 1957, when the government decided to make an important reform to the system. As previously discussed, the first system seems to have worked well until 1957, stabilizing the balance of payments. With Instruction 113 and the rapid increase in FDI inflows after 1955, moreover, the MER system had an increasing availability of foreign exchange to be distributed through the auction system. On top of this, the decline seen in coffee prices in 1953-1957 stabilized between 1957 and 1961 (Figure 3.1). These conditions suggested that the MER regime could continue being effective at keeping the balance of payments stable.

But the new administration wanted to further develop the industrial sector and had plans for exceptionally high growth rates during a small period of time. Kubitschek slogan was 'fifty years in five', and his Target Plan was designed to produce exceptional growth rates with a combination of investments in basic industries, infrastructure, and advanced durable goods. The new administration was mostly concerned with providing a new level of industrial development in Brazil, building both infrastructure and capital goods industries in order to fully vertically integrate the industrial chain, as was seen in Chapter 3. Figure 5.6 shows the rising GDP growth rate in the later part of the decade after a significant decline following Café Filho's monetary tightening in 1955-1956.

Figure 5.6 - GDP (Annual % Growth)



Source: Own construction from original data from IBGE's *Anuários Estatísticos* IBGE (1951-1961).

To attain this level of growth, an important change took place to the MER system in 1957. In theory, it had two basic premises. Firstly, it was believed that the MER system did not need to be as restrictive because foreign exchange inflows had increased significantly with the surge in FDI after Instruction 113 (Sochczewski, 1980, p. 92). Officials seemed comfortable with the idea that the new cycle of foreign investment in Brazil would last for a long time, so there was no need to further restrict imports. The second premise was to create further differentiation between sectors, as the auction system only provided the exact same protection for a large group of products included in each of the five categories and there were no ad valorem tariffs (Sochczewski, 1980, p. 93)

In fact, a reform of the protectionist system, with the reintroduction of ad valorem tariffs, had been discussed since the end of Vargas' administration in 1954 (Silva, 2008, p. 12). Osvaldo Aranha, the same finance minister who had

removed the ad valorem taxes to increase revenues with specific tariffs in 1934, was the main name behind the new change to the system during the Vargas administration. After Vargas' suicide and the shift towards more orthodox policies under Café Filho, however, this discussion was put aside and only returned to the spotlight when Kubitschek came to power. Colistete (2006) shows that the pressure for ad valorem tariffs from the organized industrialists in São Paulo was extremely high, as it had long been one of their main demands. From the industrialists' perspective, ad valorem tariffs were a superior form of protection compared to the MER because they could restrict imports of final goods, but would not force them to join the auctions to import inputs.

The reform of the auction system essentially had two main points. Firstly, the reduction from five categories to three (four if the free market is also counted): (1) a preferential exchange rate, which was basically for government imports at the official rates; followed by (2) a special and (3) a general category, which were the combination of the previous five categories into two larger ones. This simplified the system and reduced the differentiation among sectors, although it did not necessarily mean a reduction in the restriction of imports, which still had to go through the auctions (Sochczewski, 1980, p. 91). In Sumoc's minutes there is no explanation for the reduction from five to three categories. In fact, there is no description of debates between Sumoc officials about these changes in the system, only a reference that, following the new 1957 Tariffs Law, Sumoc decided to adjust the exchange rate system to the new framework (Sumoc Minutes 661, 09/08/1957). This reflects the smaller role of Sumoc in policymaking during the Kubitschek years, which was discussed in Chapter 4.

The second change was the reintroduction of ad valorem tariffs for each group of products, ranging from 0% to 150% and aimed at substituting for the implicit protection previously given by the MER system. A new body called the Customs Policy Council (*Conselho de Política Anfandegária, CPA*) was made responsible for determining the level of ad valorem tariffs for each product and collecting the revenues, which rapidly became the new main source of revenue for the government, replacing the auctions tax (Sochaczewski, 1980, p. 102; Malan, 1974, p. 5). Overall, the main idea behind the reform was to simplify the auction system and further stimulate import substitution through additional differentiation. Specifically, it was intended to accelerate the substitution of capital goods and reduce the previous emphasis on the substitution of consumer goods (Sochaczewski, 1980, p. 103).

On top of the new ad valorem taxes, a complex system of exemptions from the MER system was also gradually implemented. These were determined ad hoc by the CPA, which granted benefits to some sectors depending on their requests. The enforcement of these exemptions was very flexible and varied according to the political influence of the particular sector (Bergsman, 1970, p. 33). They were mainly granted to companies that demonstrated they were importing essential inputs that did not have internal substitutes. Originally, tariffs were introduced to replicate the protection previously given by the MER system, and most sectors received the same amount of protection they had been getting from the exchange rates, but these were soon changed in order to achieve the new objective of creating more differentiation (Sochaczewski, 1980, p. 104).

While the new system simplified and created further differentiation among sectors, in theory it did not change the major goal of the first MER system,

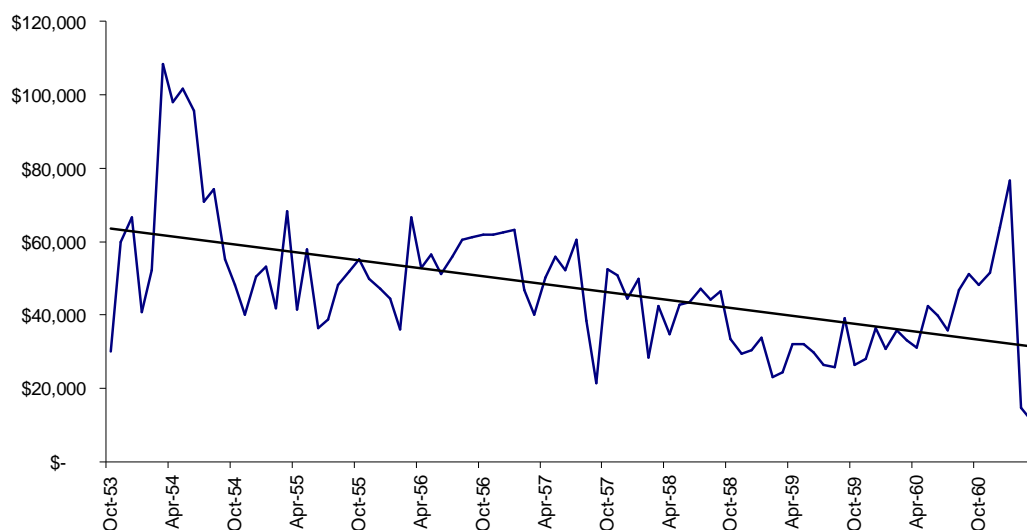
which was to allow the auctions mechanism to adjust the exchange rates to maintain stability in the balance of payments. This is why the literature on these changes generally sees them as a continuation of Vargas' policies, with the addition of further import substitution and the greater openness to foreign investments via Instruction 113. For most authors, the second phase of the MER system was just a step further in import substitution for modern and advanced sectors (Bergsman, 1970; Baer, 1995; Sochaczewski, 1980; Vianna, 1987; Figueiredo Filho, 2005; Lago, 1982; Malan, 1974).

But in light of the new primary data, this interpretation can be challenged, as the new system essentially dismantled the original MER framework by removing imports from the auction system. The first evidence of this is simply the commitment from authorities to using the MER auctions in the second phase. As shown, there were two different ways in which the private sector and the government could import outside the auction system. The first and most simple was the government prerogative to use part of the available foreign exchange for its own imports, at the official exchange rate and without going through the auctions. The second was the exemptions authorized to the private sector (Sochzewsky, 1980, p. 91). These exemptions started to appear in Sumoc's minutes between 1953 and 1954, and were created by Article XVI of Instruction 70 (see Appendix 2), which gave Sumoc the privilege to authorize imports outside of the auctions for capital or essential goods at its own discretion. The new evidence presented below shows that these exemptions were very small in 1953 and 1954: on average only 5% of foreign exchange, as 60-65% was allocated to the auctions and 30% to the government (Figure 5.2). Caputo (2007, p. 40) argues, however, that these exemptions were in practice an anticipation of Instruction 113, which from 1955 made the imports of capital

goods outside the system a more formal procedure, allowing them to also be classified as FDI, rather than imports. After 1957, the level of exemptions then increased significantly, not only because of Instruction 113, but mostly as a consequence of the 1957 tariffs reform, which opened the door for discretionary exemptions authorized by the CPA (Sochzewsky, 1980, p. 92).

While these exemptions already existed in theory in 1953, they were in practice largely only used after 1957 and once the formal procedure to authorize exemptions by the CPA was established. Before 1955, Sumoc was committed to forcing most of the private imports to go through the auctions, allowing the exchange rates to adjust correctly for each category. The centralization of foreign exchange distribution allowed officials to have a strict control of the level of imports, in order to guarantee balance of payments stability. After 1956, however, this was completely changed with the rise in imports outside the auctions.

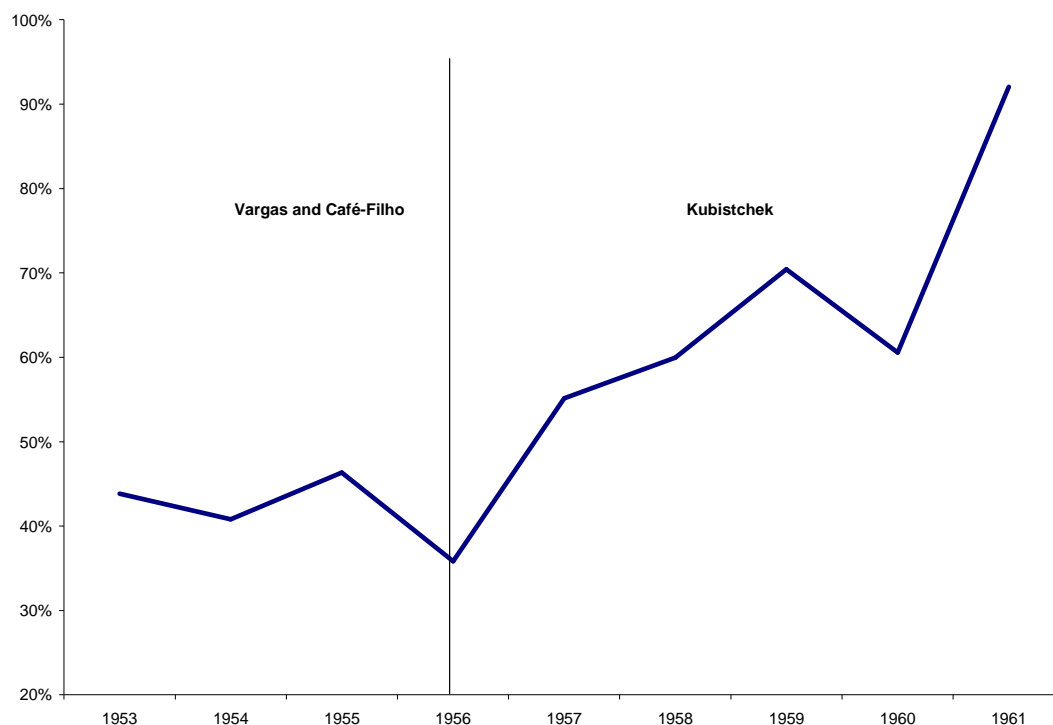
Figure 5.7 - Auctioned Foreign Exchange, 1953-1960 (US\$ million)



Source: Own construction from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

Figure 5.7 shows the amount of foreign exchange auctioned through the MER system between 1953 and 1961. The amount of auctioned currency declined over time, with its highest level in the first phase of the auction system. At first, this could seem paradoxical, since it was in the first phase after the 1952 balance of payments crisis that the government was more under pressure to contain imports. This was the period when Sumoc worked to rebuild the country's international reserves under major foreign exchange constraints. After 1956, the government's foreign accounts improved significantly with the large amount of FDI coming via Instruction 113: on average, about US\$150 million per year between 1955 and 1960 (IBGE, 1955-1960). So the simple explanation of why the government reduced the amount of currency being offered in the MER system does not have to do with the availability of foreign exchange, but with the willingness to use the system as the means to achieve equilibrium in the balance of payments.

Figure 5.8 – Imports Outside the Auction System, 1953-1961



Source: Own construction from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Import data from IBGE's *Anuários Estatísticos* (1953-1961). See Appendix 4 for the methodology.

Figure 5.8 shows the percentage of imports that were made outside the auction system, including both government imports and the exemptions conceded to the private sector. Unfortunately, the data for each component separately is unavailable, but the overall level of imports outside the auctions was calculated by simply subtracting the amount of foreign exchange auctioned in the MER system from total imports.

Figure 5.8 shows that, until 1956, around 30-40% of imports remained outside the system, which Sochazweski (1980, p. 91) describes as the standard level for the government's own imports. But after 1956 the situation changed

completely, with a significant increase in imports outside the auctions to 60-70%. The MER system gradually started to receive less foreign exchange and by the end of the 1960s the auctions were almost non-operational. When the system was finally shut down in 1961, 90% of foreign exchange was being allocated outside the auctions.

By comparing the auctioned foreign exchange with the evolution of exports and imports, it can be seen that the decline of the auction system was really due to an unwillingness to use it. There was a decline in export receipts of about US\$150 million per year on average between 1955 and 1961 (IBGE, 1955-1961), largely due to the fall of coffee prices. The auctioned foreign exchange declined even more rapidly, however, by US\$264 million per year on average, even though there was a major rise in imports of US\$300 million per year (IBGE, 1955-1961). Sumoc was thus removing more foreign exchange from the system than the reduction in exports receipts, while at the same time allowing imports to rise. The result was a deterioration in the trade balance and the balance of payments.

While it is not possible to know what would have happened with the balance of payments if the same commitment to the MER system had been maintained during the second phase, the simple math of flows suggest that the system could have been maintained. If imports of goods had remained at the same level of US\$1.1 million as during the system's first phase, the average export receipts of US\$1.25 million would still have provided enough foreign exchange to pay for the imports during the second phase (IBGE, 1953-1960). This would have been enough to stabilize the trade balance and the balance of payments. This counterfactual is somewhat extreme and probably unrealistic as it is difficult to imagine imports remaining stable in a period of very strong

industrial growth, such as the second half of the 1950s. Yet, the US\$1.25 million average export receipts would also have been enough to allow a rise of 13.6% of average imports levels from their average of US\$1.1 million during the first period. This means that there was space for a rise in imports following the acceleration in economic growth even with the declining levels of export receipts. The MER system stopped working, then, because authorities reduced their use of it. By removing foreign exchange from the auctions, they permitted a massive surge in imports above what foreign exchange inflows allowed. This evidence from the allocation of foreign exchange to the MER system suggests that during its later phase it differed little in practice from the previous import licensing system that had been in place between 1947 and 1953, in which the discretionary power of Banco do Brasil to authorize imports resulted in no real control over the process.

5.4 1958-1961: Breaking with the IMF and Collapse

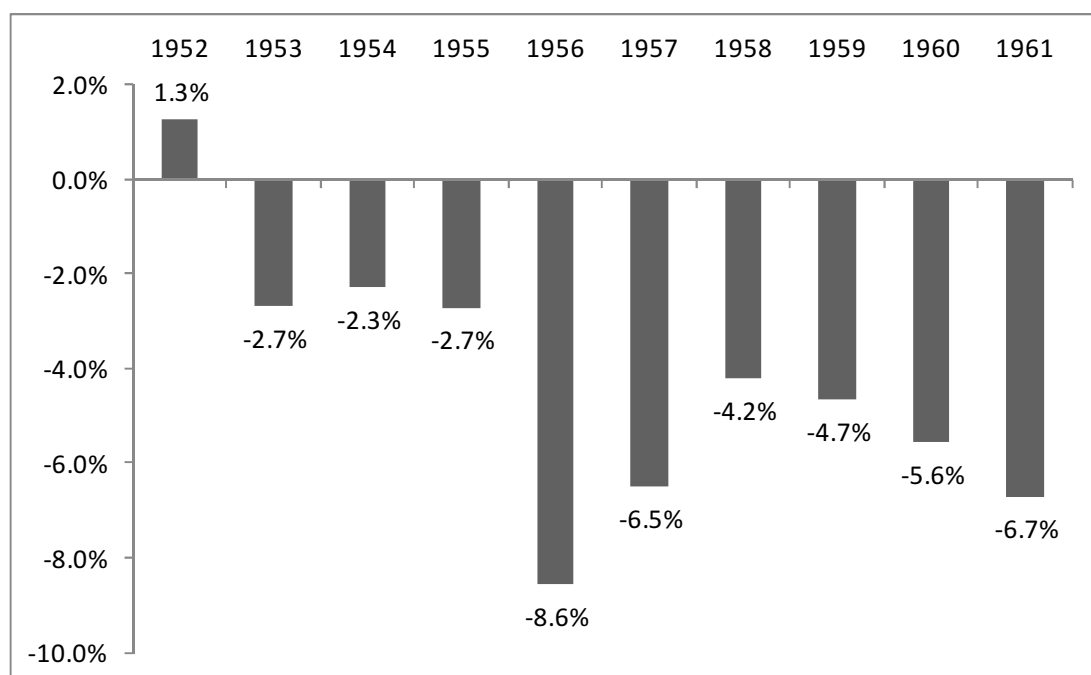
The decay of the system was also a consequence of the Kubitschek administration's expansionary fiscal and monetary policies, as it sought to deliver its ambitious investment plan, including the construction of the country's new capital. The increased demand for additional imports, both from the government and the private sector, drove up imports outside the auctions.

Kubitschek's expansionist policies saw a dramatic increase in the money supply. As shown in Figure 4.6, the money supply, although increasing, had remained under control during Vargas' administration, growing at a peak of around 18% in 1952, although on average it grew at 16%, which was a similar level as the 15.9% average rate of inflation (IBGE, 1951-1954). Under the Dutra and Café Filho administrations, when the liberal leadership of Sumoc adopted

a restrictive monetary stance, the money supply was even more tightly controlled. During the second half of the decade, by contrast, the annual growth rate of the monetary supply increased to the enormous rate of 60% in 1958 (IBGE, 1958).

This monetary financing was essentially used to cover the growing budget gaps created by rising fiscal expenditures. Although FDI increased significantly between 1956 and 1961, about half of the funds were illiquid and in the form of direct capital goods imports under Instruction 113. Out of the US\$871 million of FDI that arrived in Brazil during those years, US\$418 million were imports (calculated from Caputo, 2007, p. 54), which while classified as capital flows in the balance of payments, could not be used as foreign exchange in the MER system to fund other imports. Most of the financing for the administration's direct infrastructure projects under the Target Plan, as well as for the construction of the new capital of the country, Brasilia, came from printing money to cover these rising expenditures and the negative budget balances (Klein and Luna, 2014, p. 160). Figure 5.9 shows the rise in the budget deficits as a percentage of GDP during the MER system.

Figure 5.9 – Budget Balance, 1952-1961 (% of GDP)



Source: Own construction from data compiled by Sochaczwesky (1980, p. 127). Original data from the Balanços Geral da União, various years.

Between 1956 and 1961, government expenditure increased by four points of GDP, from 14% to 18%, which explains the increase in the budget balance from an average of -1.6% of GDP between 1952 and 1955, to -5.9% between 1956 and 1960. Two percentage points of this rise were due to the increases in direct government investments. It is no surprise, then, that money printing increased significantly to finance this deficit during the second part of the decade. As a result, inflation increased, increasing pressure for depreciation during the second MER system.

This deterioration of the basic macroeconomic position resulted in strong pressures on both imports and inflation. Inflation rose quickly to about 40% in 1961, as Figure 4.4 shows. At the same time, the lighter restrictions of the new MER system led to a major rise in imports. Imports of goods and services grew by US\$345 million between 1955 and 1960, which represented a 25% increase

(IBGE, 1955-1960). The result of this process was the rapid deterioration of the balance of payments, despite the large amounts of FDI inflows and greater currency availability of that period. The balance of payments deteriorated to a deficit of almost US\$500 million dollars by 1960, forcing Sumoc to cash out all the available reserves, which had been built up during the good years of 1953-1957 (Klein & Luna, 2015, p. 87). Thanks to the policy changes, especially the rise of imports outside the auctions and the lack of control over monetary policy, Brazil returned to the same condition as the pre-auction system.

Between 1956 and 1959, the current account deteriorated from being balanced to a deficit of US\$100 million, while the overall balance of payments deficit increased to US\$200 million (IBGE, 1956-1959). The period of 1957-1959 is the only time when the balance of payments deficit increased faster than the current account deficit, which is explained by the deterioration of the capital account, as it posted deficits of US\$100-150 million in those years, despite the large FDI inflows from Instruction 113, which averaged US\$150 million (IBGE, 1957-1960; Caputo, 2007, p. 54). The deficit in the capital account is explained by a massive increase in the account of amortizations, which averaged almost US\$280 million between 1957 and 1960 (IBGE, 1957-1960). These amortizations were essentially profit remittances from the multinational companies that invested via Instruction 113 to pay for their original financing. In the balance of payments, inflows were counted as FDI, while the profits from the investments were accounted as amortizations. This highlights two important problems in the Kubitschek years. First, companies were sending money back quickly, either because they saw the deterioration of macroeconomic fundamentals or did not plan to reinvest the funds. The flows from Instruction 113 were shorted lived and quickly resulted in negative deficits in the capital account. Second,

these outflows contributed to the overall collapse of the balance of payments at the end of the period. Even a more stable current account would have not been able to stabilize the balance of payments, given the increase in these amortizations.

To make the situation worse, there was also another fall in international coffee prices after a peak in 1953, declining further after 1956 (Figure 3.1), even if the terms of trade did not deteriorate significantly and remained at relatively high levels until the end of the decade. Coffee prices fell by 29% between 1957 and 1959, while the terms of trade declined 8% over the same period (Abreu, 2009, p. 405). This decline meant an average decline of US\$150 million in export revenues between 1956 and 1960 (equivalent to about 10% of exports), which accelerated the deterioration of the current account (IBGE, 1957-1959). The decline in coffee prices was the result of a significant global overproduction of the product at the end of the 1950s. For most of the 1940s and early 1950s, Brazil's coffee production was around 20 million bags of coffee, but the increase in global commodity prices during the Korean War until 1953 stimulated the local market to expand production in the second half of the decade. By 1959, local production of coffee reached 44 million bags of coffee, which was above global demand of 42 million and with a total global production of 79 million bags. Brazil by itself could thus fulfil all of the global demand for coffee (Klein & Luna, 2014, p. 174). In an effort to contain the falling prices and the loss of export receipts in the context of rising inflation and imports, the Kubitschek administration organized the stockpiling of coffee from the private sector to try to maintain prices. In 1958 and 1959, about one third of local production was stored across the country, accounting for 69 million bags by the end of the decade, though this had almost no effect on

global coffee prices (Klein & Luna, 2014, p. 175). The Kubitschek administration's attempt to organize and prevent the decline in coffee prices is notable because the traditional landowning elite was undergoing an important decline in its political influence, as discussed in Chapter 3. Yet, coffee still represented 60% of exports, making it a major source of foreign exchange, which explains the pragmatism of the government's attempt to maintain prices, even if it was unsuccessful.

The decline in coffee prices was not, however, the main cause of the deterioration in the balance of payments, despite most of the traditional literature blaming the decline for the balance of payments crisis and bringing about the end of the MER regime (Bergsman, 1970; Baer, 1995; Sochaczweski, 1980; Vianna, 1987; Figueiredo Filho, 2005; Lago, 1982; Malan, 1974). The trade data show that the decline in export receipts of US\$150 million per year was too small to destabilize the balance of payments. The problem was the strong increase in imports of almost US\$300 million dollars annually between 1956 and 1960, produced by the increase in imports outside the auctions (IBGE, 1956-1960). These numbers do not include the imports in the form of FDI via Instruction 113, which would increase this figure on average to US\$400 million (Caputo, 2007, p. 54). If imports remained at the same levels as when the MER system was effectively stabilizing current account flows during 1953 to 1956 (about US\$1.1 billion per year on average), the exports receipts that averaged US\$1.25 billion during the second half of the decade would have been more than enough to stabilize the current account and the balance of payments. In fact, even in the context of declining coffee prices, the export receipts would have been enough to continuously allow a small current account surplus or an increase in imports. The US\$150 million annual decline in coffee exports was

not enough to produce a collapse in the first MER system. The reduction of import restrictions, which created a surge of imports of more than 25% in the second half of the decade, was thus the main cause of the deterioration in the balance of payments.

Despite largely being a result of its policies, the government was not unaware of the deterioration in macroeconomic conditions. Worried about both rising inflation and particularly the widening balance of payments deficit, Kubitschek tried to stabilize the economy. In 1958 he appointed Lucas Lopes as Finance Minister. Together with the President of the National Bank for Economic Development (Banco Nacional de Desenvolvimento Econômico, BNDE), Roberto Campos, Lopes elaborated a stabilization program y and started to negotiate with the IMF for a rescue package to provide the country with foreign exchange liquidity.

In 1958, the administration announced the Program of Monetary Stabilization (Programa de Estabilizaco Monetaria, PEM), which proposed a strong control over the fiscal budget and money supply to both prevent new money from being used to finance the budget and credit expansion from Banco do Brasil. In the same year, Lopes met with an IMF delegation and agreed a stand-by rescue package. The IMF straight away gave US\$37.5 million for immediate use, which was just a sign of its commitment, given the small size of the funds. Attached to the loan was a list of conditions that needed to be accepted in order for the rest of the US\$300 million requested to be gradually released in the following years (Almeida, 2015, p. 480). As discussed in Chapter 3, access to IMF funding with conditionalities was an important reason for Latin American countries to abandon their MER regimes. Whereas the IMF had originally showed a tolerant attitude towards these MER regimes, by 1958 it was already

highly opposed to them, having pressured for their removal in many other countries from the region (Bolivia, Chile, Paraguay, Argentina, and Uruguay). Brazil was the only one left (Konig, 1968). The conditions included a significant cut in government spending (Cr\$135 billion to be removed from the Target Plan), for the money supply to not increase by more than 5% per year, and the end of the MER regime to allow the convergence of the special rates with the free market exchange rate (Almeida, 2015, p. 490).

Although initially accepted by the government, the administration tried to negotiate the terms with the IMF slowly, in order to give it time to search for other sources of foreign exchange. Nevertheless, there were no alternatives and the IMF remained highly intransigent on its conditions. At the same time, Kubitschek was under more pressure from industrialists and his political base to not accept the terms and stop the monetary stabilization program (Skidmore, 1982, p. 225). Figure 5.9 shows that, at least initially, the program was being fully implemented, with growth of the monetary supply falling from 35% in 1957 to 15% in 1958. The same happened with inflation, which declined from 21% in 1957 to 16.1% in 1958 and 14.8% in 1959 (see Figure 4.4).

In June 1959, one year after the program started and from Lopes having signed the stand-by agreement with the IMF, Kubitschek could no longer accept it, however, the lack of political support for those measures from his political base of industrialists and the PTB and PSD, which were pressuring him to return to the policies of the first years of his mandate (Skidmore, 1982, p. 226). He therefore broke the negotiations with the IMF and decided to reverse the tightening of monetary and fiscal policies (Lima, 2008). This decision can be seen as his ultimate political choice for developmentalism and was the death sentence for the second phase of the MER system (Malan, 1974, p. 6). Between

1959 and 1961, the annual money supply growth rate increased from 15% to 60%, inflation accelerated from 15% to 40%, and the balance of payments deficit widened from US\$300 to US\$500 million (IBGE, 1959-1960). Kubitschek left power at the end of 1960 with the country's macroeconomic conditions on the verge of collapse.

Kubitschek left power at the end of his mandate and Janio Quadros assumed power after winning the elections by promising to restore macroeconomic equilibrium and fight inflation, with the support of the liberal group, including Bulhões. Quadros did not hesitate to publically condemn the terrible financial situation that he inherited from the previous administration and announced that painful remedies would be necessary (Malan, 1974, p. 7). With inflation around 40% by 1960, his conservative view had a stronger influence in the electorate this time than in the early part of the 1950s. Quadros appointed Clemente Mariani, the President of Banco do Brasil during the presidency of Café Filho, as Minister of Finance, and Bulhões was once again made the Executive Director of Sumoc. The new economic strategy was very similar to what had been done during the short mandate of Café Filho: contain monetary and fiscal expansion (Lago, 1982, p. 168).

This time the economic leadership decided to end the MER regime, which had in practice been unused, with almost 90% of imports taking place outside of the auctions in 1960. The MER system was already over by the time the decision to finish it was taken (Lago, 1982, 178). According to Bulhões (1990, p. 131), who was behind the decision, there was no other option than letting the currency depreciate, then fighting its inflationary impacts with monetary control. A gradual depreciation was not an option or the economy would naturally migrate towards another balance of payments crisis. The MER system was

therefore abolished in 1961 under Instruction 204 of Sumoc, ending nine years of MER experience and allowing a 100% depreciation of the official rate. At the same time, the new administration went to the IMF to re-open negotiations and ask for funds to ease the balance of payments difficulties (Lago, 1982, p. 179). By mid-1961, a new deal of US\$650 million was reached, with the country obliged to fulfill all of the conditions proposed in 1958.

After managing to control foreign exchange difficulties between 1953 and 1956 with a well-balanced economy, the 1957 reform and the relaxation of import controls combined with the increasingly incoherent macroeconomic policies of the Kubitschek administration forced Brazil to return to its starting point in 1952, bringing about the end of the MER system.

5.5 Chapter Conclusions

This chapter has analyzed the rise and decay of the MER system. The evidence shows that the first MER system of 1953-1957 successfully adjusted the balance of payments, while at the same time supporting macroeconomic conditions. The system's auction mechanism allowed the exchange rate to endogenously depreciate, correcting for a long period of overvaluation. The decay and eventual collapse followed many changes introduced in 1957, particularly the exemptions to the system, which allowed foreign exchange to be distributed outside of the auctions. Combined with rising pressures from expansionary fiscal and monetary policy, this undermined the balance of payments toward the end of the decade, resulting in the collapse of the MER system, which forced a one-off devaluation of the official exchange rate and recourse to the IMF. Chapter 6 further explores the reasons behind the success of the first

phase, and how officials managed to reach macroeconomic equilibrium through the auction system.

6. Guiding the Invisible Hand: Market Equilibrium and Multiple Exchange Rates¹⁵

Chapter 5 analyzed the evolution of the two phases of MER system. It showed that between 1953 and 1957 the first MER system stabilized the balance of payments through an effective system of auctions of foreign exchange, which combined with more responsible fiscal and monetary policies to support a stable macroeconomic environment. The system decayed after 1956 when the Kubitschek administration made considerable changes to its structure, expanding imports outside of the auctions, which combined with a major expansion of monetary and fiscal policy to put pressure on both imports and inflation, leading to the system's collapse.

This interpretation of the rise and decline of the MER system differs considerably from the exiting literature on the MER experiment. It not only identifies the two phases and their distinct designs, but also explains the decline and collapse as not being primarily related to the fall of coffee prices in the second half of the decade, but due to the dismantling of the system because of the rise in imports outside the auctions and unsustainable macroeconomic policies, which negatively impacted the balance of payments.

While the last chapter elaborates further on this interpretation of the peak and decline of the MER system, it remains to explain the effectiveness of the system during its first phase. As shown, the system only worked when officials concentrated foreign exchange in the auctions. When imports outside the

¹⁵ The title echoes Love and Nils (1988).

auctions increased, the system gradually declined in effectiveness. But while allocating foreign exchange to the system was a necessary condition for it to perform well, it is not sufficient to explain how policymakers were able to reach market equilibrium under a centralized system of exchange rate auctions.

This chapter explains the macroeconomic effectiveness of the first phase of the MER system. The new evidence presented will demonstrate the mechanics behind the MER system during 1953-1957 and provide a new explanation for its success. The chapter is based on the collection of a new database of the MER system that includes the monthly quantities of foreign exchange allocated to the MER categories and the prices of the various exchange rates of that period. This information was collected from the annual reports of Banco do Brasil, the operator of the system, and the monthly bulletins of Sumoc, the regulatory body responsible for the MER experiment.

6.1 The Effectiveness of MER Auctions

The hypothesis is that the primary reason for the effectiveness of the first MER system is the combination of authorities using minimum prices to restrict foreign exchange in the auctions, combined with a responsive approach to market demand from the different categories across auctions houses. The first system's most impressive feature was how the allocation to the different categories across the exchange houses resulted in a stable balance of payments, impeding the emergence of a black market for foreign exchange, while at the same time being able to limit the availability of foreign exchange sufficiently to stabilize the balance of payments and allow exchange rates to gradually depreciate. This was only possible if the distribution of foreign exchange to the different categories was done so as to guarantee that a minimum level of

foreign exchange was available to all sectors, so that importers of those sectors would not go to the black market, while at the same time restricting foreign exchange to the economy as a whole to stabilize the balance of payments. And the way to do this was by using the two instruments officials had at their hands to control the auctions process: the minimum prices and the supply of foreign exchange to the different auctions houses and categories. The description of contemporary sources about the design of the first system suggests these two instruments were key to the MER auctions. During the building of the system, officials believed it would be more efficient if there were a large number of exchange houses, allowing foreign exchange to reach different parts of the country even if in small quantities, since São Paulo and Rio de Janeiro received around 80% of the total foreign exchange. Initially, 12 auction houses were opened, but they were increased to 20 in time to allow minor quantities of foreign exchange to reach different parts of the country (Huddle, 1964, p. 95; Lago, 1982, p. 95).

This created the benefit of allowing foreign exchange to reach demand across regions, helping to contain the emergence of a black market. But it also resulted in disequilibrium, since different exchange rates could emerge in the same categories across different exchange houses. There was no formal link between auctions at different places and no mechanism to guarantee the same price equilibrium. Minimum prices based on the auction results of the previous week were introduced to correct for this problem in all auction houses. With this system, the minimum prices guaranteed that auctions in different parts of the country would result in similar exchange rates for each category across the country. While this mechanism could force homogeneity, it also meant that not all the foreign exchange allocated to a specific auction house was sold, as some

buyers would not purchase at those minimum price levels. These amounts were brought back to the central office of Banco do Brasil to be supplied in the next round of auctions at new locations or categories in the following week (Vianna, 1987, p. 104; Kafka, 1956)

This design suggests a system in which authorities were imposing minimum prices to guarantee homogenous exchange rates and also to force some buyers out of the system, restricting the scarce foreign exchange to achieve the goal of reducing imports. Yet at the same time they made sure that there was sufficient liquidity across sectors and locations, so that the buyers forced out by the minimum prices did not search for currency in the black market and knew that they would find liquidity in the next auction round. This suggests that authorities had to be realistic about the sectoral distribution of foreign exchange and be able to follow the fluctuations in demand for each category to provide some liquidity for each market, even if they had the primary objective of restricting foreign exchange. The hypothesis to explain the effectiveness of the first phase is therefore that authorities were responding to market demand in the process of distributing foreign exchange to guarantee some supply for every sector, while also using minimum prices to restrict foreign exchange as a whole.

In his assessment of the MER system, Kafta (1956) suggests that this framework was a key part of the system's design, while authorities discussed a way of both restricting foreign exchange to stabilize the balance of payments without creating new distortions in the exchange rate market. Sumoc minutes during the first phase period do not report discussions on the design, but at different time officials do debate whether the system was effective in accomplishing both goals (Sumoc Minutes 450 to 500, 1954 and 1955). This suggests that there was a

responsive approach from authorities to sectoral demand for foreign exchange, which sought to guarantee supply to contain the emergence of a black market, but also restrict overall supply. This hypothesis seems a plausible explanation for the system's effectiveness at stabilizing the balance of payments.

Testing this hypothesis is not easy. Unfortunately, qualitative sources (both primary and secondary) do not record how authorities were distributing foreign exchange across the five categories and how the minimum prices were decided. As shown earlier in the last chapter, the minutes of the Sumoc meeting that launched Instruction 70 do not have a proper explanation of the allocation of different sectors to the five categories (Sumoc Minutes 408, 9/10/1953). Banco do Brasil does not hold records explaining the distribution of foreign exchange on a monthly basis, only the records of the amount of foreign exchange distributed. This new quantitative data can, however, shed light on the behavior of the distribution across sectors and auction houses.

To test the hypothesis, the next sub-sections analyze the pattern of three different parts of the new dataset: (1) the difference between the amounts of foreign exchange supplied to and auctioned through the MER system; (2) the distribution of foreign exchange to the five categories during the first MER period; and finally (3) the comparison between the auctions' weighted exchange rate and the free market exchange rate. The analysis of this data with some simple econometrics can help test the above hypothesis.

6.2 No Systematic Mistakes

Given that there is no available information on the process of distributing foreign exchange to the different auction houses and categories, the test of the hypothesis of a responsive approach to market demand that also sought to

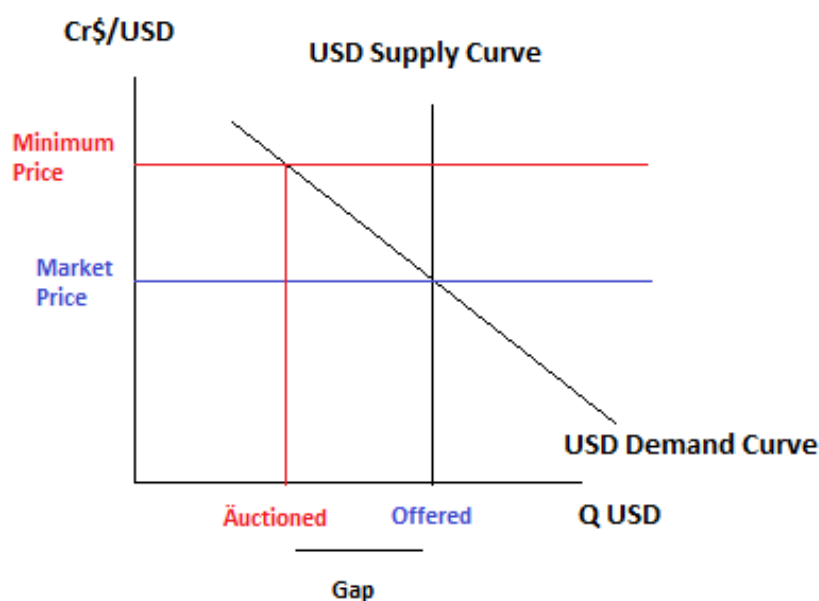
force some buyers out has to be made from the available data on the outcomes of the auctions process. One of the interesting features of the new data is the separation between the quantities of foreign exchange offered at the auctions, basically the supply of foreign exchange to the MER system, and the amounts effectively purchased by importers, which is the equilibrium level of foreign exchange sold at the auctions.

The difference between the foreign exchange supplied and auctioned is a good indicator of the size of the mismatch between supply and demand for each category at a certain period of time, since it represents how much currency was not purchased at the auctions given the minimum prices. With scarce foreign exchange, this gap only existed because of the imposition of the minimum prices. A large gap means that there was not enough demand to purchase the foreign exchange at the imposed minimum price of that auctions category, since some buyers were being forced out of the auctions. On the other hand, a very small gap signals that demand was much stronger than the supply and additional foreign exchange was probably needed in that specific category or location, as buyers were purchasing at any given minimum price.

If officials were being responsive to demand but also trying to force some buyers out of the auctions, they would be looking at the auction results at a specific moment to determine how much to supply in each market in the following period, in order to not allow the gap between supplied and auctioned foreign exchange to grow very large. At the same time, by setting minimum prices they were also always maintaining a gap, as this was the mechanism used to force some buyers out of the system and restrict the overall level of foreign exchange to adjust the balance of payments. In this framework officials had to, at the same time, gradually minimize the gap but keep its

existence to make the auctions effective. If these patterns can be seen in the data, it would suggest this decision making process was taking place at the central level. Figure 6.1 provides a simple microeconomic chart of this MER auctions process.

Figure 6.1 – Microeconomic Interpretation of Brazil’s MER System



Source: Own construction.

The charts show a simple supply and demand dynamic of the MER system for a single category and location at a specific moment in time. The horizontal axis shows the quantity (Q) of foreign exchange (US\$) available to the system, while the vertical axis shows the exchange rate in cruzeiros per dollars (Cr\$/US\$). The vertical black line is the supply of foreign exchange to the auction system. This supply is fixed by authorities for each category and location at a given auction. The negatively inverted black curve is the demand for foreign exchange, which follows a typical demand function. Demand for foreign exchange declines if the exchange rate rises. If there were no minimum prices,

the equilibrium of the auction system would take place where these two lines cross. All foreign exchange would be sold at the price of the auctions, which results from the supply defined by authorities. However, the existence of the minimum prices alters this equilibrium. By fixing a higher minimum price than the market clearing price, authorities force some buyers out of the system and reduce demand for foreign exchange through the demand curve. This results in a new equilibrium where the minimum price crosses the demand curve, resulting in a smaller auctioned foreign exchange quantity. The difference between the supply and the auctioned foreign exchange is the gap created by authorities by setting the minimum prices.

The hypothesis to explain the effectiveness of the system follows the microeconomic logic of the chart. Minimum prices were designed exactly to create a gap and force buyers out, while Sumoc officials also had to be cognizant of the demand curve in order to provide enough supply and choose a minimum price that would not cause this gap to grow too much, so that importers did not turn to the black market. Authorities had to minimize the gap over time to make sure that the auction system remained the only place importers would buy foreign exchange. To test this hypothesis, one has to look at whether the gap existed in the data and if it indeed declined over time.

One interesting possibility that could go against this hypothesis is that bidders, in this case importers, could be colluding to keep the prices of exchange rates from depreciating too much. Tenorio (1997, p. 207) shows that in multiple auctions bidders have a strategic incentive to bid for less than they require to

keep prices from rising too much.¹⁶ If all bidders act in the same way, even if not explicitly colluding, they could be tacitly colluding to prevent exchange rates from depreciating significantly. Although this is impossible to test for the Brazilian case, a few reasons suggest that it was unlikely to happen in the MER auctions. First, in contrast with other auctions where bidders can strategically determine how much to bid, in this case there was a clear and known lack of supply for foreign exchange. And with the variation in the supply of foreign exchange for categories and exchange houses over time, importers had no control over whether they could buy the foreign exchange at a future date, as they did not determine whether foreign exchange would be auctioned again for that category and location. This was a mechanism that made authorities unpredictable and helped to contain this strategic behavior. Second, auctions were held for similar categories at different locations at the same time. It would be hard for importers to coordinate, or act strategically, in many locations at the same time. Finally, minimum prices were the mechanism that helped authorities prevent importers from bidding too little. And as these prices were set according to previous auctions, importers were not able to purchase foreign exchange at lower prices in a future auction, which also likely prevented them from colluding.

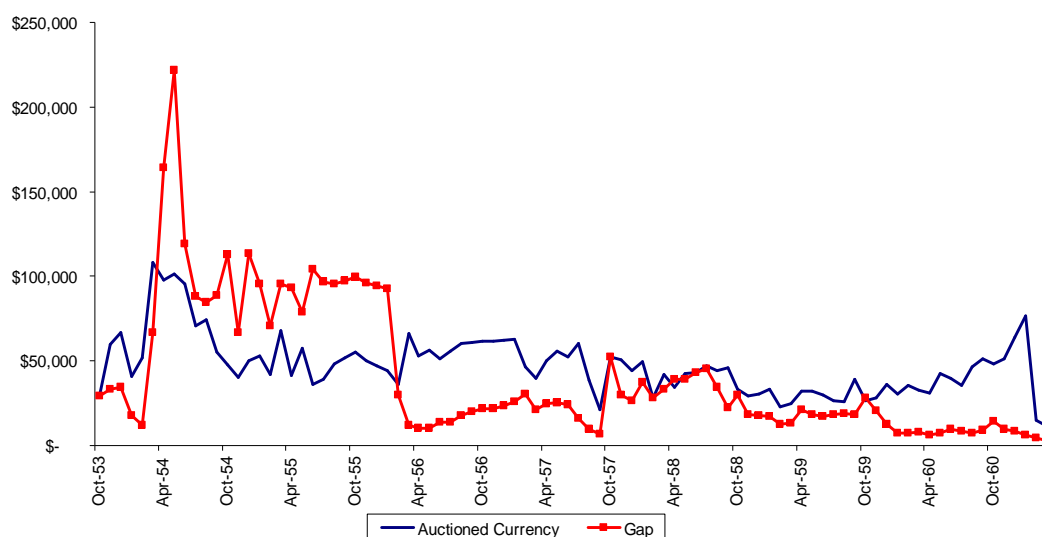
To evaluate whether the gap followed the above hypothesis, the ideal would be to track whether the gap existed and declined overtime for each category or at each auction house. This level of detail would allow a very comprehensive understanding of how officials were supplying foreign exchange.

¹⁶ There is a large literature that deal with strategic bidding in auctions which also includes Goldberg and Tenori (1997), Feldman and Mehra (2003), and Ausubel and Romeu (2005)

Unfortunately, there is no data available on auctioned and supplied foreign exchange at the category level, only at the aggregated level for the whole MER system. There are, moreover, no data on the distribution across the auction houses. The collected data include only the quantities auctioned at the category level, which will be presented in the next sub-section. Sumoc's monthly bulletins, as well as Banco do Brasil's statistical books, only provide general data for the system, aggregated from the different auction houses.

Despite this limitation, tracking the aggregate level can be revealing about the officials' approach to foreign currency distribution. If the gap existed and declined over time, it means that officials were, from a centralized perspective, looking at the full market results at a specific moment to determine how much to supply in the next auctions and how high to set the new minimum prices, thus maintaining the gap but trying to reduce it over time. Figures 6.2 and 6.3 present the data.

Figure 6.2 – Auctioned Foreign Exchange and the Gap, 1953-1961 (US\$ million)

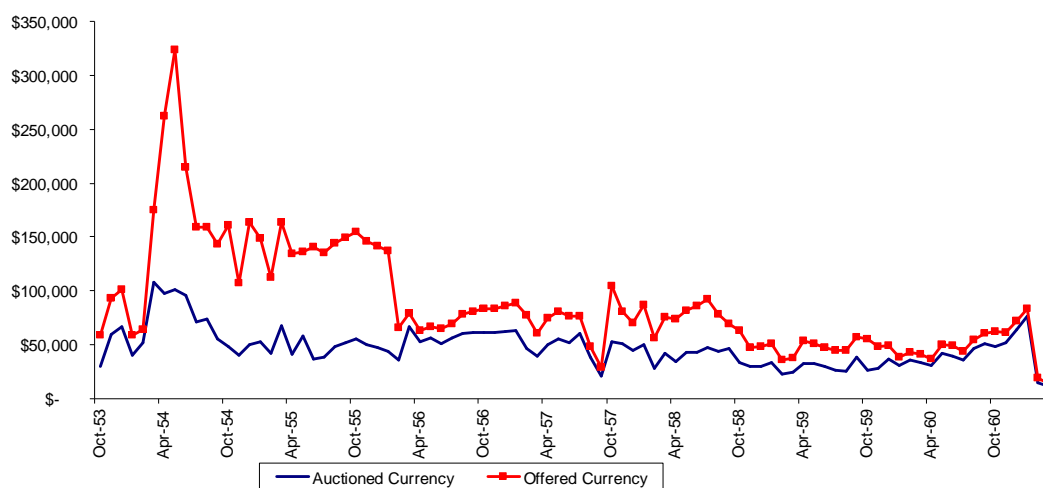


Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

Figure 6.2 shows the evolution of the auctioned foreign exchange and the gap between it and the foreign exchange supplied. It suggests changes in the pattern of the auctioned foreign exchange and the gap. In the beginning of the series, until 1956, the gap was much bigger than the amounts effectively auctioned. This was during the good years of the MER regime under Vargas and Café-Filho. It suggests officials were indeed creating the gap by using minimum prices and forcing buyers out of the auctions. At the same time, there also seems to be a declining trend in the gap, suggesting a reduction in this mismatch and a learning process from authorities to not force too many buyers out of the system, and thus not create demand for a black market. It is worth remembering that the large gap at the start of the period does not mean that there was a surplus of foreign exchange for the system. The gap was simply the result of the mismatch created by the minimum prices in the auction system.

In 1956 there is a clear structural break in the series, which reflects the change in government. The gap falls significantly and during a large part of the series it runs very close to zero. This likely reflects the change in the approach to the system discussed in the first part of the chapter. With most foreign exchange being gradually allocated outside of the auctions after 1956, Sumoc had much less foreign exchange to offer to the auctions, which can be seen in the decline of the amount of offered foreign exchange shown in the Chart 5.12 below. This by itself resulted in weaker exchange rate equilibrium levels, as seen in Chart 5.1 earlier in the chapter. But at the same time, given the reduced interest from authorities in using the auction system and with foreign exchange being provided much more easily, Sumoc was probably not setting minimum prices at much higher levels than what the auctions clearing price would have been during the second phase, so buyers would no longer have been forced out of the system. Although there is no data on Sumoc's minimum prices, the outcome of the auctions shows a much smaller gap in the context of a reduced supply of foreign exchange and faster exchange rate depreciation, and the only way for this to have happened was without a significant use of minimum prices above the auctions' equilibrium levels. This explanation is consistent with the historical description of the system, with authorities gradually marginalizing the use of the system during the second phase.

Figure 6.3 – Auctioned Foreign Exchange and Offered Foreign Exchange.
1953-1961 (US\$ million)



Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

Figure 6.3 shows the evolution of the quantities of foreign exchange supplied and auctioned, reinforcing the narrative seen in the previous graph. It shows a much larger amount of foreign exchange offered in the first versus the second phase, and as expected, also that the amounts auctioned were much smaller than the supply in the first period versus the second, which explains the decline in the gap seen in the previous chart.

A simple econometric test applied to the gap series can help to validate the hypothesis of a declining gap. Although the data shows the existence of the gap, validating the hypothesis that authorities were indeed using minimum prices to force some buyers out of the system, an econometric test can determine whether authorities were indeed trying to prevent the gap from becoming too large and minimize it over time. This would support the second part of the hypothesis: that officials could also not allow the gap to grow too large. This is done by performing a stationarity test in the gap series.

A stationary series has the property that its mean, variance, and autocorrelation structure do not change over time. And a non-stationary series is one whose statistical properties change over time (Greene, 2008, p. 550). For the purpose of this test, a stationary gap would mean authorities were not making systematic mistakes in the supply of foreign exchange to the system, so that the mean, variance, and autocorrelation of the gap are constant over time. It means every time the gap grows too large because officials made mistakes in the supply of foreign exchange or in setting the minimum prices, they would learn from this mistake and correct it in the following period. This would result in a fluctuating gap around a constant mean. On the other hand, if this is not found and the gap is non-stationary, it means officials were not learning from their prior mistakes and setting prices too high, forcing more and more buyers out of the system.

On top of this, a stationarity test can also reveal if the series has an upward or declining trend under a stationary series. If the test reveals a declining trend, it would suggest not only that officials were not making systematic mistakes, but also that they had indeed worked to gradually minimize the size of the gap in time, making the system more efficient. Thus, if a stationarity test reveals a stationary and declining gap, it would suggest officials were responding to the previous auction results to both contain mistakes but also to minimize the gap – evidence of a learning process on the part of the authorities.

The simple test for stationarity is the ADF (Augmented Dickey–Fuller), in which the null hypothesis is that a unit root is present in a time series, which characterizes non-stationary data. But in the case of the gap, the problem of directly applying an ADF in the series is the structural break of 1956, which changes the behavior from authorities regarding the auction system. In order to

test the gap under a structural break, I have followed the procedure introduced by Johansen et al (2000), which presents a sequence to account for a structural break in a stationarity test. For robustness, I have also tested the stationarity of the series only for the period of 1953-1956 during the first system, which although has less available data, allows us to analyze the stationarity and trend only for the first period.

Johansen et al's (2000) procedure to test for stationarity with a structural break is the following: first perform the unit root ADF and the KPPS (Kwiatkowski–Phillips–Schmidt–Shin, another test for stationarity) on the original gap series. This shows whether the series, without accounting for the structural break, is stationary. If the test confirms stationarity, then the gap series is regressed by OLS on an intercept, a linear trend, and a dummy that accounts for the structural break (0 until 1956 and 1 afterwards). Then the residuals of this test, which is the series minus its trend and the structural break, are tested with ADF for unit root again. If the ADF of the residuals is also stationary, it means the original series accounting for the structural break is stationary. The first original test should be performed including trend in intercept in the ADF equation. The second test, on the residuals, should be performed without trend and intercept, since those are already included in the OLS regression to obtain the residuals. Table 6.1, 6.2 and 6.3 presents the results of the stationarity tests. Table 6.1 present the results of the original ADF and KPPS test. Table 6.2 presents the OLS regression that accounts for the structural break and the ADF of the residuals of the regression.

Table 6.1 – Stationarity of GAP

ADF				
Variable	Coefficient	T-Statistic	P-value	Outcome
GAP		-3.9	0.0157**	I (0)
ADF Test Equation				
GAP (-1)	-0.22	-3.3	0.0011***	
C	2.65	3.4	0.001***	
Trend	-0.007	-2.87	0.0028***	
KPPS				
Variable	LM Stat	Outcome		
GAP	0.06	I (0)		

Source: Own construction. Statistical significance: *** for 1% level; ** for 5% level; * for 10% level. Number of observations: 89. Test performed with variable in log, with trend and intercept

Table 6.1 shows the results of the ADF and KPPS for the original gap series, and also the ADF equation, which tests for intercept and trend in the data. The results show that, without accounting for the structural break yet, both the ADF and KPPS test suggest the series is integrated with order 0, which means it is stationary and has no unit root. The ADF equation shows that the gap has a statistically significant intercept and a declining trend.

Table 6.2 – Stationarity of GAP Residuals

ADF				
Variable	Coefficient	T-Statistic	P-value	Outcome
GAP Residuals		-8.12	0***	I (0)
OLS Equation				
C	-0.88	-8.12	0***	
Break	0.008	2.84	0.004***	
Trend	-0.0001	-6.64	0***	

Source: Own construction. Statistical significance: *** for 1% level; ** for 5% level; * for 10% level. Number of observations: 89. Test performed with variable in log, without trend and intercept which have been filtered in the OLS regression

Table 6.2 shows the results of the regression that cleans the structural break out of the series, and also the ADF test for the residuals of this equation. It is

important to highlight that, in this case, the ADF is performed on the residuals without a trend and intercept since those have already been accounted for in the OLS regression. Similar to the original series, the results show that the residuals of the GAP are also integrated with order 0, so they are stationary, and also show a small declining trend in the GAP.

Analyzed together, the exercises suggest that the GAP series, accounting for its structural break in 1956, is stationary, so officials were indeed not committing systematic mistakes in the supply of foreign exchange and the decision to set minimum prices. They were learning from their mistakes so that the gap fluctuated around a constant mean. The results also show a small declining trend for the gap, which suggest officials were also gradually trying to minimize the gap over time.

The above results are made for the full gap series, which runs between 1953 and 1961 and has 86 observations. This is the ideal series to perform the test because it has enough observations to fully test for stationarity in the data. However, although to test for stationary the full series is good, to test for the declining trend in the series it is less appropriate. After 1956, as discussed, the gap falls significantly with the change in approach of authorities to the MER system. The gap therefore falls not because authorities were minimizing it, but because of the restricted supply to the system. One way to test for the declining trend of the series is to also perform the test only for the first period of the system. This will show whether, during the period when authorities were in fact following the pattern of imposing high minimum prices to force buyers out, they were indeed trying to minimize the gap. This test will also serve as a robustness check for the test of the full series, since the gap until 1956 has no

structural break problem, so the stationarity test can be performed without any restrictions. The result of this test is presented below in Table 6.3.

Table 6.3 – Stationarity of GAP 1953-1956

ADF				
Variable	Coefficient	T-Statistic	P-value	Outcome
GAP 1953-1956		-5.8	0.0007***	I (0)
ADF Test Equation				
GAP 1953-1956 (-1)	-2.5	-5.8	0***	
C	28.59	5.8	0***	
Trend	-0.0026	-2.79	0.004***	

Source: Own construction. Statistical significance: *** for 1% level; ** for 5% level; * for 10% level. Number of observations: 26. Test performed with variable in log, with trend and intercept

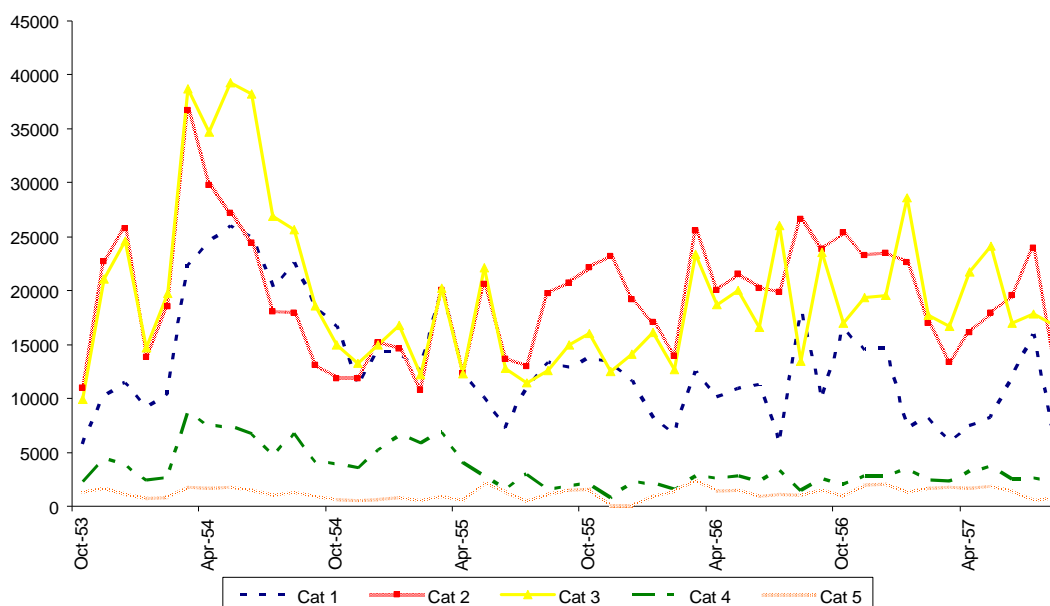
Table 6.3 shows the result of the ADF and the ADF equation for the gap only in the period 1953-1956. The result of the ADF confirms that the series is stationary also only for the period 1953-1956. More interestingly, it shows a slightly stronger declining trend in the series when compared to the full test until 1961. This shows that, only for the period 1953-1956 during the peak years of the system, Sumoc not only did not make systematic mistakes but also tried to very gradually minimize the gap. This is further confirmation of Sumoc officials' learning process.

6.3 Fluctuating Auctions Results

The above sub-section has presented and analyzed the data on the gap between the foreign exchange supplied to and effectively auctioned through the MER system. Unfortunately, that same data is not available at a more granular level divided by categories or auction houses, which would have allowed the same exercise to be applied to each individual category. But while Sumoc documents do not report the supply of foreign exchange at the category level, they do contain the effectively auctioned foreign exchange for each category. As

discussed, this is the equilibrium level of auctioned currency that resulted from the supply allocated by Sumoc to each category at each auction, the minimum prices for each category, and the market demand at each auction. The analysis of the pattern of this data can help to shed some more light on the results obtained in the previous section. Figure 6.4 presents the data.

Figure 6.4 – Auctioned Foreign Exchange Per Category, 1953-1957 (US\$ million)

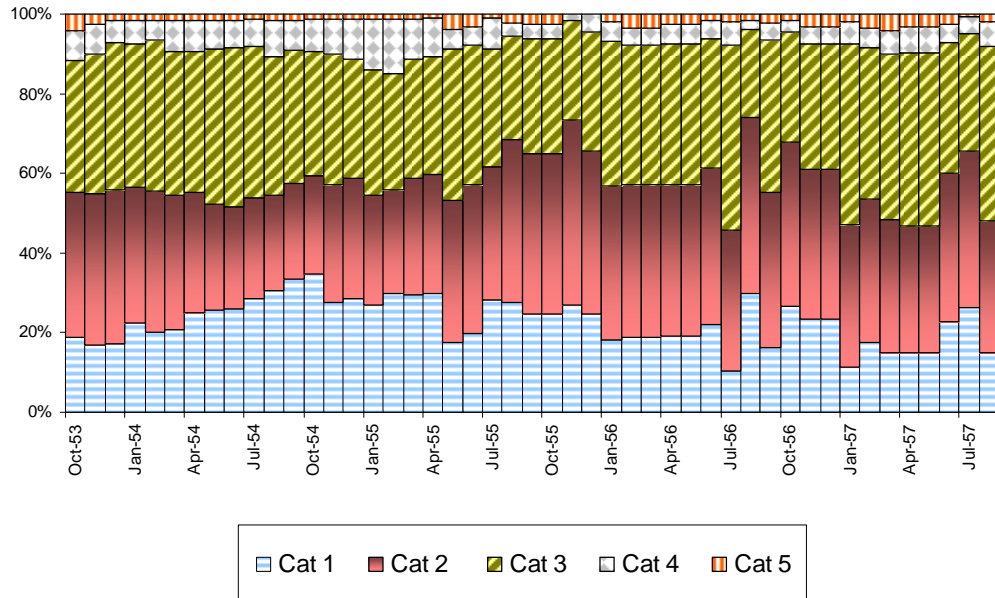


Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

Figure 6.4 shows the amount of foreign exchange auctioned in each category between 1953 and 1957, during the first phase of the system. A few interesting things can be observed from this data. First, it reveals a certain pattern in auctioned currency between categories. Categories 1-3 accounted for the larger share of the foreign exchange auctioned while Categories 4-5 had much less foreign exchange being auctioned. Although this is the effectively auctioned currency and not the supply, it suggests that either Sumoc was supplying much

less currency for Categories 4-5 or it was setting minimum prices much higher than the market clearing price so that less foreign exchange was auctioned. Either way, this approach follows the logic behind the five categories of the system, with priority being given to imports of the most essential goods in Categories 1-3. To recap from Chapter 4, Category 1 included the most essential sectors such as food, chemicals, agricultural equipment, and medicine; Category 2 included some production inputs such as rubber, electrical materials, and medical equipment; Category 3 included all industrial equipment, capital goods, and some consumption goods, such as vehicles; Category 4 included all non-essential equipment and some production inputs like steel; Category 5 included all other sectors, which basically meant all the remaining consumption goods (Sumoc Minutes 408, 9/10/1953). It is possible to notice that Category 5, which included consumption goods, had only limited amounts of foreign exchange throughout. But between Categories 1-3 there was a lot of fluctuations which reflected either the changes in supply or minimum prices. It is clear that the supply and minimum prices were not fixed and fluctuated in time depending on how much officials wanted to privilege each category at each time. This data complements the analysis of the previous sections as it shows, even without looking specifically at the supply and the gap for each category, the large fluctuation of auctioned currency between categories is an indication that officials were managing supply and minimum prices in order to alter significantly the amounts auctioned in each category. This reinforces the impression that officials were not committing systematic mistakes and were managing the system effectively.

Figure 6.5 – Auctioned Foreign Exchange, 1953-1957 (% of Total)



Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

Figure 6.5 shows the percentages distributed to each category and complements the analysis of Figure 6.4. Clearly, a pattern seems to exist throughout the first phase. Categories 1-3 had the largest share of foreign exchange auctioned, representing the bulk of essential imports and accounting for almost 90% of the total, while Categories 4-5 represent only around 10%. Yet, as discussed following Figure 5.13 there was a lot of variation within Categories 1-3, with percentages ranging between 15% and 30% for each of them during the whole period. One possible explanation for this variation is that essential products that were not produced in Brazil, such as medicine or food, had peaks of demand that forced officials to increase the supply of foreign exchange to Category 1. In other moments, these funds could be supplied to equipment and capital goods in Categories 2 and 3. Clearly, the variation between them shows the existence of a trade off over the supply of

funds to the different sectors and the choice of minimum prices at each given time.

6.4 The Free Market Benchmark

A final econometric exercise on another part of the dataset can shed further light on the hypothesis discussed above. Instead of looking at the quantities of the two last sub-sections, an interesting exercise can be made using the exchange rates. Based on the quantities allocated to each MER category and the exchange rates, it is possible to construct the weighted average auction exchange rate. While all trade operations went through the auction system, there was a floating free market exchange rate for services and capital operations, which represented about 10% of the foreign exchange market (calculated from IBGE, 1951-1961). This exchange rate was created in 1952 before the auctions and it was in practice a separate market for these transactions (Sumoc Minutes 266, 10/07/1951). The free market was Sumoc's first experiment with allowing some exchange rate depreciation, but since it was concentrated on only a small part of the market, it did not have any meaningful impact on stabilizing the balance of payments (Figure 4.2).

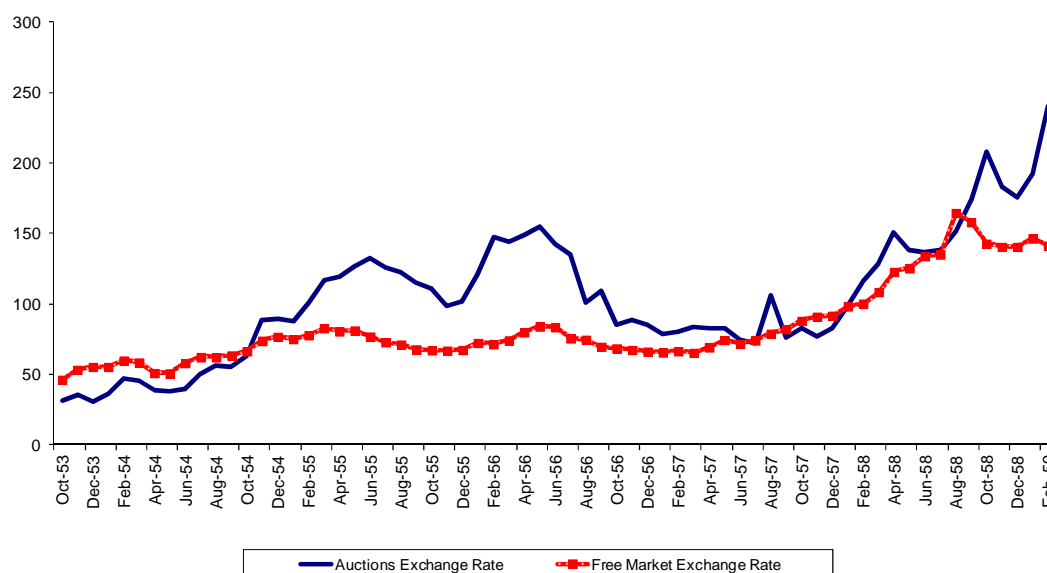
As already discussed, officials imposed minimum prices for the exchange rates in the auctions for each category. These prices were increased over time according to the results of the previous round of auctions and were used to homogenize the system and remove some buyers from the auctions, forcing the auctions to have similar exchange rates in the same categories across the country and depreciate over time. These minimum prices were set discretionarily and did not follow any specific rules. The question that emerges is if this increase in the minimum prices to depreciate the auction exchange

rates had any connection to the free market exchange rate, which could have been used by authorities as a benchmark for the expected size of the depreciation and help them set new minimum prices. If the weighted auction exchange rate is predicted by the lagged market exchange rate, this is an indication that officials were looking at the free market as a benchmark to determine the minimum prices for the auctions. They were forcing the auctions to converge to the free market over time by using the minimum prices mechanism and the quantities supplied to each category.

There was no overlap between the free market and the auctions. Exporters were forced to sell all their foreign exchange inflows to Banco do Brasil and this was the only source of foreign exchange for the auctions. The transactions of the free market rate had their own supply of foreign exchange from inflows for wages, capital, or services. The free market, although smaller in size (about 10% of the foreign exchange market), functioned during the whole auctions period and can be tested as a benchmark for the auction exchanges rates. The weighted auction exchange rate was constructed with the data of the quantities of foreign exchange auctioned to each sector between 1953 and 1957 (Figure 5.7) and the exchange rates of each category (Figure 5.1). Figure 6.6 presents the two series.

Figure 6.6 – Free Market Rate and Weighted Auctions Rate, 1953-1957

(Cr\$/US\$)



Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

A first look at the two series seems to suggest they do correlate in parts of the period. The two series run very close to each other at the start of the MER period until about 1955, and then again from 1957 onwards. In 1955 and 1956 there is a significant divergence between the two series with the average auction exchange rates depreciating faster than the free market rate, but this divergence is corrected from mid-1956 when the auction exchange rate converges lower to the free market. It is worth noting that while the free market exchange rate depreciates at a stable pace, the auctions rate follows a more volatile path. This is probably the result of the volatility of the quantities supplied for the different categories and the minimum prices.

Overall, although the two series diverge during a period of time, the correction after 1956 and the long-term correlation between the two series suggest there

might be a causal relationship between them. A first look does not, however, indicate which series could be following the other in a causal relationship. Based on the discussions above, the expectation would be that the market rate predicts the auctions rate, confirming that authorities were responding to markets and using the free market as a benchmark to set minimum prices and depreciate the auction exchange rates. The opposite result, with the free market being predicted by the auctions, would be counter-intuitive.

Table 6.4 – Stationarity of Market and Auction Exchange Rates

ADF	T-Statistic	P-value	Outcome
<i>Level</i>			
Market	-1.366	0.8615	I (1)
Auctions	-1.76	0.7121	I (1)
<i>1st Difference</i>			
Market	-6.45	0***	I (0)
Auctions	-7.86	0***	I (0)
<hr/>			
KPPS	LM-Stat		Outcome
<i>Level</i>			
Market	0.15		I (1)
Auctions	0.16		I (1)
<i>1st Difference</i>			
Market	0.11		I (0)
Auctions	0.12		I (0)

Source: Own construction. Statistical significance: *** for 1% level; ** for 5% level; * for 10% level.

Table 6.5 – Stationarity of Market and Auction Exchange Rates Residuals

OLS Equation			
Auctions			
C	3.87	43.3	0***
Trend	0.026	6.1	0***
Break	-0.36	-2.2	0.03***
Market			
C	3.87	102.3	0***
Trend	0.021	11.56	0***
Break	-0.34	-4.9	0***
ADF Residuals			
T-Statistic		P-value	Outcome
<i>Level</i>			
Market Residuals	-1.36	0.86	I (1)
Auctions Residuals	-1.99	0.59	I (1)
<i>1st Difference</i>			
Market Residuals	-6.25	0***	I (0)
Auctions Residuals	-7.66	0***	I (0)

Source: Own construction. Statistical significance: *** for 1% level; ** for 5% level; * for 10% level.

For this exercise, a different econometric methodology is required compared to the previous exercises. Following the same methodology adopted in Section 6.2 from Johansen et al (2000), Tables 6.4 and 6.5 present the results of stationarity tests for the two series. Since the series also have the problem of having a structural break in 1956, similar to the GAP series tested before and because of the regime change, the stationarity tests have to follow the same procedure of testing the residuals of an OLS regression that cleans the structural break from the original series.

Tables 6.4 and 6.5 show that, both in the original test but also in the test of the residuals, the two series (market and auction) are not stationary in level, which impedes performing an econometric exercise that requires stationary data, such as a VAR or a Granger Causality test, which would otherwise both be options

to check the causal relationship between the two series. Since the variables are stationary in first difference, however, a cointegration test combined with a Vector Error Correction (VEC) – in case they do cointegrate – is the correct approach to test whether the market exchange rate predicts the auction exchange rate.

The cointegration test checks whether the two variables have a long-run relationship, and in case they do, the VEC shows which variable predicts the other in the short-term (Greene, 2008, p. 756). For the purpose of this exercise, a cointegration test is appropriate because the objective is to find a long-term relationship between the two series. Only if the two series are cointegrated and with a long-term relationship and if the VEC model shows that the auctions rate is predicted by the market rate, would the test confirm the short-term adjustment dynamic. Given the structural break in 1956, Johansen et al (2000) also present a procedure for testing for cointegration and VEC accounting for the structural break. This is done by also including in the VAR equation of the cointegration test the structural break dummy as an exogenous variable that was also used to perform the stationarity test. Table 6.6 presents the results of the cointegration test, based on the VAR equation with intercept, trend, and including the structural break dummy.

Table 6.6 – Cointegration Test

Johansen Cointegration Test		
Market and Auctions		
	Trace	Max-Eigen
None	0.18	0.24
At Most 1	0.055*	0.036**

Source: Own construction; Statistical significance: *** for 1% level; ** for 5% level; * for 10% level.

Table 6.6 shows one cointegrating equation between the two variables in the long term (according to both the trace and max-Eigen indicators of the Johansen Test). This means that the two series have a long-term statistical relationship, and allows the performance of the VEC model to test the short-term responsiveness of one variable to the other. The VEC results are presented in Table 6.7, which also includes the structural break dummy.

Table 6.7 – Cointegration and VEC Results

Vector Error Correction Model			
	Market	Auctions	
Coint Equation	0.053	0.229	Coef
	0.05**	0.0045***	P-value
Market (-1)	0.165	0.698	Coef
	0.015**	0.023**	P-value
Market (-2)	-0.145	-0.070	Coef
	0.150	0.480	P-value
Auctions (-1)	0.033	-0.150	Coef
	0.300	0.280	P-value
Auctions (-2)	-0.020	-0.080	Coef
	0.460	0.640	P-value
Break 1956	0.003	-0.057	Coef
	0.170	0.04**	P-value
C	0.016	0.031	Coef
	0.04**	0.048**	P-value
N=62			

Source: Own construction. Statistical significance: *** for 1% level; ** for 5% level; * for 10% level.

The VEC results show that the market exchange rate explains the auction exchange rate at 5% statistical significance, while the opposite effect does not exist. This means that the market rate statistically predicts the auction exchange rate. The test also shows that this short-term response happens only with a one-

month lag, which suggests that officials were chasing the immediately previous market exchange rate. The results of the VEC suggest the existence of a relationship between the two completely separate markets, which could only be linked by the MER mechanism of setting minimum prices and supplying foreign exchange in the auctions in an effort to depreciate exchange rates following the free market. It suggests the free market exchange rate was a benchmark for the auction system and Sumoc.

6.5 – Chapter Conclusions

This chapter has shown, based on the new dataset of the MER auction system, that the effective results obtained in the first phase were not only the result of the centralization of foreign exchange in the system but mostly due to officials using the auctions to effectively force buyers out of the auctions and depreciate exchange rates, as well as their responsive approach to changes in market demand, which prevented the the gap between the supplied and auctioned foreign exchange from increasing too much.

This was done both by controlling the supply of foreign exchange to the auctions and also by setting minimum prices for each category at each moment in time. The econometric exercises suggest officials were not committing systematic mistakes with the supply of foreign exchange and were looking at the free market exchange rate to determine how much to provide to each category and to set minimum prices in the following month. This mechanism worked as an intermediary system that helped to gradually depreciate the exchange rate after a long period of overvaluation, with Sumoc ‘guiding the invisible hand’ of the market for an effective outcome between 1953 and 1957.

7. The Neutrality of Multiple Exchange Rates: The Lack of Industrial Distortions in 1950s Brazil

Chapters 5 and 6 have investigated the reasons behind the rise and fall of the MER system in Brazil and the mechanics for the effective macroeconomic results during its first phase between 1953 and 1957. The main conclusions were that during the period when Brazilian authorities were using the MER system, distributing most of the country's foreign exchange via the auctions, the responsiveness to market demand combined with the use of minimum prices explained the positive results for the balance of payments. The decline of the system resulted from the dismantling of the original design due to the major increase in imports outside the system, combined with the expansionary monetary and fiscal policies after 1957.

While Chapter 6 explains the mechanics of the system, it does not provide enough evidence to fully assess whether the regime was indeed a 'successful' case of exchange controls, according to the current literature on controls. As shown in Chapter 2, the literature sees any attempts to modify free markets as distortive unless proven otherwise (Kovanen, 1994, p. 2). Researchers are required to provide counterfactual tests to show that a specific use of controls was not causing 'distortions' to the rest of the economy (Shultze, 2000, p. 9).

Although Chapter 5 has shown that the MER system in its first phase stabilized the balance of payments and supported macroeconomic conditions, it did not test for its second order effects. When fully functional the MER system was an effective mechanism to keep macroeconomic conditions in equilibrium, but it could have potentially caused important distortions for different sectors of the economy. Different exchange rates for different groups of imports could have

stimulated some industrial sectors to perform better or worse than they would have done if all had had the same market exchange rate. While the system was helping markets to function better, it was still not an equal system for all sectors, which were affected differently by the auctions. As shown in Chapter 5, this differentiation was in fact an objective of the MER system, which was initially designed to stabilize the balance of payments, but with the implicit objective of stimulating industrialization, especially the import substitution of advanced industries (Kafka, 1956).

This creates a conflict between the existing literature on controls, which claims this differentiation should be considered a 'distortion' to a free market system, versus the literature on ISI, which, as shown in Chapter 3, sees tariffs and exchange controls as essential policy tools exactly targeted at producing 'distortions' to accelerate the industrial growth of specific sectors. In fact, this conflict also exists within the literature on Brazilian industrialization. Many authors have a positive assessment of the results of the ISI model, arguing that protectionism stimulated industrialization in advanced sectors (Baer, 1972; Tavares, 1975; Weisskoff, 1980; Colistete, 2006; Bergsman, 1970). At the same time, there is a strong critical literature on the outcomes of the application of the ISI model in Latin America, as it resulted in distortions to trade flows and resulted in inefficient industries at the end of the process (Taylor, 1998; Haber, 2006; Fishlow, 1972; Leff, 1967).

Irrespective of whether these should be classified as distortions or simply the results of policy interventions, very little empirical work has been done to actually show how different sectors have been affected by the MER system. In

the existing literature it is assumed that the MER system produced import substitution in the advanced industrial sectors.¹⁷ This is the main issue this chapter investigates. The method is to perform a counterfactual exercise exploring what would have happened to industrial growth if all sectors had had the same free market exchange rate rather than the MER system. The comparison between the trajectory of each industrial sector with the auction exchange rate versus the market exchange rate shows whether the MER system favored the growth of particular sectors. If so, this will prove the existence of distortions, challenging the conclusion that the system was effective for the economy as a whole. It would, at the same, prove that the MER system was indeed an instrument for stimulating import substitution in advanced sectors during the 1950s. If, by contrast, the results show a similar performance with and without the MERs, it demonstrates that the system was not producing distortions for the rest of the economy but also that it was not an instrument that supported industrialization, challenging the consensus in the literature on ISI.

7.1 Defining MER 'Distortions'

There are different ways to assess distortions when examining experiences of controls and multiple exchange rates. From the conventional point of view of the literature on controls, discussed in Chapter 2, distortions are simply deviations from the economic results that would have otherwise been obtained if capital or exchange controls were not used (Schulze, 2000, p. 10). According

¹⁷ This literature was discussed in Chapters 4 and 5 and includes Baer (2009), Figueiredo Filho (2005), Lago (1982), Vianna (1987), Sochazewski (1980), Bergsman (1980), Abreu (1990), and Caputo (2007).

to this view, free market flows are always the most efficient option and all alternatives cause distortions to this equilibrium.

This definition is problematic and unrealistic from a historical perspective, as shown in Chapter 2. Most of the recent empirical literature on controls after Bretton Woods has moved beyond simply assuming that any deviation is a distortion. Instead, it tests whether the use of controls was able to reach superior economic results compared to before the adoption of the instrument (Cardoso & Goldfajn, 1997; Carvalho & Garcia, 2006; Goldfajn & Minella, 2005; Jinjara et al, 2013). This was exactly the test performed on the Brazilian MER system of the 1950s in Chapter 6. It showed that the effective mechanics behind the MER system supported better macroeconomic conditions when compared to the period without the instrument. The deviation from the original results – a distortion in the simplest definition – was actually positive for the Brazilian economy.

Yet the literature still takes a strongly skeptical stance on exchange controls and assumes that even if controls have resulted in superior economic results after their adoption, they probably have also resulted in distortions somewhere else in the economy. For this reason, the literature requires these instruments to be tested for whether they have resulted in negative externalities for other parts of the economy that were not necessarily intended by the initial use of controls. Counterfactual exercises are needed to prove that a specific use of controls can really be considered successful (Schulze, 2000, p. 9). Chapter 2 has already discussed this stance, and while it argued that this requirement for a counterfactual test comes from the literature's negative assumptions about controls, it also made the relevant point that most of the historical experiences could have passed the test of improving the economic results under a partial

equilibrium exercise, but only a few would pass the broader test of looking at the externalities for the rest of the economy. This is how distortions are assessed in this chapter. Although the term carries a mistaken pre-conception that controls are theoretically always inefficient, it is fair to test whether the instrument caused negative externalities for other parts of the economy. For the Brazilian case, the aggregate macroeconomic results were good, so now the question is whether this was achieved at the expense of some industrial sectors.

It is worthwhile exploring what happened to the different industrial sectors that were part of the auction system. There is a long literature about the many inefficiencies that have resulted from protectionist instruments (Haber, 2006; Taylor, 1998; Baer, 1972; Hirschman, 1966), although with very different focuses. Haber (2006, p. 578), for example, argues that ISI resulted in highly inefficient industries, with the cost of subsidies and protectionism falling on consumers. For Haber, the mature part of the industrialization process saw incentives created to develop sectors that would not have survived without the protection offered by the government. Taylor (1998, p. 23) says that the microeconomic cost was the region's inability to increase productivity and keep growing once import substitution was over a few decades later.

Colistete (2007; 2009) explores the social inequalities generated by the industrial development process in Brazil in the post-war period. Focusing on the relationship between unions and workers, the author shows the two groups always maintained an antagonistic association, with industrialists concentrating a much larger share of the benefits from the country's industrial growth. The result of this process was that real wages lagged behind productivity growth, and over time this was a source of high social inequality

and contributed to preventing the emergence of a strong consumption-based middle class economy.

Baer (1972) provides a long discussion of the costs of the import substitution process in Latin America. He is against the simplistic criticism in the literature that puts excessive focus on the 'inefficient allocation of resources' (p. 101), and the static comparative advantages that could be gained from pure market liberalism. At the same time, he underlines the relevance of this criticism, affirming that by the 1970s the ISI model was already reaching its limits. Not only the size of Latin American domestic markets constrained the opportunities for further industrialization, but also the accumulation of distortions associated with the high level of government interventions, which imposed increasing problems on the growth prospects of these economies. Since irresponsible monetary and fiscal policies often became the macroeconomic companions of industrialization, as governments tried to stimulate economies amid increasing signs that the growth dividend of the easy phase was gone, these actions paved the way for the external debt crises experienced by Latin American countries in the 1980s. Overall, he is clear that the accumulation of imbalances in the economies that protected inefficient industrial sectors became unsustainable over time.

Designing a counterfactual exercise focused on the divergence of the final performance of the different industrial sectors is a way of accounting for all of the possible distortions highlighted in the above literature. The ISI model could lead to the over or under performance of a specific sector through various channels, such as reduced foreign competition, increased prices of imported goods, or a higher profit margin for the local manufacturer. Independently from how the distortion was transmitted to each industrial sector, a

counterfactual exercise that compares the final industrial production performance must account for the overall net effect of these channels. This means it would, at the same time, test for the distortions featured in the literature on controls and the effect of the ISI model.

7.2 Designing the Counterfactual Test

The next issue is how to correctly design a counterfactual exercise to estimate the size of distortions in industrial performance. The shadow exchange rate (SER) is a useful concept to methodologically formulate the counterfactual test. The idea is that in any macroeconomic regime in which policymakers have imposed any sort of restrictions on the free movement of capital or trade, the resulting nominal exchange rate decouples from the underlying exchange rate that would correctly reflect the fundamentals of that economy. The SER is then the underlying exchange rate if controls were not applied and the exchange rate fluctuated purely based on macroeconomic fundamentals, such as trade flows, credit, money supply and demand, productivity, and other institutional aspects (Bertrand, 1974, p. 185).

In this framework the distortion is not simply the policy intervention but the economic outcome that results from the difference between the nominal exchange rate and the SER, with the latter capturing the economy's long-term fundamentals. This concept provides a definition of distortion that does not only claim that the policy intervention is a distortion *per se* but looks at its outcomes. Moreover, it also helps to improve econometric estimations by resolving endogeneity problems, as will be shown below.

Many studies in the literature have used the SER from both theoretical and empirical perspectives. Bertrand (1974, p. 186), for example, argues that the

nominal exchange rate does not reflect the correct value of any currency under significant trade restrictions and derives a formula to calculate the SER from a consumption optimization problem. He concludes that the SER differs from the nominal exchange rate 'by a percentage amount equal to a weighted sum of price disparities, where the weights are changes in trade flows or consumption and gross output changes brought about by the marginal change in foreign exchange availability' (1974, p. 187). Bertrand estimates the SER by adjusting the nominal exchange rate by the difference of prices internally and externally.

From a different perspective, Buiter (1987, p. 222) estimates the SER by calculating the present value of future expected fundamentals, such as money or credit stock, price levels, and the foreign interest rate. Edwards and Rigobon (2009, p. 259), while studying the effectiveness of controls on capital flows applied in Chile during the 1990s, estimated the SER by incorporating all the fundamentals of the economy in a regression. Goldberg (1991, p. 414) uses the SER to predict the 'ex ante probabilities of currency crises and the sizes of expected devaluations' in the Mexican peso between 1980 and 1986. The author defines the SER as the exchange rate that would equilibrate money markets one period ahead, given a speculative attack on the domestic currency that would result in a collapse of the fixed exchange rate regime. Oliveira (1986) presents an interesting experiment that uses the SER to test the size of agricultural taxation in Brazil between 1950 and 1974, partially covering the same period of this dissertation. Although he does not look in detail at the sources of the difference between the nominal exchange rate and the SER, and in fact does not even discuss the MER system, he estimates the SER based on the price differences between Brazil and abroad, following Bertrand's (1974) approach. He concludes that the difference between the nominal exchange rate received

by exporters and the SER is an implicit taxation on Brazilian exporters of about 25-30%, and this represents the size of the distortion of the exchange rate market in the whole period.

Chapter 8 will explore in further detail the taxation on exporters and present another way of estimating this appropriation. There is, however, an important difference between Oliveira's (1986) use of the SER and that adopted here, following the conclusions from the theoretical discussion of capital and exchange controls made in Chapter 2 and above. Oliveira claims the difference between the SER and the nominal exchange rate is the distortion, which in this case is an implicit tax of exporters. For this dissertation, following the approach presented so far, this difference is actually only the size of the policy intervention. As already shown, if the policy effect is considered a distortion *per se*, then there is no reason to do a counterfactual experiment to test the outcome of this policy, as any exchange control would create distortions *a priori*. The approach adopted here is to calculate the distortion as the effect of the difference between the nominal exchange rate and the SER on the real economy, measured by the divergence in the sectoral industrial production. If the policy intervention does not result in changes to the overall performance of the real economy, it means it did not create distortions.

Brandão and Carvalho (1991), in a World Bank study, provide a formula to calculate the SER, following a similar approach to Bertrand (1974) and reflecting the general concept that is found in most of the SER literature. The shadow exchange rate is defined as:

$$E^* = \left[\frac{\Delta Q_O + \left(\frac{t_m}{1+t_m} Q_d \eta - \frac{t_x}{1-t_x} Q_s \varepsilon \right)}{\varepsilon Q_s + \eta Q_d} + 1 \right] E_O$$

where Q_d is the demand for foreign exchange, Q_s is the supply of foreign exchange, E_o is the official nominal exchange rate, ΔQ_o is $Q_d - Q_s$ at the official exchange rate E_o , E^* is the SER, η is the price elasticity of foreign exchange demand, ε is the price elasticity of foreign exchange supply, t_m is the true import tariff, and t_x the true export tariff (or subsidy). The formula defines the SER as the nominal exchange rate adjusted by the real flows of foreign exchange to the economy, essentially representing the fundamentals of imports and exports of the current account balance, stripped of the effects of tariffs or subsidies on imports and exports. The SER is the underlying exchange rate of the economy considering the fundamental flows but cleaned of the effects of policy interventions.

While authors have estimated the SER in different ways, the literature agrees that the SER is the exchange rate most closely related to the true economic fundamentals, so it can be used to support a counterfactual experiment to test what would have happened if no interventions or controls had been imposed. Bearing this in mind, the Brazilian case again provides an excellent case study to perform the counterfactual exercise. And interestingly, while most authors had to estimate the SER based on data from economic fundamentals, the free market exchange rate in Brazil can be seen as a ready made proxy for the SER that Oliveria (1986) missed.

As discussed in Chapters 4 and 5, the free market rate was fully separated from policy interventions and did not suffer the effects of the MER or tariff restrictions during the whole decade, with services and FDI flows essentially free in that market. By being free of policy interventions, the free market exchange rate is already the underlying exchange rate based on the economic

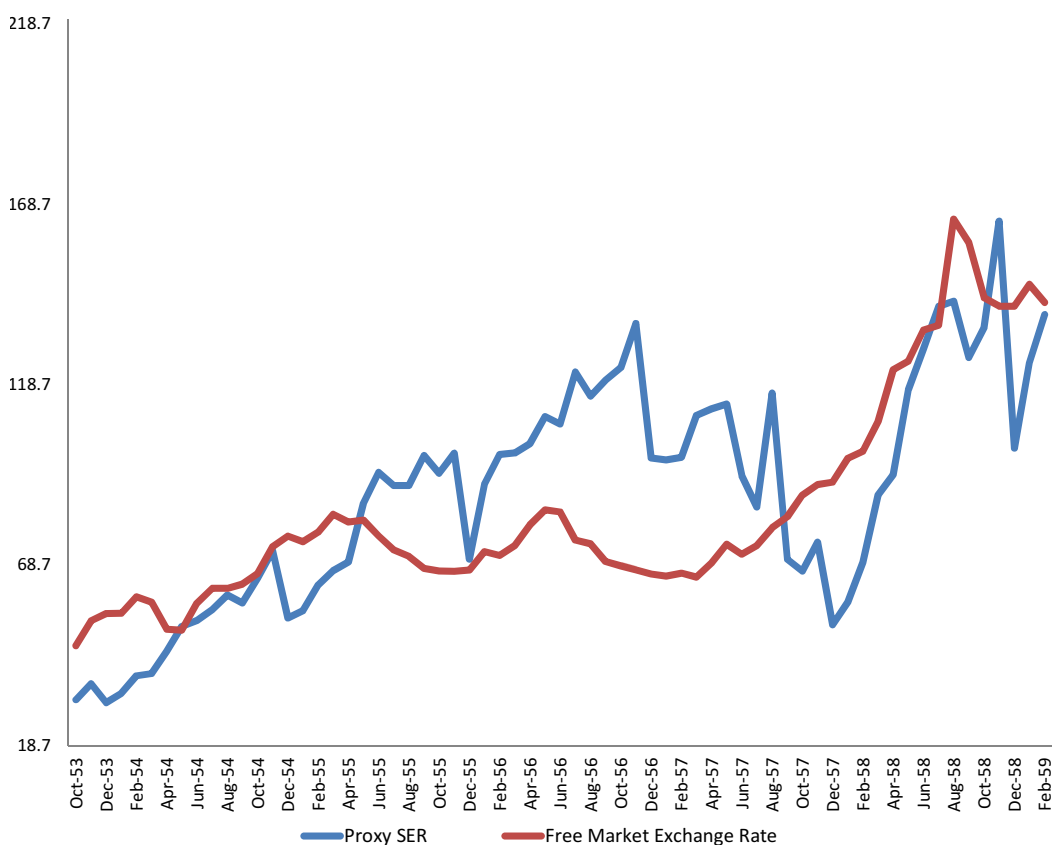
fundamentals, fluctuating according to the evolution of macroeconomic trends of foreign exchange flows, and without the effect of import and export tariffs and subsidies.

It is not a surprise, then, that the free market exchange rate predicted the depreciation of the MER, as shown in Chapter 6. Figure 6.5 showed how the free market exchange rate was not very different from the average weighted auction rates, and both cointegrated in the long term, suggesting that the free market was indeed performing according to underlying macroeconomic fundamentals. This guided authorities on the distribution of foreign exchange and on setting the minimum prices in the auctions, so that the weighted average MER followed a similar pattern to the free market rate. This means that the free market exchange rate provides a sort of natural experiment, in which the difference between the nominal exchange rate and the proxy SER can be used to estimate the effect of the policy intervention on the performance of the different industrial sectors.

However, while this theoretical discussion justifies the use of the free market exchange rate as a proxy for the SER in this counterfactual experiment, to make sure the free market exchange rate can indeed be considered a proxy of the SER and used to perform the counterfactual exercise, Appendix 1 follows the formula proposed by Brandão and Carvalho (1991) to estimate a bottom up SER and check whether this estimate is similar to the free market exchange rate. Using the dataset collected for this research, Appendix 1 estimates the SER by correcting the nominal exchange rate by the flows of exports and imports and the import and export subsidies and tariffs imposed during that period. The result is a new estimate of the SER based on fundamental data and cleaned of the effects of policy interventions. Figure 6.1 presents this new SER estimate in

comparison with the free market exchange rate. Appendix 1 concludes that not only are the two series highly correlated (65%) but they also cointegrate, with the free market exchange rate and the estimated SER following a long-term relationship. This leads to the conclusion that the free market exchange rate is indeed a good proxy of the SER that also reflects the fundamentals and can be used to performing the counterfactual experiment in this chapter. The detailed methodology to estimate the SER and test it against the free market is presented in Appendix 1.

Figure 7.1 – Proxy SER and Free Market Exchange Rate (Cr\$ per USD)



Sources: Free market exchange rate data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books*, (1951-1957), containing data from Banco do Brasil. Methodology for the SER series can be found in Appendix 1.

7.3 Econometric Methodology

A general equilibrium model would be the ideal method to perform this counterfactual experiment. Since industrial sectors interact in dynamic ways with each other, with links through the supply chain, a test on the overall impact of the different exchange rates would provide a full understanding of the impact of the MER on the economy. Microeconomically, the distortion in the performance of each sector would be expected to have a second order effect on other industrial sectors, given the possibility of substitution of goods between them. This basically means that a sector that is gaining from a weaker exchange rate, for example, and growing faster over time, could be causing a negative distortion for another sector if they have a substitution effect. This was probably the case for sectors that produced goods that could be replaced by other similar sectors' substitution goods but were allocated in different categories of the MER system. Any econometric method that attempts to estimate the distortion from the MER must therefore take into account these inter-sectoral effects. Unfortunately, however, data limitations do not allow the use of a general equilibrium model. The first complete inter-sectoral input-output data published in Brazil is for the year 2000,¹⁸ and before that there are only final industrial production series, rather than inter-sectoral sales and consumption.¹⁹

¹⁸ They are published by IBGE

(http://www.ibge.gov.br/home/estatistica/economia/matrizinsumo_produto/).

¹⁹ Barros and Guilhoto (2014) produced an interesting inter-regional input-output table for 1959, but it only includes linkages between sectors of different states and regions, rather than the matrix of all intersectoral relations.

In this case, the second-best alternative is a partial equilibrium framework, but with controls to account for macroeconomic trends such as economic activity, as well as monetary and fiscal policy, in order to account for all the underlying trends in the economy. In the partial equilibrium framework, individual time series regressions are estimated for each industrial sector with real industrial production as the dependent variable. The effective rate of protection (ERP) for each sector is used as the main explanatory variable. The ERP estimation follows Morley's (1969) approach and consists of the nominal MER for each sector adjusted for the protection given by import tariffs and the difference between domestic and international prices, which corrects for export subsidies or other domestic price distortions. The reason for using the ERP as the main explanatory variable, rather than the nominal MER for each sector, is to capture the full effect of the ISI policy interventions provided to each industrial sector via exchange rates, tariffs or other subsidies that could alter prices levels. This follows the theoretical discussion of Chapter 3, which showed that the ERP is the best way to capture the full level of protection provided by any ISI program. It is important to stress that, although the ERP captures the effect of the protectionism given to each sector during the 1950s, since tariffs were not present for most of the period and there were no export subsidies, most of the variation of the ERP for each sector is explained only by the variation of the MER import rate for each sector. This is why using the ERP as the main explanatory variable makes sure the regressions account for all possible protectionist measures, on both imports and exports, but acknowledging that most of the variation comes from the very large differences of the MERs.

The coefficient of the ERP in the regression captures the elasticity from the MER on the industrial production of each sector, which means individual

regressions rather than panel data are the more appropriate method. Panel data would give the average effect of the MER system on overall industrial production, which would not help to explain the industrial distortions in each sector. At the same time, the much larger quantity of information on the time horizon with 86 observations versus only 10 industrial sectors – data that is presented in the next sub-section – means that there is not enough variation under the cross-section space to perform a panel. For a robustness check, the results of a panel data exercise are also presented in Appendix 1, together with other alternative specifications for the regressions.

Another important aspect to mention on the design of the regressions is the choice for the real industrial production index as the dependent variable. An alternative would be to use each sector's productivity as the dependent variable, following the methodology used by O'Mahony and van Ark (2003), who have estimated industry level labor productivity for the European Union. Unfortunately, there is no available data on labor composition per sector for 1950s Brazil to produce similar productivity data. There are two labor censuses in Brazil in that period, in 1949 and 1959, but no high frequency data between them.

But while this could have been an interesting option for another robustness exercise of the regressions, using the industrial production indexes as dependent variables should endogenously capture the effect from the protectionist instruments also on each sector's productivity performance. As discussed in Section 7.1, protection could have improved each sector's performance via different channels, such as reducing foreign competition, increasing prices of imported goods, higher profit margin for the local manufacturer, or even increasing its productivity. Using the final industrial

production of each sector should also cover the productivity channel. Therefore, the proposed regression is:

$$\text{Real Industrial Production}_t = c + \beta_1 \text{ERP}_t + \text{Controls} + \text{ARMA terms} + e$$

This regression directly estimates the effect of the ERP on each individual sector. Based on the results of the, the β_1 coefficients are used to perform the counterfactual exercise. As previously discussed, the free market exchange rate is a good proxy of the SER of the MER regime. Using this proxy of the SER and the estimated regression coefficients β_1 , the ERP is substituted by the proxy SER to perform an in-sample simulation. The difference between the two series, the original industrial production for each sector and the in-sample forecast with the proxy SER, is the distortion, that is, the deviation from what the industrial production of that sector would have been if it had the proxy SER. The larger the difference between the two series, the larger the under or over performance of industrial production caused by the ERP.

There are two ways of analyzing the size of this distortion. The first is to examine the average monthly difference between the two series, which give a monthly average distortion. The second is to calculate only the final difference between the two series and check how different industrial production would have been by the end of 1950s. The first of these metrics, the average monthly distortion, can be used to build an index of weighted distortions of the overall industrial sector by applying the shares of each industrial sector. This index indicates whether the industrial sector as a whole was performing differently with the ERP rather than the SER for all sectors. The sample of industrial production data to be presented in the next sub-section represents between 65-75% of overall industrial production, so this index has to be adjusted to the

whole of industry. Three indexes are built using different assumptions for the distortion of the remaining share of industrial production that were not part of the econometric sample. The first index assumes the average distortion for the out of sample data; the second assumes no distortion; and the third assumes double the average distortion. This produces a range of indexes to assess how great the distortion may have been for the whole industrial sector.

A large set of controls is included in the regressions. First, to account for common macroeconomic trends and other general policies across industries, controls were added to account for economic activity (a GDP index), population growth, fiscal (the budget balance) and monetary policies (the monetary base). To account for the regime change of 1956, as in the exercises of Chapter 6, a dummy was included for before and after 1956. A seasonality dummy was also included to account for monthly effects. Finally data on Instruction 113 FDI flows were also included as control variables, since, as previously discussed, Instruction 113 allowed sectors to import capital goods and classify them as FDI after 1955. The regressions are performed in log and first difference, and ARMA terms are included to control for serial correlation problems.

To ensure the results are not spurious, Appendix 1 shows unit roots, cointegration tests, and VEC estimates for all the ERPs and industrial productions series used in the regressions. All series are stationary in difference; the cointegration tests show industrial production and ERP cointegrate in level, which suggests that they have a positive long-term relationship; and more importantly the VEC estimates suggest that in the short term the ERPs predict industrial production in the subsequent period. There is no evidence of inverse causality with industrial production predicting the

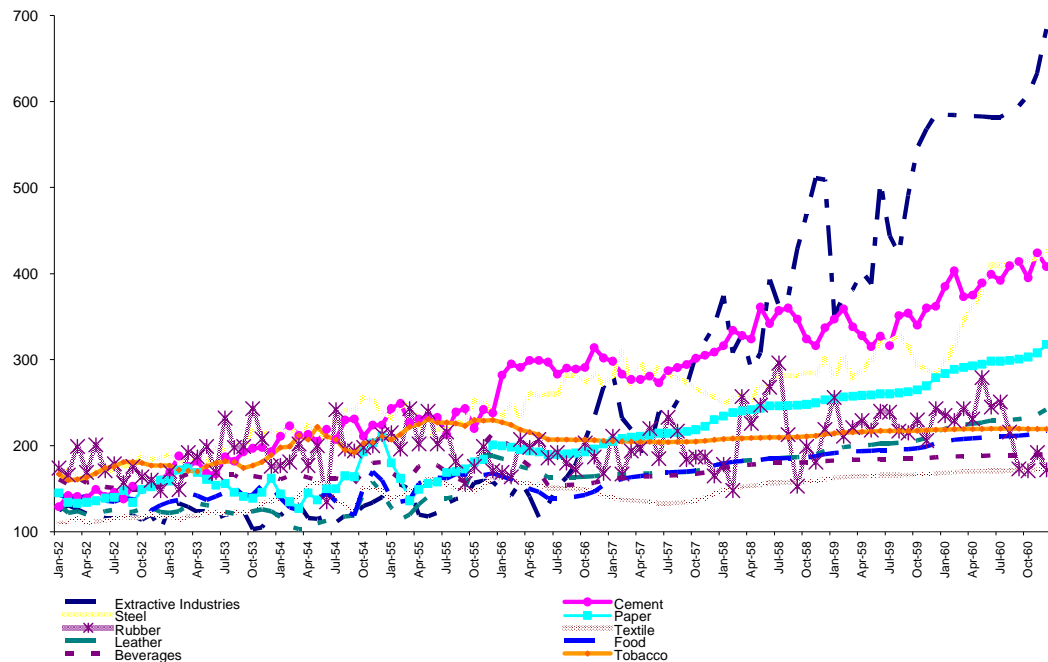
ERPs, which guarantees the non-existence of endogeneity problems in the regressions. These robustness exercises indicate that the counterfactual experiments are causation effects and allow robust estimates of the distortion in each sector.

In fact, the whole methodology of using the proxy SER to simulate industrial production is a way to protect against a possible endogeneity problem. In theory, an endogeneity problem could appear in these regressions if industrial production also had an inverse effect on the ERP. Since each ERP was the result of a separate market for each sector, conceptually they do not reflect the long-term fundamentals of the economy. The proxy SER, on the other hand, was free to fluctuate in the market, so it was the only exchange rate capturing the fundamentals. This makes the OLS estimations with the ERP, then the simulation with the proxy SER following the regressions, a way to guarantee that the inverse causality is not incorporated in the regressions. The tests of Appendix 1 and alternative regressions are also robustness exercises to guarantee that the results are free from endogeneity problems.

7.4 Dataset

The dataset used to perform the regression for the dependent variable comprises 10 industrial sectors that represented 65-75% of industrial production during the 86 months between 1953 and 1960. The data source is the FGV's *Revista de Conjuntura Econômica*, which reported indexes of real monthly industrial production during that decade. The IBGE's Industrial Censuses of 1949 and 1959 are the two benchmarks that show the monthly data covered between 65-75% of industrial production and are also used to produce the weighted indexes based on the results from the estimates.

Figure 7.2 – Real Industrial Growth in Brazil, 1952-1960 (1948=100)

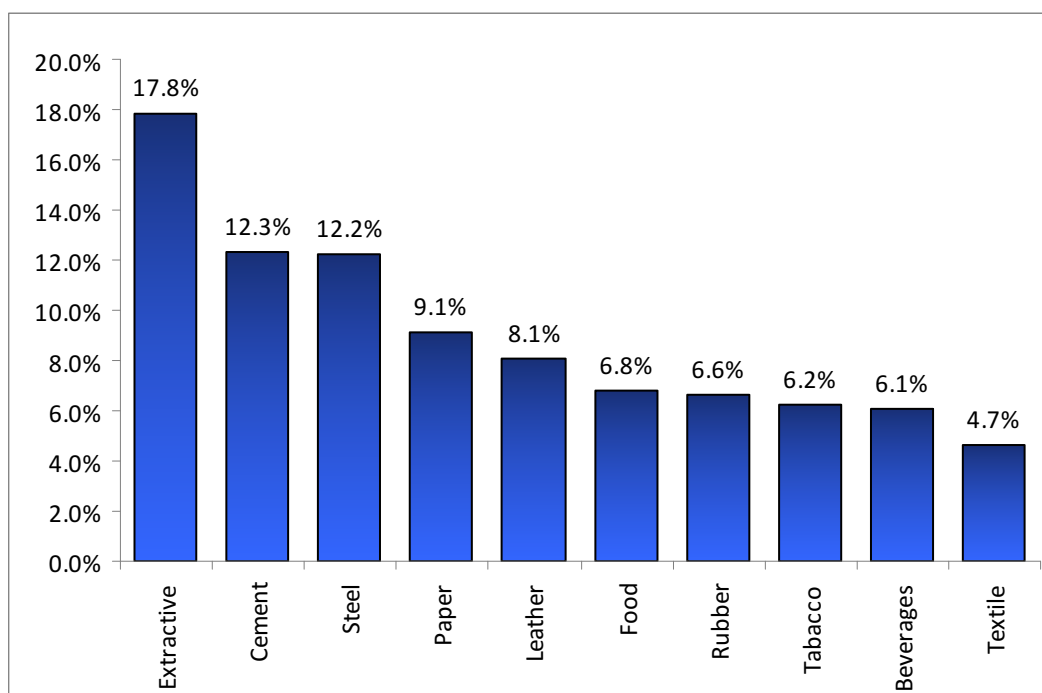


Source: Data from FGV's *Revista Conjuntura Economica* (1947-1958).

Figure 7.2 presents the output of the 10 sectors included in the dataset. It illustrates the process presented in Chapter 2, not only with a fast rise in industrial output during the 1950s but also the change in its composition. Traditional industries such as food, textiles, and leather saw their share of output reduced, having experienced much slower growth rates during the decade. The more advanced industries, such as steel and extractive industries, which included mining and oil, had much faster growth, becoming increasingly important in overall industrial structure. The sample does not include a few important modern industries, such as machinery and electrical equipment, which were important during the 1950s, as previously discussed. But given that the sample includes almost 75% of the industrial sector of Brazil, including a large variety of traditional and modern industries, the results

should be comprehensive enough to analyse the effects of protectionism on industrial development.

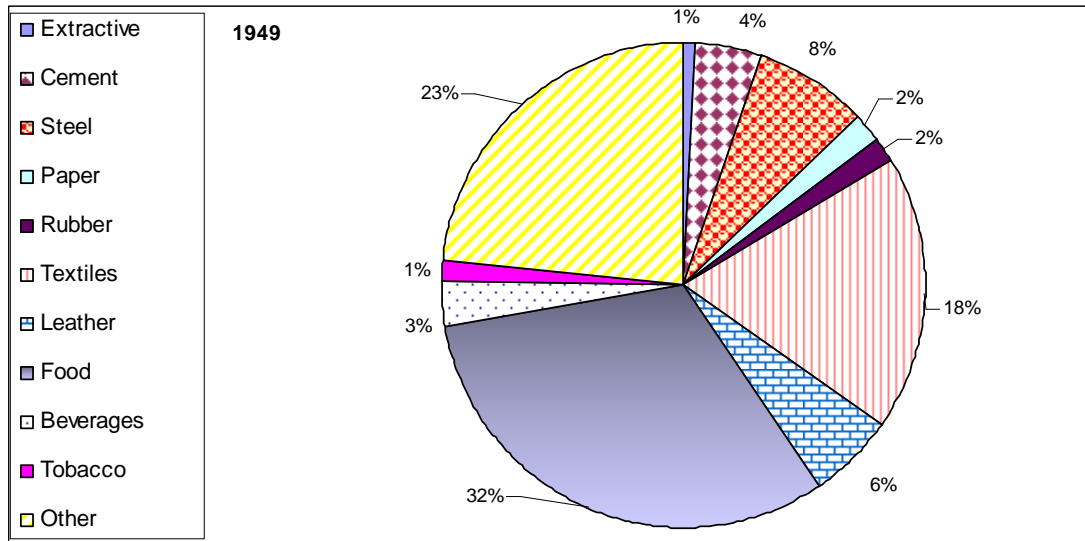
Figure 7.3 – Average Annual Real Industrial Growth by Sector, 1950-1960



Source: Data from FGV's *Revista Conjuntura Economica* (1950-1960). Averages were calculated based on annual real growth rates.

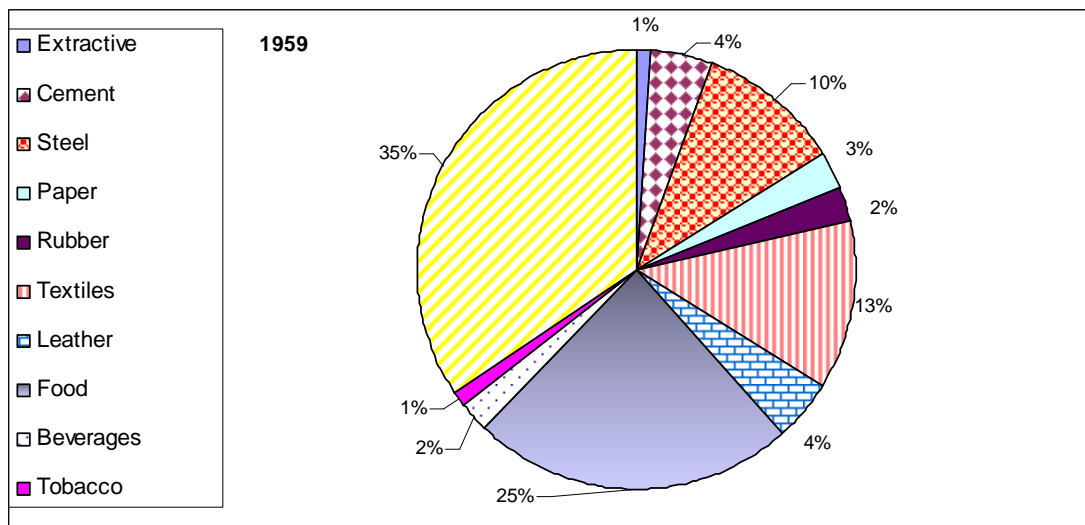
Figure 7.3 shows the average growth rates of the sectors in the 1950s, further confirming the substantially higher growth rates of sectors like steel, cement, and paper, which were all above 10% per year on average, in comparison to much lower average growth rates in traditional sectors, such as textiles or food, at around 5-6% per year. As shown in Table 3.1 in Chapter 3, the import substitution of the traditional sectors was mostly completed by the end of the 1940s. Consequently, the share of consumption goods in overall imports was only around 15% by the beginning of the 1950s, with capital goods, raw materials, and fuels representing almost the entire imports of the country (Gudin, 1969, p. 4).

Figure 7.4 – Industrial Composition in Brazil, 1949 (% of output)



Source: Data from IBGE's (1949) *Censo Industrial do Brasil*. Shares were calculated as percentages of industrial production output in nominal prices.

Figure 7.5 – Industrial Composition in Brazil, 1959 (% of output)



Source: Data from IBGE's (1959) *Censo Industrial do Brasil*. Shares were calculated as percentages of industrial production output in nominal prices.

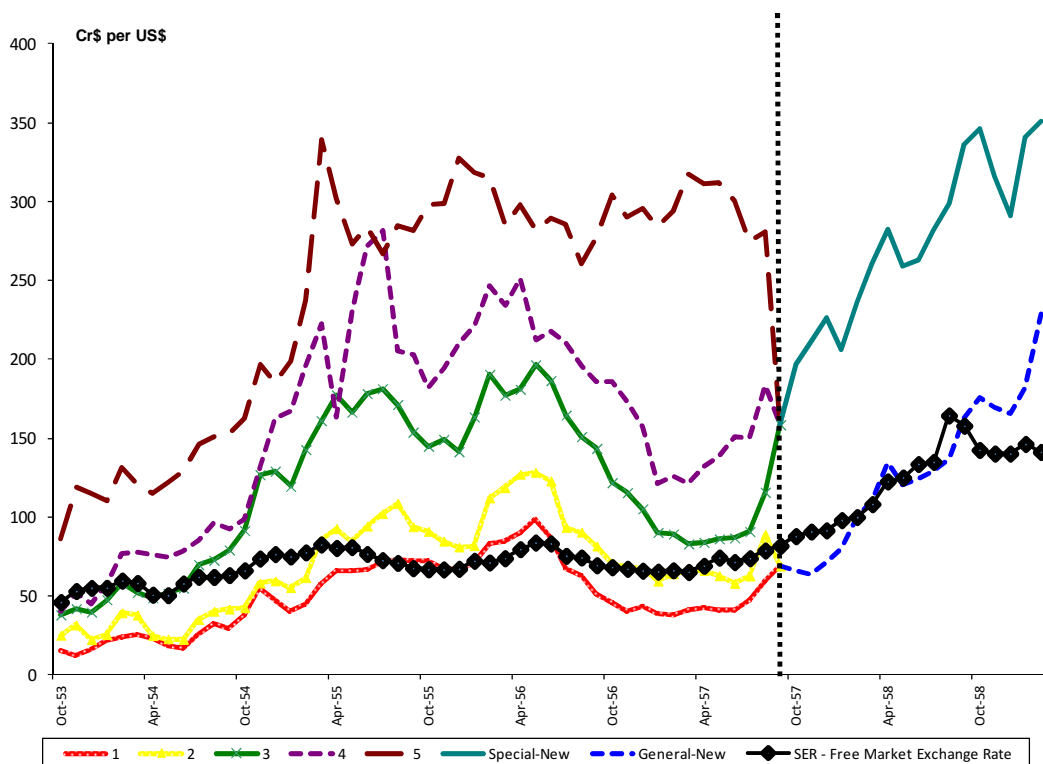
The result can be seen in Figures 7.4 and 7.5, which present the composition of the industrial sector in 1949 and 1959. The two figures show the change in the composition of the industrial sector before the start of the decade and by the end of the 1950s. The average GDP growth of the 1950s was 7.4% per year

(IBGE, 1950-1960), while industrial growth averaged about 10% per year (FGV, 1950-1960). This resulted in a significant increase of the share of the industrial sector in GDP, from 17% in 1949 to 30% in 1959 (IBGE, 1949-1959). It was in this context that advanced industries increased their share in industry and in GDP. Textiles and food were the two sectors with the largest decline in their share of industrial production. Food lost 7 percentage points, from 32% to 25%, while textiles lost 5 percentage points, from 18% to 13%. The main increase was in the advanced sectors, such as chemicals and plastic products, machinery, and the motor vehicles industry, which together increased their share from 23% to 35% of industry.

Based on the above information, it is possible to conclude that by the end of 1950s industrial production was more diversified, including most sectors, and more vertically integrated, with both capital and consumer goods being an important part of the structure. As shown in Chapter 3, the conventional interpretation of this shift in the composition of industrial development is based on the consensus view of ISI, with protectionist instruments used to stimulate the import substitution of advanced sectors. Although the compositional change of the industrial sector is an historical fact, as discussed above, the interpretation of the results from the econometric exercise in this chapter is a test to see whether the MER and tariffs were indeed behind this process.

For the explanatory variables, the dataset uses the same MER exchange rates presented in Chapter 6, adjusted by tariffs and price differences to estimate the ERPs of each sector following the methodology proposed by Morley (1969). Figure 6.6 shows the MERs and the SER, while Figure 7.7 shows the ERPs used in the regressions.

Figure 7.6 – Multiple Exchange Rates and the Shadow Exchange Rate (Cr\$ per US\$)

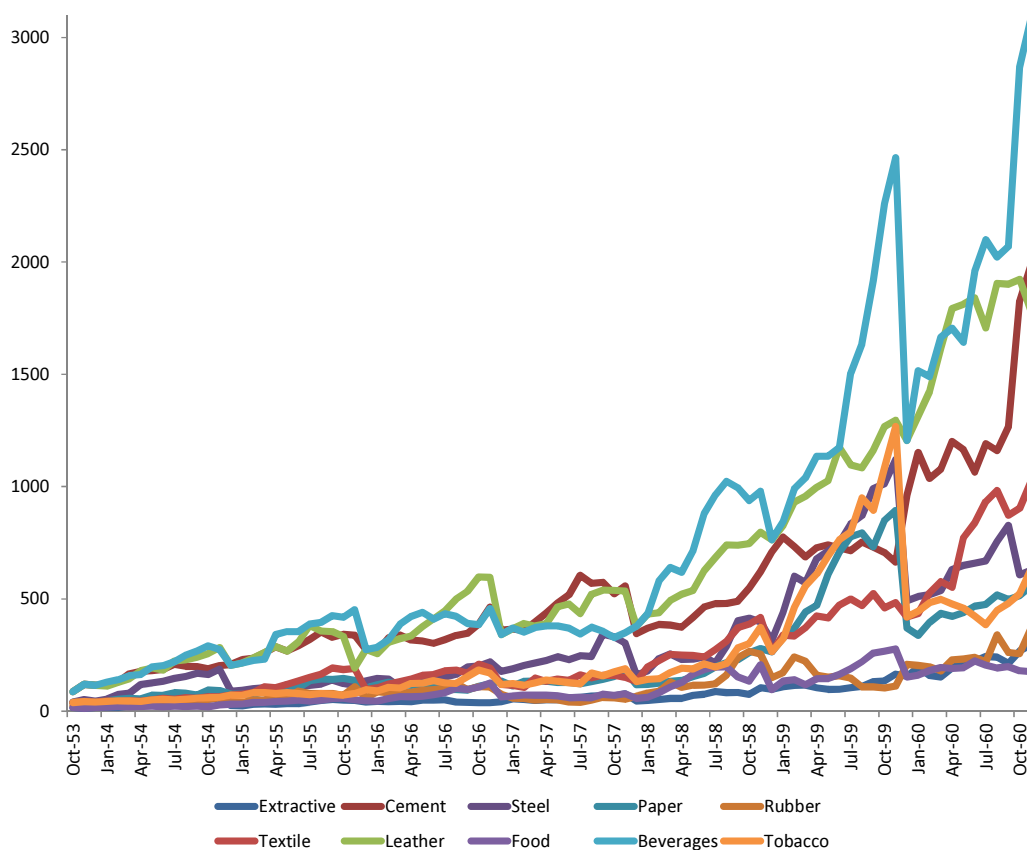


Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. See Appendix 4 for the methodology.

Figure 7.6 shows the different paths of the MERs and the SER, which is represented by the line with black diamonds. Until 1957, during the first phase of the system, there were five categories but then they were merged into two. It is worth noting that the SER runs close to Categories 1 and 2 during the first phase, and around the general exchange rate in the second phase of the system. This is not a surprise because, as shown in Chapter 5, most of the foreign exchange was distributed to Categories 1-3 and then later to the general exchange rate: they received about 80% of the available foreign exchange. Moreover, as the last econometric exercise of Chapter 5 showed, the SER anticipated the movement of the average weighted MER, which helped to

explain how officials managed to keep the system macroeconomically balanced. This means that if a distortion did indeed make a sector overperform, it would likely be a sector producing goods placed in Categories 4 and 5, which received less foreign exchange and consequentially were theoretically protected due to the weaker exchange rate. At the same time, underperformance would likely appear in sectors placed in the lower categories, which had, by contrast, stronger exchange rates than the SER.

Figure 7.7 – Effective Rates of Protection (Cr\$ per US\$)



Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Tariffs from Morley (1969, p. 307). Import and Export Prices from FGV's *Revista de Conjuntura Econômica* (1953-1961).

Figure 7.7 shows the ERPs for the 10 sectors, after the MERs of Figure 7.6 are adjusted by tariffs, and the internal and external prices of each industrial sector.

From the ten sectors of the sample of industrial production used for the econometric exercise, there is a good distribution among the five categories of the system. Food and extractive industries were part of Category 1; rubber in Category 2; paper, tobacco, leather, and textiles in Category 3; steel in Category 4; and cement and beverages in Category 5. To produce the ERP series for each individual sector for the full period, the exchange rate of the category the sector was placed in during the first phase was chained to the larger exchange rate category the sector was part of in the second phase. This produced exchange rate series fully individualized for each sector for the whole period of the experiment. These series were then adjusted by the size of the tariff protection after 1957 and the difference between the domestic and external prices of each sector.

Given the differences in prices and tariffs after 1957, there is a wide variation between the ERPs of the different sectors. Before 1957, the variation is essentially explained by the different MERs and the difference between the domestic and external prices of each sector. After 1957, when inflation accelerated and tariffs were imposed, this variation further increase, despite the reduction of the MER system from five to two exchange rates. The shift in the form of protection after 1957, as already discussed, had a clear impact on producing further differentiation between the sectors' ERPs. Overall, this data shows that, although there were five MERs during most of the period, industrial sectors in fact had very different ERPs, which could have affected their performance during the decade. The regressions will use these ERPs as the main explanatory variables, later replaced by the SER proxy (the free exchange rate market) to run the simulation and estimate the size of the

distortions. The results of the econometric estimates including the regressions, the in-sample forecasts, and the indices are presented in the next section.

7.5 Econometric Results

Table 7.1 presents the results of the individual regressions.

Table 7.1 – Regression Results, 1953-1961

Equation	Dependent Variable - Real Industrial Production Index (Log and 1st Difference)									
	Food	Beverages	Rubber	Leather	Cement	Extractive	Tobacco	Paper	Steel	Textile
OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Intercept	-22.218 (18.951)	5.405 (22.389)	33.221 (60.381)	-17.123 (23.354)	-6.420 (24.985)	26.863 (27.855)	-0.216 (11.047)	15.948 (18.251)	-1.154 (29.143)	7.790 (12.929)
Effective Rate of Protection (Log and 1st Difference)	-0.034 (0.015)	0.035 (0.016)	-0.119 (0.069)	0.032 (0.010)	0.018 (0.049)	0.111 (0.046)	0.001 (0.005)	0.041 (0.023)	0.123 (0.068)	-0.015 (0.022)
Controls										
113 FDI (Log & 1st Difference)	-0.002 (0.027)	-0.004 (0.016)	0.001 (0.044)	0.002 (0.030)	0.036 (0.033)	-0.005 (0.010)	0.002 (0.032)		-0.012 (0.013)	0.008 (0.012)
Exchange Rate Regime (Dummy)	-0.023 (0.038)	0.016 (0.037)	0.056 (0.077)	-0.027 (0.043)	0.001 (0.035)	0.060 (0.044)	0.011 (0.020)	0.020 (0.032)	-0.011 (0.054)	0.040 (0.023)
Seasonality	-0.001 (0.002)	0.004 (0.002)	-0.004 (0.005)	0.001 (0.002)	-0.001 (0.003)	0.022 (0.004)	0.000 (0.001)	0.005 (0.002)	-0.010 (0.004)	0.000 (0.002)
Economic Activity (Log)	-1.166 (0.848)	0.117 (1.007)	2.529 (3.087)	-0.580 (1.118)	-0.319 (1.197)	0.914 (1.274)	-0.294 (0.530)	0.501 (0.841)	-0.367 (1.312)	0.121 (0.625)
Population (Log)	1.728 (1.401)	-0.353 (1.665)	-2.906 (4.629)	1.201 (1.749)	0.493 (1.886)	-1.892 (2.078)	0.135 (0.835)	-1.103 (1.362)	0.219 (2.169)	-0.486 (0.978)
Monetary Policy	0.013 (0.015)	0.001 (0.012)	-0.057 (0.043)	0.001 (0.021)	0.000 (0.016)	-0.007 (0.015)	0.009 (0.010)	0.003 (0.013)	0.019 (0.021)	-0.001 (0.012)
Fiscal Policy	0.890 (0.834)	-0.197 (0.984)	-1.726 (2.606)	0.969 (1.091)	0.434 (1.141)	-2.053 (1.320)	0.226 (0.487)	-0.676 (0.802)	-0.051 (1.253)	-0.085 (0.582)
ARMA Terms	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Number of Observations	86	86	86	86	86	86	86	86	86	86
R-Squared	0.54	0.50	0.46	0.66	0.28	0.54	0.63	0.62	0.53	0.43
Adjusted R-Squared	0.45	0.40	0.36	0.58	0.16	0.42	0.55	0.51	0.46	0.35
Statistical Significance		1%	5%	10%						

Sources: MER data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books*, (1951-1957), containing data from Banco do Brasil. ERPs build using tariffs from Morley (1969, p. 307). Sectoral industrial production from FGV's *Revista de Conjuntura Econômica* (1953-1961). Instruction 113 FDI from Caputo (2007, p. 54) Population, monetary and fiscal policies from IBGE (2017). Methodology for the MER data can be found in Appendix 4.

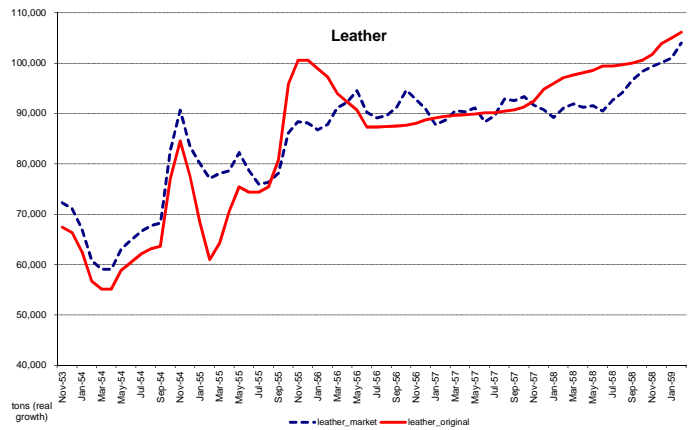
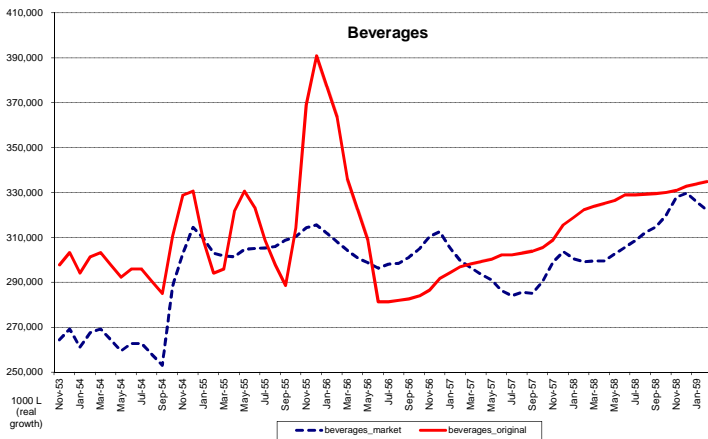
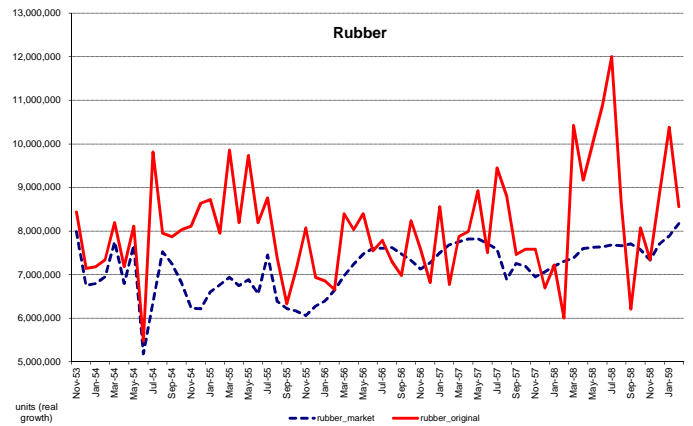
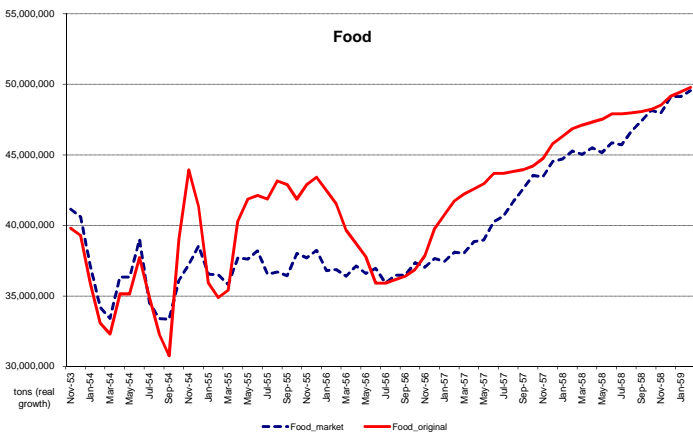
A few points are worth highlighting from Table 7.1. The elasticities of the ERPs to industrial production, the main explanatory variables, are small and statistically significant for most industrial sectors. The higher coefficients are for rubber, steel, and extractive industries, which are above 0.1. All other sectors have very small elasticities, normally close to 0. The interpretation of this coefficient follows the standard log-difference approach: in the case of rubber, for example, a 1% increase in the difference of the exchange between

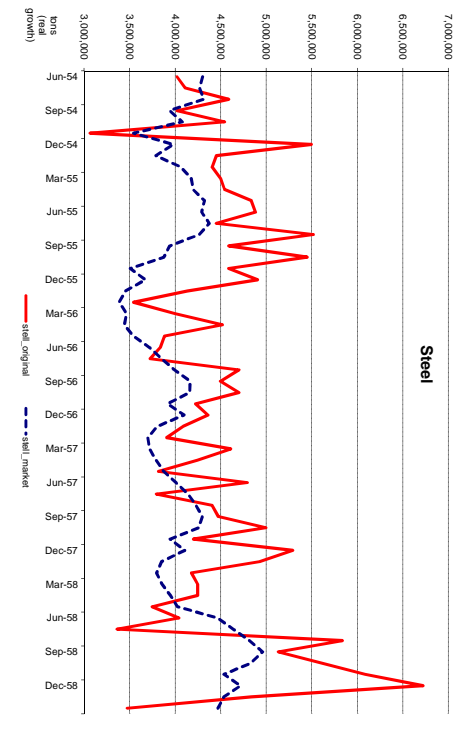
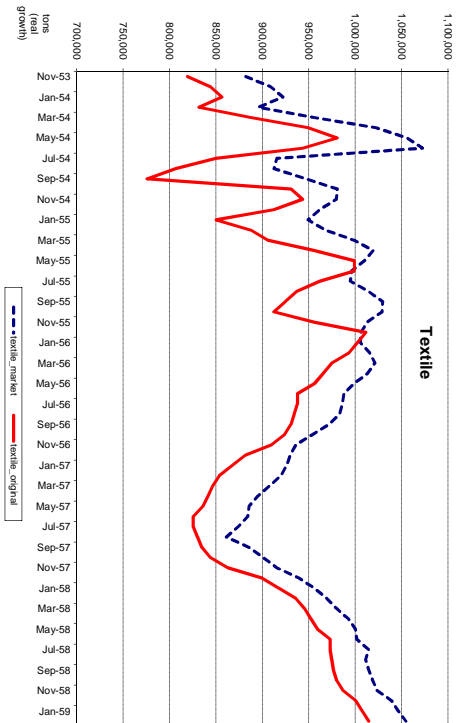
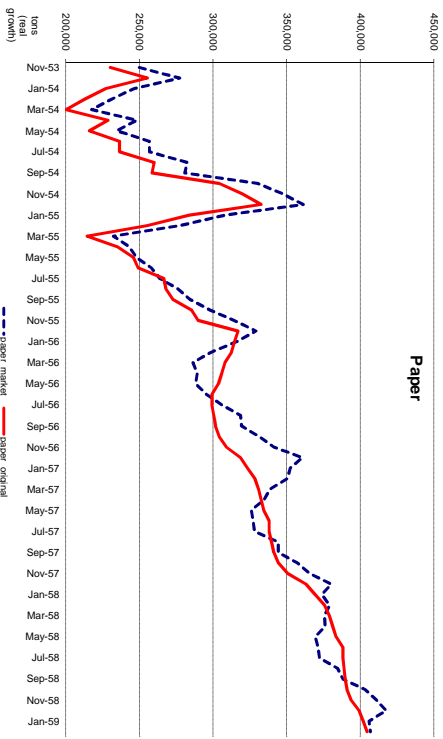
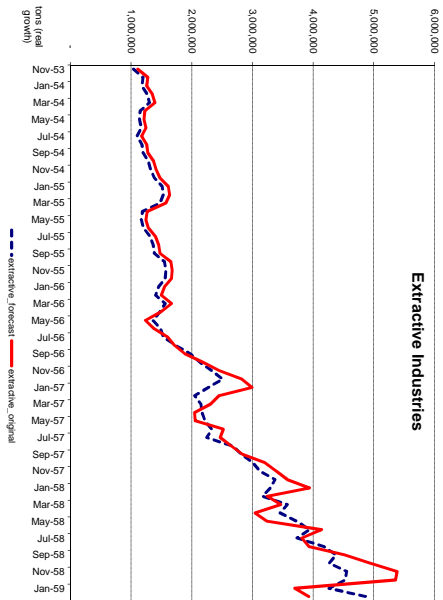
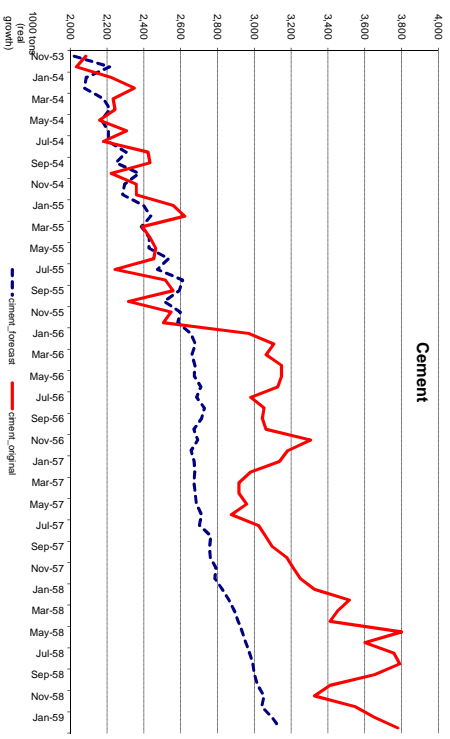
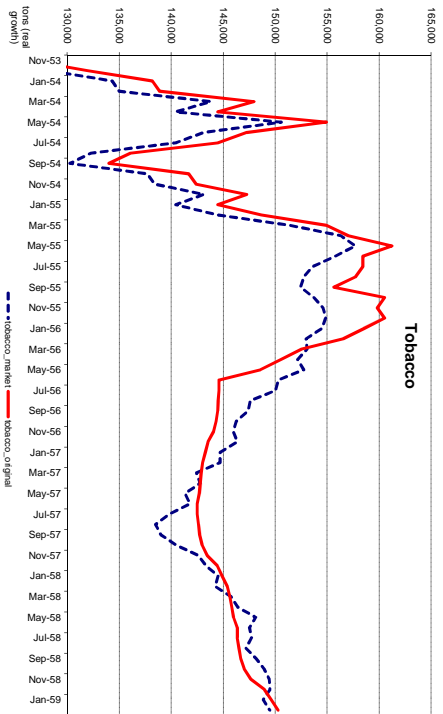
two months leads to a 0.11% increase in the annual growth rate of industrial production in the consecutive month. Since these coefficients represent the impact on the acceleration or deceleration of industrial growth, and not direct elasticities, they suggest a very small impact of the ERPs on industrial performance. The interpretation of these low and statistically significant coefficients is that the overall protection, coming mostly from the MER system, were not an important source of stimulus for the growth of most industrial sectors in the 1950s. It means, in other words, that they were not causing distortions, as the standard interpretation claims, as they did not change the performance of the sectors. It also means they were not an instrument behind the rise of the advanced industrial sectors, which challenges the emphasis of the ISI consensus on these instruments. The distortions indexes below will further explore this interpretation. Moreover, controls improve the performance of the regressions. In most cases, the macroeconomic controls increase adjusted R^2 . The same is true for population and FDI data. The inclusion of the ARMA terms also helps to guarantee that regressions do not have serial correlation and improves the forecasting performance.

Based on these regressions, and following the methodology proposed in the previous section, it is possible to perform the counterfactual exercise for each individual industrial production series by substituting the ERP with the proxy SER. As discussed, Appendix 1 shows that the proxy SER, the free market exchange rate, is similar to an estimated SER, which means it is a good proxy to perform a counterfactual exercise. The in-sample forecasts follow a dynamic process, in which each new data point is forecasted with the information of the new free market exchange rate and the outcome from the forecast in the previous period. This guarantees that the in-sample experiment reflects exactly

how industrial production would have looked like if just one variable, the ERP, had been changed for the SER. Figure 6.7 shows 10 graphs that compare the original industrial production series and the new in-sample forecast based on the SER.

Figure 7.7 – In-Sample Forecasts





Source: Data from FGV, *Revista Conjuntura Económica* (1947-1958). In-sample forecasts based on the regressions of Table 6.1.

The graphs reflect the coefficients of the regressions. Since most the exchange rate coefficients are small, the in-sample forecasted series are generally similar to the original industrial production series. This is particularly the case for the sectors with larger shares of industrial production, such as textiles, food, and leather. The similarity of the forecasted series and the original series also suggest that the regression analysis is robust and has a good forecasting precision. The distortions, that is, the gap between the original series and the forecasts, only appears in a few series in which the elasticities are larger than 0.1 in the regressions. This is the case for steel, in which the original series run above the forecasts for most of the series.

These results are consistent with the history of Brazilian industrial production in this period. The generally low impact of exchange rates is notable, particularly for the traditional industrial sectors in which protection usually plays an important role, like textiles. Only for more advanced sectors, which are capital intensive and take longer to develop, such as steel, do exchange rates appear to have had somewhat more impact. The opposite result would initially be expected, with traditional industries more linked to exchange rate protection. As part of the earlier phase of import substitution, they would have greater distortions than capital-intensive industries that depend less on the exchange rate. This is, however, explained by the shift of industrial production in the 1950s. As previously discussed, the import substitution of traditional industries was completed in the 1940s, which explains why the exchange rate did not play a role in supporting their growth during the 1950s. At the same time, the government targeted the development of advanced sectors, such as steel, and the estimates suggest the auction system played a minor role in helping to stimulate them. This suggests that the faster industrial growth of the

advanced sectors was the result of a different source, as the channels through which protectionism could have supported them, such as higher profit margins or reduced foreign competition, did not seem to have played an important role in the Brazilian case. Chapter 8 will show that the channels for the stronger performance of advanced industries were mainly the subsidies to import capital goods and the government's direct participation in these advanced industries. Overall, the results show that the performance of most sectors was not influenced by the MER system. The indices constructed below will reinforce the impression that, on average, the impact from the MER system on the overall performance of industry was almost non-existent.

The case of steel is apparently the only case in which the MER system played a small role in stimulating the sector. Its development, which will receive further attention in Chapter 8, is the best example of the government effort to participate in the industrial take off in the later part of the 1950s. During the 1940s and early 1950s, Brazil opened the first few small steel plants, such as CSN in 1941, ACESITA in 1951, and USIMINAS in 1956. But during the 1956-1961 Target Plan the sector really took off, with the government setting an ambitious target to increase steel production to 2.4 million tons per year, doubling the 1955 level (Andrade & Cunha, 2002, p. 2). This was why the steel sector was included in Category 4, receiving less foreign exchange and strong protection despite being an important input for domestic production, which was usually included in Categories 2 and 3. The econometric results show that this choice did help to provide some protection and faster industrial growth than would have otherwise happened with the free market exchange rate.

For all the other sectors, as the exchange rate was kept overvalued for a long period of time, the depreciations in the MERs and the adjusted ERPs did not

result in under or over performance, so it did not produce distortions. With these in-sample forecasts it is possible to estimate the exact size of the distortions for each sector, which are shown below at Table 7.2. As discussed in Section 7.2, the table presents the average monthly distortion, which is the monthly difference between the two series, and the final distortion, which is the difference by the end of the two series. The table shows both metrics for each industrial sector.

Table 7.2 – Industrial Distortion by Sector, 1953-1960

Industrial Distortions by Sector				
Industry	Original Category	Coefficient	Average Monthly Distortion	Final Distortion
Rubber	2	0.164	-10%	-6.5%
Steel	4	0.139	-10%	-3.3%
Food	1	0.097	-4%	-0.7%
Paper	3	-0.049	3%	2.2%
Extractive	1	-0.159	-4%	-3.5%
Beverages	5	0.037	-4%	-2.6%
Tobacco	3	0.037	2%	0.5%
Cement	5	-0.032	-9%	-4.0%
Textiles	3	0.02	6%	3.9%
Leather	3	0.029	1%	-2.9%

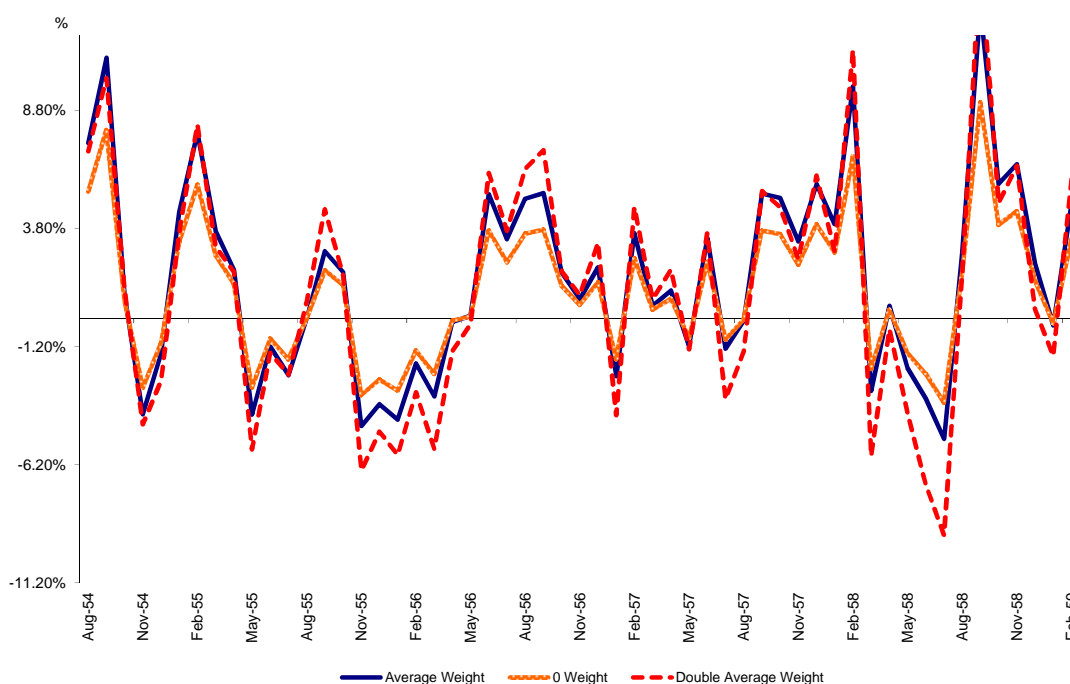
Source: Data from FGV's *Revista Conjuntura Economica* (1947-1958). In-sample forecasts based on regressions of Table 6.2. Final distortions were calculated by comparing the average six months production with the MER versus the SER, to control for seasonality in production.

For rubber and steel, the estimates show that both the average and final distortion were between -3% and -7%, which means that both sectors have over performed by these amounts on average at the end of the period. On the other hand, the underperformance of traditional sectors is very small, at around 0 to -4%, following the very low regression coefficients. This reinforces the impression that these traditional sectors did not benefit from the MER system because their import substitution was mostly completed earlier in the decade. Overall, the results show very small levels of under or over performance in comparison to the pace of industrial production growth in that period. On

average, industrial production grew at 5-12% per year, which means an accumulated industrial rise of around 82% over the decade. Compared to this, a 0 to -6% final distortion did little to change the overall rate of industrial growth.

Finally, based on the monthly average distortion, indices of the weighted average distortions for the whole industrial sector were constructed, and are presented below in Figure 6.8. The figure presents three variations of the index, assuming the out of sample industrial production to have the average weighted distortion of all other sectors, no distortions, or double the average distortion.

Figure 7.8 – Index of Weighted Industrial Distortions, 1954-1959



Sources: Data from FGV's *Revista Conjuntura Economica* (1947-1958). In-sample forecasts based on regressions of Table 6.2. Indexes were calculated by weighting the monthly distortions of the 10 industrial sectors.

The graph shows very small variations between the three indexes, reflecting the overall low level of average distortions throughout the period for the whole

industrial sector, and do not suggest an overall under or over performance of the industrial sector as a whole. This suggests that for distortions to have remained high for the whole decade, making them important for most of the industrial sectors on average, the ERP depreciations would have needed to have been much faster and have reached weaker levels. This confirms the findings of Chapter 6, which suggests that the MER system was replicating a market clearing process rather than forcing distortions in exchange rate markets. It also reflects the adjustment seen in the real exchange rate during the first phase of the MER system between 1953 and 1957, as was shown in Figure 4.1.

Finally, based on the indexes, it is possible to calculate the final distortion for each index for the whole period. This follows the same metric used in Table 7.2 for the end of the period but now using the final weighted average for all sectors. Table 7.3 confirms the conclusions above, showing the average distortions at around 3%. It confirms industrial production would have only been 3% higher on average had the auction system been replaced by the SER. This is extremely low compared to an accumulated industrial production of about 82% in real terms during the decade.

Table 7.3 – Final Sectorial Weighted Distortions

Final Sectorial Weighted Distortion		
Average Weight	0 Weight	Double Weight
5.11%	3.24%	5.66%

Sources: Data from FGV's *Revista Conjuntura Economica* (1947-1958). In-sample forecasts based on regressions of Table 6.2.

7.6 Chapter Conclusions

This chapter has investigated whether the MER system had negative externalities for industrial production in Brazil in the 1950s. By performing a

counterfactual exercise of substituting the ERP for the free market exchange rate in 10 different industrial sectors, plus a few alternative estimations and robustness checks in Appendix 1, the results refute the view that the MER system could have caused important distortions for industrial production. On average, the weighted average growth difference between industrial production with the MER and the free market exchange rate was only 3%, against a strong industrial production growth on average above 9% per year in real terms and an accumulated growth rate of about 82% during the decade. In most industrial sectors, particularly the larger ones, such as textiles, leather and food, which represented the bulk of Brazilian industrial production at the time, there were minimal distortions from the MERs, which suggests their growth pattern was not related to the MER system.

These results are explained, for the traditional industries, by the fact that their substitution of imports was already completed before the 1950s, which means the protection given by the MER system did not stimulate a faster production of these industries. These results provide two important contributions to the literature. First, the lack of distortions suggests that the MER system was not only a 'successful' experiment in its first phase because it supported balance of payments stability; it also did not cause sectoral distortions. The second contribution is a challenge to the consensus view of ISI, which sees the industrial shift of the 1950s as the result of protectionist instruments, such as the MER system and tariffs. By not changing the growth pattern of the industrial sectors, the MER system was an ineffective instrument to stimulate important substitution for both traditional and advanced sectors. The MER system in the 1950s neither produced distortions, as per the consensus view on

controls, nor formed an effective policy intervention to stimulate industrial growth, as predicted by the standard ISI model.

This leads to the next question of how this industrial performance was achieved if it was not through the use of the MER system and tariffs as protectionist instruments. Chapter 8, the last of the dissertation, explores how industrial growth was achieved and the political economy of the 1957 changes to the MER system. A government-led industrial deepening using the second MER system to subsidize private sector imports and increase its own participation in the economy were the main channels to stimulate the advanced industrial sectors.

8. The Multiple Uses of Multiple Exchange Rates: The Rise of 'Industrial Deepening' in Brazil

The last two chapters have analyzed the reasons behind the effectiveness of the first MER system in Brazil and the causes for its decay after 1957. Chapters 5 and 6 showed that the MER system was effective during its first phase (1953-1957), essentially due to the combination of the auction system and officials' response to changes in market demand, and was slowly dismantled in the second phase (1957-1961) with the rise in imports outside of the auctions. The system also did not generate 'distortions' to overall industrial growth, as shown in Chapter 7. It was not, therefore, an instrument for import substitution and does not explain the shift from traditional to advanced industrial sectors.

These findings suggest a macroeconomically effective policy system, but leave an important question open: why did the Kubitschek administration not keep the original MER system if, as shown, it was an effective way to maintain macroeconomic stability? Chapter 5 has shown that there were no substantial changes in macroeconomic conditions that could have triggered such a massive policy shift, which raises the question of what were the true objectives of the 1957 reforms. Even though from a macroeconomic approach the first MER phase was effective and did not produce distortions, from a welfare perspective both MER systems could have significantly altered the distribution of income in Brazilian society. The large literature on the political economy of controls discussed in Chapter 2 argues that in many cases the stated objectives of controls are in reality only excuses that hide policymakers' true political goals (Alesina & Tabellini, 1989; Alesina et al, 1993; Grilli & Milesi-Ferretti, 1995). This can vary from protecting certain sectors, increasing taxation, or passing the cost of a macroeconomic adjustment to specific social groups.

The official objectives of the 1957 shift to the second MER system was to create further differentiation between industrial sectors and stimulate the import substitution of advanced sectors (Sochaczewski, 1980, p. 92), which was supposed to be further promoted by increasing the openness to foreign investments via Instruction 113, which removed capital goods imports from the MER auctions (Malan, 1974, p. 5). As already shown in the last two chapters, however, the second system did not replace the protection of the MER with tariffs and did not stimulate the shift to advanced industries. The second MER system was principally just a way to dismantle the import restrictions of the original system, allowing a significant increase in imports outside the auctions.

If the policy shift was not a response to macroeconomic variables and in practice dismantled the original system, it is worth asking whether this process was politically motivated to produce a certain redistribution of welfare in Brazilian society. Understanding who were the winners and losers of the 1957 policy shift is the remaining aspect needed to comprehend the whole MER experience. This would not only add to the literature on the period, but if the reasons for the shift were indeed political, it would reinforce the results obtained in Chapters 6 and 7, which have shown that there was little wrong with the first MER framework.

Understanding the reasons behind the policy shift does more than just explain the political economy incentives for the use of exchange controls in Brazil. It also helps provide a new analysis of the origins of the industrial shift of the 1950s. If it was not through the protection of exchange rates and tariffs, how did policymakers promote the growth of advanced industrial sectors? Following the literature discussed in Chapter 3, one could ask if policymakers were using the MER system after 1957 to 'set the prices wrong' (Amsten, 1992)

and produce 'winners' in the industrial sector via channels other than protectionism. These channels may have been part of an 'industrial deepening' process similar to East Asia (Kuroiwa, 2015; Toshiyuki, 2005), and which Serra (1979, p. 117) claimed was already taking place in Brazil in the 1950s, confronting the traditional interpretation of the ISI model for the period (Tavares, 1975; Weisskoff, 1980; Versani & Barros, 1977; Baer, 1972). Understanding how policymakers changed the distribution of welfare between the two systems should also identify how they created the channels to stimulate industrial growth.

The existing literature on ISI in Brazil (Tavares, 1975; Weisskoff, 1980; Versani & Barros, 1977; Baer, 1972; Abreu et al, 1997; Colistete, 2006), as well as specifically on the MER system (Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987; Bergsman, 1980; Abreu, 1990; Caputo, 2007), does not identify the winners and loser of the two systems and how policymakers changed incentives for industrialization. This is the case even for authors who have a very critical view, arguing that the ISI model hurt consumers and only benefited industrialists, although without giving details for the Brazilian case (Taylor, 1998; Haber, 2006; Coatsworth & Williamson, 2004). Sochaczewski (1980, pp. 103-104) is one of the few authors who directly discuss the redistributive effects of the MER system in Brazil, with a partial identification of the winners and losers. He claims that importers were the main losers during both MER systems because their business was constrained and made more expensive by the auctions, and also because they were paying for the exporters' subsidy – the *bonificações* – while also providing revenues for the government with the auctions' tax. For him, the local industrialists were appropriating the benefits of the protection given by the system and the government was a

secondary beneficiary by appropriating part of the revenues from the auctions, although it distributed part of the funds to exporters. His view fits well with the consensus on the political economy of ISI, which places the cost of the industrial development on importers and consequentially local consumers, with industrialists as the main winners and the government as the secondary beneficiary.

Lyne (2015, pp. 77-78) provides an alternative model to the ISI consensus to interpret the political economy of the period. She provides a 'clientelistic' model in which the different interest groups' influence over politicians was not through direct popular voting but rather based on clientelism. Politicians directly exchanged support for policies that could benefit various important social groups, adjusting general policies to include exemptions and loopholes that would allow the most important political groups to always benefit from the government. Lyne (2015, p. 86) calls this a system of 'direct exchange linkages', in which politicians are not only providing benefits to a specific group in exchange for future votes (an 'indirect linkage'), but were rather providing direct benefits to various groups at the same time.

Still, although conceptually her model is interesting to interpret the political economy of 1950s, some of her conclusions follow Sochaczewski's (1980) interpretation. She claims that this system of 'direct exchanges' helped to partially protect exporters in the MER system because they received the bonus on top of the official exchange rates, while also receiving an important share of the subsidized credit from state-owned banks, such as Banco do Brasil, to fund their production. At the same time, industrialists were the main beneficiaries of the system with the protection from tariffs and the MER system, although the exemptions and subsidies to import outside the auction system granted at the

firm level were an important instrument to benefit different groups within the industrial sectors. This distinguishes her analysis from Sochaczewski (1980). Overall, her main argument is that the MER system during the 1950s was in fact more balanced in the distribution of welfare between the traditional agricultural producers and the rising industrialists than the literature on ISI has argued.

This chapter will present a different political economy interpretation, showing that Sochaczewski (1980) and the consensus analysis of ISI are inadequate for the Brazilian case, and although Lyne (2015) brings an interesting alternative model to interpret the period, some of her conclusions are not validated by the evidence. Industrialists were indeed one of groups who benefited from the new system, although not via protectionism but through the subsidies to imports of capital goods provided through the exemptions from the auctions created after 1957. Lyne (2015) correctly identified this channel, although she still emphasizes the protectionist effect. The much slower depreciation of the exporters' exchange rate versus the auction exchange rate makes exporters and not importers, despite the existence of the bonus to the former, the main group subsidizing the rest of the system. The system, which theoretically protected the exporters, and led Lyne (2015) to claim it balanced the distribution of welfare between agricultural producers and industrialists, was in practice highly punitive for agricultural exporters. Moreover, while Sochaczewski (1980) sees the government as only a secondary beneficiary of the new system and Lyne (2015) does not identify the government as a recipient of welfare, the government was in fact the main beneficiary of the second MER phase, financing its own participation in the industrial take off while also subsidizing the local industrial sector. The evidence suggests that the government was

financing and participating in an ‘industrial deepening’ process in Brazil at the expense of exporters while also ‘stealing’ the import market from the importers. These welfare redistributions were also the channels that generated the incentives behind the rise of advanced industries in the second half of the decade.

This chapter builds on a combination of quantitative and qualitative sources to reach these conclusions. First, quantitative analysis of the distribution of the costs and benefits of the two MER systems identifies which groups in society were being subsidized or were subsidizing others.²⁰ This uses the quantities and prices of the exchange rates already used in the previous chapters, as well as the *agios* and *bonificações* data, the subsidies and revenues for exporters, and the government’s revenues. The second part of the chapter focuses on qualitative sources to link the quantitative evidence to the political economy of that time, identifying the implicit objectives of policymakers. Sources used include the minutes of the Sumoc meetings, the personal archives of Vargas and Kubitschek, and newspapers of the time.

8.1 The End of Import Substitution

This section demonstrates that import substitution was not taking place in Brazil’s advanced industries in the second half of the 1950s. Chapter 6 has shown that the MER system and tariffs did not cause the growth of advanced

²⁰ It is important to highlight that this exercise does not have the purpose of comparing the welfare results of the MER to a theoretical benchmark of an environment without controls, but to find the welfare changes between the two systems. Microeconomically, both MER systems caused a general loss of welfare for society, but there is little to be gained for this research in calculating the theoretical loss of welfare for society as a whole.

sectors, challenging the common view of the traditional instruments of the ISI consensus. Nonetheless, it could still be argued that substitution in advanced sectors was an important aspect of industrialization in the second part of the 1950s, thus supporting the official explanation of the 1957 policy shift (Sochaczewski, 1980, p. 92). Indeed, the growth of the advanced industrial sectors was an undeniable fact, as was shown in Chapters 3 and 6. Yet this growth did not happen through the substitution of imports. The rise of imports in the second half of the 1950s happened in parallel to the growth of the advanced industries in Brazil. This is shown in Tables 8.1 and 8.2, which present the changes in import composition and the ratio of imports to domestic production during different moments of the 1950s.²¹

Table 8.1 – Import Composition and Import Ratios, 1949-1961 (%)

	% Imports Import Ratio		% Imports Import Ratio		% Imports Import Ratio	
	1949		1957		1961	
Steel	13.5%	29%	12.6%	13%	16.3%	13%
Machinery	17.5%	176%	15.4%	71%	19.4%	86%
Electrical Material	7.0%	81%	5.9%	15%	7.9%	20%
Transportation Material	18.6%	130%	25.3%	44%	17.2%	23%
Pharmaceutical	22.0%	41%	28.8%	25%	25.3%	21%
Minerals (Non-metals)	3.1%	11%	2.2%	5%	1.9%	5%
Paper	1.3%	11%	1.4%	6%	2.2%	8%
Rubber	0.1%	1%	1.2%	7%	3.2%	17%
Wood	0.2%	1%	0.2%	1%	0.2%	1%
Textiles	7.6%	7%	0.7%	1%	0.8%	1%
Food	7.8%	4%	4.9%	3%	4.3%	2%
Beverages	0.5%	2%	0.6%	3%	0.6%	3%
Editorial	0.4%	2%	0.6%	3%	0.6%	1%
Leather	0.3%	3%	0.1%	1%	0.0%	-

Source: Calculated from Tavares (1975, pp. 92-93). Original data from IBGE's industrial censuses of 1949 and 1959, and *Anuário de Produção Industrial* (1957). Import ratios are the ratio of imports to domestic production and calculated based on production values.

²¹ Tavares (1975) uses this data to argue that there was an impressive import substitution during the 1950s. The new reading of this data in this chapter provides a different interpretation, which shows how the process was not in fact import substitution.

Table 8.2 – Changes in Import Composition and Import Ratios, 1949-1961
(percentage points)

	Changes in Import Share (p.p)		Changes in Import Ratio (p.p)	
	1949-1957	1958-1961	1949-1957	1958-1961
Steel	-0.9	3.7	-15.4	-0.1
Machinery	-2.1	4	-105.4	15.1
Electrical Material	-1.1	2	-65.8	5.0
Transportation Material	6.7	-8.1	-86.5	-21.2
Pharmaceutical	6.8	-3.5	-16.5	-3.9
Minerals (Non-metals)	-0.9	-0.3	-5.8	-0.8
Paper	0.1	0.8	-5.0	2.2
Rubber	1.1	2	5.7	10.2
Wood	0	0	0.0	-0.3
Textiles	-6.9	0.1	-6.0	0.0
Food	-2.9	-0.6	-1.5	-0.3
Beverages	0.1	0	0.2	0.0
Editorial	0.2	0	0.8	-2.1
Leather	-0.2	-10.0%	-2.3	-

Source: Own construction based on Table 7.1. Import ratios are the ratio of imports to domestic production and calculated based on production values.

The tables allow a new reading of Brazil's industrialization in the 1950s. First, both tables show that by 1949 most of the consumer manufacturing sectors, durable and non-durable, had already completed their import substitution process, before both the Vargas and Kubitschek governments. Sectors such as textiles, leather, and food already had very low participation in the composition of imports and very low import ratios in 1949. Not surprisingly, the MER system did not help these sectors to further industrialize, as shown in Chapter 7.

But the second and most important finding from the data is that most of the advanced sectors had already been through the process of substitution before the reform of the MER system in 1957. The reduction in import ratios in sectors like steel, machinery, and electrical and transportation materials was also completed before the impact of the reform and the use of the discretionary

MER system with tariffs, which was theoretically targeted to promote import substitution in these advanced sectors (Sochczewski, 1980, p. 92). Between 1957 and 1961, despite the strong growth of advanced industries, there was surprisingly little change in the composition of imports and mostly no further declines in import ratios. In fact, import ratios actually increased in a few of these advanced sectors during the late 1950s, such as for machinery and electrical material. This suggests that the second MER system after 1957 was a period without import substitution, with the import ratios of advanced sectors remaining stable or rising until the end of the decade. They were, moreover, relatively high compared to traditional industries.

In her discussion of import substitution during this period, Tavares (1975, p. 94) argues that some advanced industries, such as steel, machinery, and electrical material, lost their dynamism during the later part of the 1950s, although she does not explain what happened. She essentially claims that there was a major import substitution effort during the whole decade and does not separate between the two periods. Other more recent works on import substitution also do not discuss these changes in the later part of 1950s (Abreu et al, 1997; Colistete, 2006; Villela, 2011), generally claiming that the whole industrialization process was based on the import substitution of advanced industries, which was not really the case for the end of the 1950s.

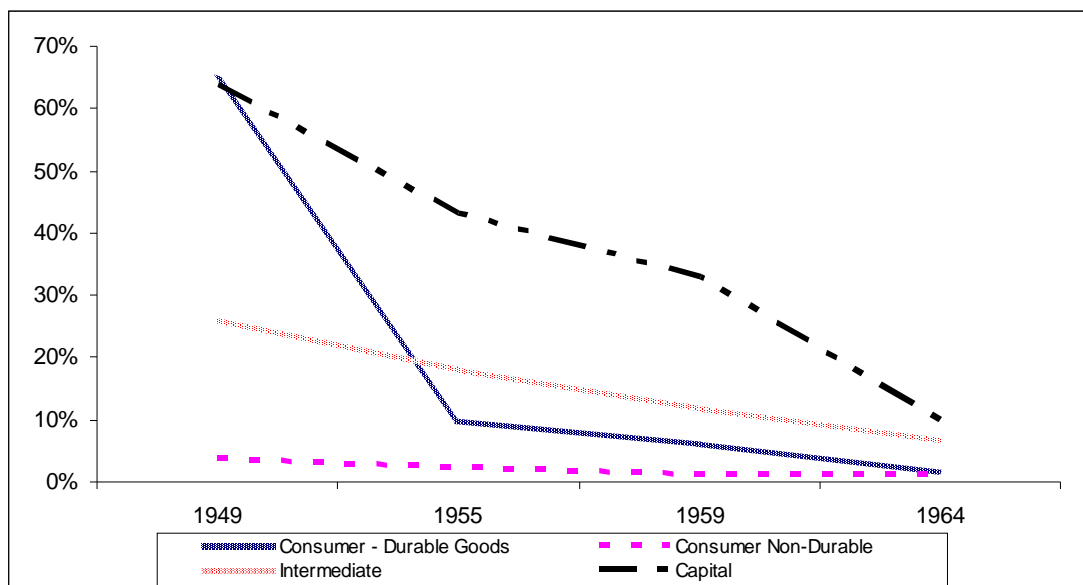
This raises the question of how it was possible to produce extremely fast industrial growth without substituting imports. Table 8.3 and Figure 8.1 start clarifying this process by highlight the 'industrial deepening' that took place. By analyzing imports as a percentage of total supply (imports plus local production), there is evidence of the falling reliance on imports for most capital and also some intermediate goods.

Table 8.3 – Imports to Total Supply Ratios (Percentage)

	Imports as Percentage of Total Supply		
	Consumer	Intermediate	Capital
1949	9	25.9	63.7
1955	2.9	17.9	43.2
1959	1.9	11.7	32.9
1964	1.3	6.6	9.8

Source: Compiled by Bergsman and Candal (1969, pp. 44-45). Original data from the IBGE's Industrial Censuses of 1949 and 1959, and the Industrial Register for 1955 and 1964. Imports to total supply ratio are the share of imports to domestic production plus imports and are calculate based on trade statistics and production values.

Figure 8.1 – Import to Total Supply Ratios, 1949-1964 (%)



Source: As in Table 7.3.

The key aspect is that if import ratios for industrial sectors were not falling in the later part of the 1950s, as seen in Table 8.1, but import ratios to total supply were in decline, as in Table 8.3, this was happening only because there was a significant increase in local production, not because of a process of substituting imports. Imports to total supply ratio only declined because the denominator (local production plus imports) was expanding rapidly. Domestic industrial production grew at an annual average of 9.1% per year in real terms during the second part of the decade, about 2 percentage points above the 1953-1957

average (IBGE, 1953-1957). Both imports and production were growing at similar rates, so that the import ratios remained stable. Sectors such as electrical material and machinery illustrate this process well. They had declines in import ratios of 65 and 105 points respectively during the first phase of the MER system (Table 8.1), but in the second, when most of the industrial growth was concentrated in such advanced sectors, import ratios increased by 5 and 15 points (Table 8.1). Imports were rising faster than local production, which shows that the second phase of the MER resulted in a very different form of industrial development. Clearly, as will be shown below, the rise in imports of capital goods and inputs for these advanced sectors was the main channel to deepen the industrialization of these industries and support their growth.

It is important to stress, based on the discussion of the ISI literature in Chapter 3, that some authors who adopt a broader definition of ISI, such as Bruton (1998) or Tavares (1975), would claim this rise in imports of advanced industries supported by government policies was still part of the general framework of ISI. For them, policies that were targeted to stimulate industries that were still not present in the country, including those leading to the increase of capital goods imports, was part of the ISI objectives. But as discussed in Chapter 3, most of the literature places a much stronger emphasis on the protectionist instruments and the more strict import substitution process of replacing foreign imports by local production. The evidence presented here goes against this more narrow form of the ISI model. If the process of industrialization was not the result of substituting imports, but resulted from a rise in imports based on government support, this should be classified as industrial deepening.

This rise of imports in the second half of the 1950s was discussed before in Chapter 5, where it was used to explain the decay of the MER system. Imports had declined significantly from an average of US\$1.4 billion during the pre-MER period of 1950-1952, when the balance of payments was on the verge of collapse, to US\$1.1 billion during 1953-1956, the years of the first MER system (IBGE, 1950-1957). From 1957 onwards, average imports picked back up again to almost US\$1.3 billion, and about US\$75 million more came in the form of capital goods under Instruction 113 (IBGE, 1957-1961; Caputo, 2007, p. 40). As shown in Chapter 5, there were almost no restrictions on imports during the second part of the 1950s, which explains how their level returned to near the pre-MER period.

This section has shown that not only were the instruments behind the industrialization of advanced sectors not tariffs and the MER system, but also that there was no substitution of advanced sector imports in the second half of the decade. After 1957, in fact, imports were rising side-by-side with domestic industrial output. The sub-sections below will show how this process supported industrialization.

8.2 Losing the Market

This section looks at the welfare position of the first group who actively participated in the MER system: the importers. The main question is whether the importers were really suffering the costs of the import restrictions, as claimed by Sochaczwesky (1980), or whether they could have benefited from the rise in imports observed after 1957.

First, it is important to understand exactly who the importers were. One relevant issue is whether importers were actually part of the local industrial

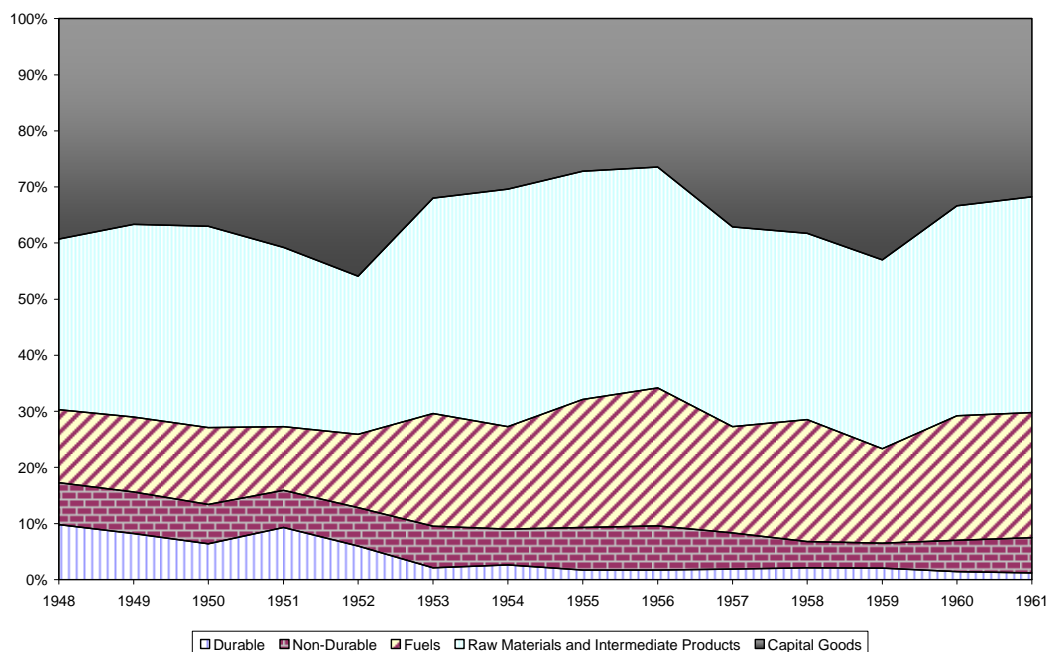
sector in a vertically integrated system in which they only functioned as an arm to import inputs for local production, or whether they were really an independent group with specific interests. If it is the former, then one should consider them as essentially local industrialists. This was not the case, however, because the importers were quite a distinct group in the framework of the MER system. Indeed, the MER regime was designed exactly to differentiate between importers and industrialists. Only registered import companies were allowed to participate in the auctions, and some institutional restrictions forced them to build a very different business compared to industrialists, in two ways. First, scale was needed to participate in the import business, given the high values of import licenses, which were set at a minimum of US\$1,000, forcing very small import companies out of the system if they could not bid on importing the minimum requirement. Moreover, importers were allowed to bid in any of the auction houses across the country, but only if they had formally opened branches in each location where they operated. As foreign currency was distributed across the country, only importers with a decent size business could join the auctions in more than one place (Kafka, 1956).

Second, and most important, importers were forced to pay for the licenses and the transfer tax – the tax on the amount of foreign exchange purchased for foreign currency – up front, while having up to 120 days to confirm the imports with Banco do Brasil and only then sell the goods locally, so they needed a large cash flow, which was provided in the form of credit by Banco do Brasil and could only be obtained by registered import companies. This was an official policy of the government and had the objective of helping importers to participate in the MER system, while excluding industrialists from the system (Kafka, 1956). These conditions were designed to create a full separation

between importers and the industrial sector. Importers were forced to build a complex business, with high levels of cash flow and presence in various parts of the country.

These conditions fit well with the usual description of importers as a separate social group in Brazil during this period. Skidmore (1982, p. 111) characterizes importers as a different group from local industrialists, as they were traditionally linked to the 'old' primary export model and the traditional elites, and were losing influence to a growing urban and industrial class. With most consumer sectors already supplied by domestic production by the end of the 1940s, they became mostly importers of fuels or raw materials, and to a smaller extent capital goods, as shown in Figure 8.2. These were sectors that had a small share of local production in total supply.

Figure 8.2 – Import Composition (%) – 1949-1964



Source: Data from Gudin (1969, pp. 4). Original data from CEPAL's *Economic Bulletin for Latin America*.

During the whole period from 1949 to 1961, durable and non-durable consumer goods, which were the larger sub-sectors of the domestic industrial business, represented a small part of overall imports. Most of the imports during both phases of the MER system were concentrated on fuels, raw materials, and capital goods, which were also the sectors receiving most of the foreign exchange in the auctions (Vianna, 1987, p. 54). Local supplies of fuels and raw materials, such as metals, were insufficient to meet the large demand from the booming industrial sector, and became the importers' main business during that period (Skidmore, 1982, p. 112). Capital goods were the other sub-sector in which importers were also present, particularly during the period 1953 to 1957, when they were still part of the auctions. After 1957 most capital goods were brought to the country via Instruction 113, which allowed industrialists to classify them as FDI outside of the MER system.

This evidence, both from the structure of the system, as well as from the composition of imports, suggests importers should be considered an independent group in the MER system, with their own incentives. But the most interesting aspect of this analysis is that importers were not subsidizing industrialists with the reduction of the MER constraint on their business, as Sochaczwesky (1980) claimed, because imports of consumer goods were quite small compared to imports of fuels and raw materials, which meant importers were complementarily to local industrialists. In practical terms, importers and industrialists were not competing for the same business, as both had incentives to increase imports, with industrialists benefiting from more inputs to the local manufacturing sector. Thus, when theoretically imports were constrained during 1953-1957, both groups were affected, and when they were liberalized, both could have benefited from it. This is a very distinct feature of the import

business in Brazil in the 1950s, which resulted from import substitution being largely completed for most consumer goods by the end of the 1940s.

Yet, while theoretically they would both benefit from the relaxation of import controls after 1957, the data actually tell a different story: even as imports rose during the second MER system, import companies lost their share of the import market to the government and industrialists. After 1957, the rise of imports via Instruction 113 and the exemptions given to the private sector, as well as direct imports by the government, was a major feature of the second phase of the system. So while importers' relative position could have improved after 1957 if they had kept their share of the import business, it was actually being reduced. Table 8.4 shows these changes in the importers' relative welfare position.

Table 8.4 – Importers' Costs and Benefits, 1950-1960

	Total Imports (US\$ million)	% of Imports from Government and Industrialists	Average Imports by Importers (US\$ million)	Imports % Change	Importers Average Exchange Rate (Cr\$ per US\$)	Cost/Benefit (Cr\$)	"Agios" + Tariffs Revenues (Cr\$)	Ratio Cost/Benefit to Government Revenues
1950-1952	1446.33	40.0%	867.8					
1953-1956	1167.75	44.5%	648.1	-25.3%	80.44	-13,198,604	29,065,179	45%
1957-1960	1241.75	63.6%	452.0	-30.3%	165.53	-22,639,008	83,000,335	27%

Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Trade data from IBGE's *Anuários Estatísticos* (1950-1960). See Appendix 4 for the methodology.

This table was calculated using the following process: in the first three columns the imports made directly by industrialists and the government are subtracted from total imports to calculate the share of overall imports that was in the hand of the traditional importers. After 1957, a large part of imports took place outside the auctions, which reduced significantly the imports performed by the import companies. The first decline in the importers' income from the pre-MER period to 1953-1957 resulted essentially from the overall decline in imports, given the restrictions imposed by the first auction system, which was by design. The second decline after 1957, by contrast, was in a context of

increasing imports, with the import companies losing their share. The remaining part of the table calculates the financial cost of this decline and its size compared to government revenues from the MER system.

The table shows that import companies did suffer a significant decline in their business during the whole period, even though they had a complementary business to local industrialists and could have benefited from the rise in imports after 1957. When the first phase of the MER system is compared to the pre-MER period, the value of the import companies' imports fell by 25.3%. Considering that the average import exchange rate for the period and the overall level of *agios*, the revenues from the MER system collected by the government, importers lost what represented about 45% of the amount of government revenues from the MER system at the time. After 1957 this decline continued because their market was being taken away by the government and the private sector. The fast depreciation of the importers' average exchange rate in the auctions helped to compensate for part of the losses in local currency, but it was not enough. Imports in foreign currency by importers declined another 30.3% during the second phase of the system, against the increased share of government and private sector imports. Capital goods were the sub-sector in which the importers' business was most affected, given the formal process to import outside the auctions via Instruction 113. So while the composition of imports during the whole period remained relatively stable, as seen in Figure 8.2, the share of the different participants in the importing business did not. The importers' loss of share during the second phase of the MER system is impressive, given that the overall level of imports rose by 6%, even as imports by importers declined. This decline represented 27% of the government revenues from the system in the second phase of the MER.

This reveals a very different position of importers during the two MER phases. Importers did suffer from the MER system as their business declined during the whole MER period, but the most important difference was the cause of this decline. During the first phase, they had a reduction of business due to the balance of payments adjustment. During the second phase, their loss came from a change in relative position. Imports were rising overall for the economy but their business was in decline. The government and the private sector were 'stealing' their business. The following sections will analyze how the market for imports was transferred to industrialists and the government.

8.3 Growing Export Appropriation

The situation for exporters was to a certain extent exactly the opposite. While importers were bearing the burden of balance of payments adjustments during the first phase, then had their market 'stolen' by the government and industrialists during the second, exporters benefited from a specific policy designed to share with them the benefits from the MER system. That was, however, not enough, as they were in fact the group providing most of the subsidies to the government and industrialists.

Sumoc's policies targeted at exporters were the bonuses ('bonificações') and the fixed exchange rate for exports, which was intended to compensate for the depreciation of the import MERs. Exporters, particularly coffee producers, were the main source of foreign exchange and still had a relatively important position in Brazilian society in the early 1950s (Skidmore, 1982, p. 114). There was a clear concern on the part of policymakers in the Vargas period to compensate coffee exporters, which was reflected in the design of the first MER system. Qualitative sources in Section 8.7 will show the explicit objective of

Vargas to support coffee exporters with this bonus. But as discussed in Chapter 5, this was not only the case for coffee producers. By the early 1950s, policymakers also knew coffee production was facing an important structural decline, and were concerned to stimulate manufactured exports. Coffee represented about 60% of overall exports, while manufacturing goods only accounted for 3% in 1953 (Bergsman, 1970 p. 100). Sumoc minutes from the end of 1953 show that this was the reason why manufactured exports initially received a bonus that was twice that of coffee exports (Cr\$10.0 per dollar versus Cr\$5.0 per dollar for coffee exports), which was a clear attempt to stimulate manufactured exports (Sumoc Minutes 408, 9/10/1953).

From a theoretical viewpoint, the bonus for the exporters differs from Leff's (1967) claim that exporters never had any stimulus to their business during this period. He argued that exports were seen only as a form of 'leftover' from production that was not internally consumed, and policymakers were only concerned with import substitution. But it fits with Lyne's (2015) interpretation that this was a policy tweak of a 'clientelist' model intended to support the exporters, a still relevant interest group in the Brazilian society. The bonuses, for example, were given to all exporters, but coffee represented on average 61% of overall exports and coffee producers were the driving force behind the policy (Bergsman, 1970, p. 100).

The problem was that the two policies were not enough to compensate for the appropriation of their income, and exporters were actually the major source of subsidy for all other groups in the MER system, which means Leff was actually correct in identifying the prejudice against exporters and Lyne did not see that in practice the policy system did not protect the exporters. This structure also fits with Tyler (1983, p. 9), who claims policymakers in Brazil had a strong

'anti-export' bias embedded in the import substitution policies of that period. The bonus was far from enough to compensate for the widening of the gap between the importers' and exporters' average exchange rates, which meant that the implicit subsidy exporters were providing to the whole system was only growing over time (Figure 5.3 in Chapter 5). The policy of increasing the bonus to exporters happened during the whole period and accelerated after 1957. However, the strong depreciation of the average import exchange rate, particularly after 1957, only made this gap wider, with this bonus never sufficient to close it. The lack of control over imports during the second phase, combined with the increased money supply and government spending after 1957, produced strong inflationary pressures, which consequentially pressured the import MERs to depreciate.

Table 8.5 – Exporters' Costs and Benefits, 1953-1960

	Importers Average Exchange Rate	Exporters Average Exchange Rate	Exchange Rate Ratio Importers/Exporters	Implicit Subsidy (appropriation)	Nominal Appropriation
1953	32.6	27.0	1.208	16.8%	\$8,428,297
1954	54.0	31.6	1.706	37.1%	\$31,181,236
1955	113.2	37.1	3.052	66.9%	\$107,430,544
1956	121.9	40.3	3.025	65.1%	\$117,708,392
1957	81.7	46.7	1.750	42.2%	\$47,947,078
1958	149.9	57.1	2.623	61.1%	\$113,879,515
1959	199.7	79.1	2.523	59.2%	\$151,581,780
1960	230.9	78.7	2.932	65.8%	\$192,913,197

Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Trade data from IBGE's *Anuários Estatísticos* (1950-1960). See Appendix 4 for the methodology.

The result of this wider gap is assessed in Table 8.5, where the cost for the exporters is calculated. The third column of the table shows the increase in the ratio between the importers' average exchange rate and the exporters' exchange rate, which rose from 1.2 at the beginning of the system to 2.9 at its

end. This means the import exchange rate was 2.9 times the export rate by the end of the system. From this the appropriation, the exporters' loss of income is calculated in the fourth column. During the second phase, more than 60% of the revenues that would have gone to them had they had the same exchange rate as importers was appropriated. This calculation already includes the bonus to the exporters in their average exchange rate.

These results suggest a much larger appropriation than the ones estimated by Oliveira (1986), who, as discussed in Chapter 7, is the only author to have previously estimated this appropriation. Oliveira estimated the tax imposed on exporters by looking at the difference between the nominal exchange rate and the SER. He claims the difference resulted in an implicit taxation of about 25-30% on exports during the 1950s. It is not clear, however, which nominal exchange rate he used for the comparison, and there is no differentiation between the import and the export exchange rates. The calculations above suggest a much larger appropriation of around 60% on average during the period.

One of the questions these numbers raise is why the exporters, particularly coffee producers, who in the past had been one of the most well organized and influential groups in Brazilian society (Skidmore, 1982, p. 114; Suzigan, 2000, p. 30), did not manage to block or reduce this growing appropriation. Why did they keep selling their foreign exchange to the MER system and not try to keep foreign exchange abroad? This is a particularly important question because coffee exporters remained the most important source of foreign exchange for the whole period, as Table 8.6 shows.

Table 8.6 – Export Composition, 1949-1961

	Coffee	Other Food	Raw Materials	Manufacturers	Total
1949	58%	10%	29%	3%	100%
1950	64%	11%	24%	1%	100%
1951	60%	9%	30%	1%	100%
1952	74%	8%	18%	1%	100%
1953	71%	10%	19%	1%	100%
1954	61%	13%	25%	1%	100%
1955	59%	15%	24%	2%	100%
1956	69%	10%	19%	2%	100%
1957	61%	14%	23%	2%	100%
1958	55%	21%	22%	2%	100%
1959	57%	18%	16%	8%	100%
1960	56%	18%	23%	3%	100%
1961	51%	16%	30%	4%	100%

Source: Bergsman (1970 p. 100). Original data from CEPAL's *Economic Bulletin for Latin America*.

Coffee exporters were during the 1950s gradually losing their relative importance in Brazilian society. The transition from Vargas to Kubitschek, as shown in Chapter 3, marked a significance loss of influence of coffee producers and the traditional agricultural elite in general. The group had still managed to influence Vargas' government, as exemplified by the creation of the bonuses as a way of rebating part of the appropriation. When designing the system, Ministry of Finance officials explicitly reported to Vargas that this mechanism was a solution to respond to the demand of coffee producers for less appropriation (Dossier for President Getulio Vargas, Ministry of Finance, CPDOC-FGV, 1953, pp. 4-5). The Vargas government was clearly divided between the influence of the 'old' elite and the growing presence of the industrial sector (Leopoldi, 2000). During the second half of the 1950s, the Kubitschek government, by contrast, had a much stronger policy stance of national and industrial development (Bielschowsky, 1996), with the coffee sector further losing their political influence.

Hirschman (1968) claimed that the use of the exchange rate system to appropriate the revenues from agricultural exporters was just an 'opaque' way to tax the exporters, which given their historical political influence have always managed to block any attempts for direct taxation of their production or land. So the appropriation was, then, a new indirect channel to fund the rest of the system from the coffee exporters but without having to directly tax the exporters. Given the size of the appropriation and with coffee exports still representing 60% of foreign exchange inflows, this explanation does not seem sufficient. Clearly, Hirschman (1968) was right that the instrument was a way to tax the coffee exporters and fund the rest of the system, as shown above. But as Lyne (2015, p. 85) suggested, it is difficult to argue that the appropriation would have been unnoticed by exporters. In fact, qualitative evidence in Section 7.7 below shows that the exporters were publically complaining of the government's proposal for the second MER system in newspapers in 1957, as they knew the incoming MER system would increase the appropriation of their foreign exchange. Lyne's (2015, p. 92) alternative explanation is that appropriation was not unnoticed, but compensated for by the bonuses from the MER system and the loans that Banco do Brasil provided to the sector.

The evidence presented above showed that the bonus was not enough to compensate the sector, and although there was some state-backed credit was provided, this was also too small to compensate for the appropriation. Between 1956 and 1960, Banco do Brasil's loans to agricultural producers represented 10% of the gross agricultural product of the country, with coffee representing about 30% of this total (Smith, 1969, p. 240). This was about Cr\$ 9.5 billion on average between 1956 and 1960 (calculated based on Banco do Brasil credit data from IBGE, 2017), 7.5% of the average annual appropriation from the exporters

through the MER system. These loans did receive highly subsidized interest rates of about half of the level of inflation during the second half of the 1950s (Smith, 1969, p. 240). So Lyne (2015) was right that they were also a subsidy to compensate exporters, but as in the case of the bonus from the MER system, this credit was also too small to compensate for the large size of the appropriation.

The reason for the inability to reduce the appropriation results from the structural changes in the global coffee sector and the producers' dependence on the government in that context. During the second half of the 1950s there was a rising overproduction of coffee in the world, which resulted in a decline of coffee prices of 29% between 1957 and 1959 (Abreu, 1990, p. 405). Brazil was an important part of this overproduction, with local production at 44 million bags by 1959, enough to supply the full 42 million bags of global demand on its own. Global production was at 79 million bags (Klein & Luna, 2014, p. 174). With Brazil's contribution to global production falling to about 50%, and the rest of global production being almost enough to fulfill the global demand, Brazil's share of the world market was reaching the price elasticity of demand (Krasner, 1994, p. 93). The capacity to influence external coffee prices, which played an important role in Brazilian policymaking in the first half of the century, was almost inexistence in the 1950s, as cuts in supply did not affect external prices (Krasner, 1994, p. 94).

Still, the Kubitschek administration tried to influence markets and contain the fall of prices by organizing a stockpiling system of coffee in warehouses across the country to prevent coffee from reaching the market. The government did not buy the coffee, as previous administrations had done in the first half of the century, but organized a system in agreement with coffee producers to keep

part of their production from reaching the market (Netto & Pinto, 1973). By 1959 69 million bags of coffee were stored across the country (Luna & Klein, 2014, pp. 174-175). But this was not enough to contain the decline in coffee prices, given that global markets remained in overproduction even with less coffee from Brazil reaching international markets (Krasner, 1994, p. 93).

The coffee business was in an irreversible structural decline and the capacity to influence external prices, and consequentially internal policies, were also waning. Nonetheless, the stockpiling process was producers' only hope to save their sector, which meant they were highly dependent on government support during this period. The administration was, in practice, influencing the amount of coffee that reached the markets and which producers were kept from selling their production. In the context of the structural decline and dependence on government support, coffee exporters did not have an alternative other than selling their foreign exchange to the government and accept the rising appropriation.

Thus, while Sumoc increased the bonus during the MER experience and the government provided some subsidized credit for the sector, these two mechanisms were not enough to compensate exporters. The structural decline of the sector's global importance and the remaining dependence on the government support to try to prevent the decline in prices gave producers almost no bargaining power to fight against the rising appropriation.

8.4 Subsidizing Private Sector Imports

The policy shift of 1957 increased the appropriation of foreign exchange from exporters, while at the same time decreasing the share of imports by import companies. These two groups were the main losers of the shift to the second

MER system. The next step is to see how this appropriation was transferred to the government and the industrial sector, improving their relative positions. One of these channels was removing the restrictions on imports, particularly capital goods, and subsidizing them with the export appropriation to reduce the cost of imports.

One of the problems to precisely identify this channel is that there is no available data on the composition of imports outside of the auction system. Chapter 5 showed how both the imports via Instruction 113, as well as the increase in exemptions given by Sumoc, were central to the reduced availability of foreign exchange to the MER system after 1957 and its eventual collapse. The previous section showed how importers lost their share of the business in this process. The ideal would be to show the exact destination of those imports, separating the shares of government and industrialists.

While this is not possible, there are alternative ways to proxy the share of each of these groups and calculate the size of the subsidy transferred from exporters. Between 1956 and 1961, the Kubitschek administration put forward Brazil's most well-known investment plan, the Target Plan. There is a long literature about the Target Plan (Skidmore, 1982; Baer, 1995; Abreu et al, 1997; Villela, 2011; Serra, 1982; Shapiro, 2004), with its ambitious slogan of producing fifty years of economic development in five. The plan started immediately after the new president took office, and was successfully delivered during his five years in office, as it was used to channel the appropriation from the MER system. The plan had five priority areas, but in practice just two. The five areas were power supply, transportation, food supply, basic industries, and education. They can be divided into only two because most of the investments from the plan were allocated to infrastructure and power supply (71.3%) and basic industries

(22.3%). Food supply and education received little of the funding (Sochaczwesky, 1980, p. 106). The plan was not only a government investment effort, but included a high level of private sector participation. According to the original plan, 35% of the funding would come from the private sector, both domestic and foreign, 15% from government financing agencies, and 50% from direct government investments (Sochaczwesky, 1980, p. 107). The plan made government responsible for investments in infrastructure, transportation, and power supply; the stated-owned companies responsible for basic industries, such as steel and oil; and the private sector responsible for advanced industries, such as motor vehicles, machinery, chemicals, and electrics.

Table 8.7 – The Target Plan

Sector	Unit	Forecast	Effective	%
Electric Power	KW	2,000,000	1,650,000	82.5%
Coal	Ton	1,000,000	230,000	23.0%
Oil-Producing	Barrells/day	96,000	75,000	78.1%
Oil-Refining	Barrells/day	200,000	52,000	26.0%
Railroads	KM	3,100	1,000	32.3%
Roads-Construction	KM	13,000	17,000	130.8%
Steel	Ton	1,100,000	650,000	59.1%
Cement	TON	1,400,000	870,000	62.1%
Cars and Trucks	One	170,000	133,000	78.2%
Nationalization (cars)	%	90	75	83.3%
Nationalization (trucks)	%	95	74	77.9%

Source: Sochaczwesky (1980, p. 106). Original data from Conselho de Desenvolvimento (1959).

Table 8.7 shows the impressive results of the Target Plan between 1956 and 1961. Government-owned companies delivered growth in the production of oil, steel, coal, and cement, while the government invested in electric power production, roads, and railroads. The private sector was mostly concentrated in the production of motor vehicles, which was seen by the Kubitschek administration as the quickest and most effective way to bring the private sector on board with the plan (Shapiro, 2004). But the key aspect is how these

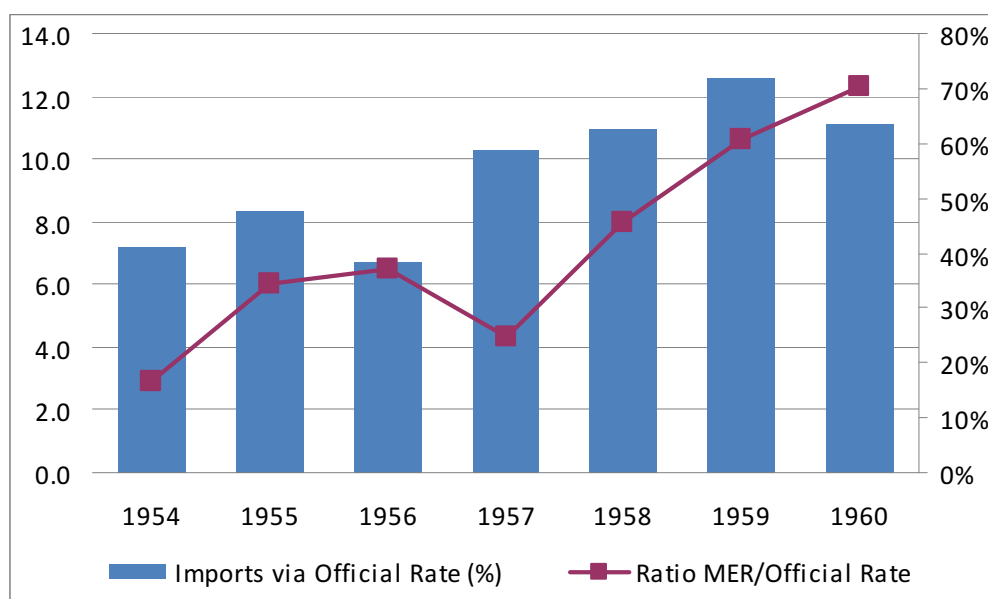
investments were financed through the subsidies from the MER system, which is calculated in Table 8.8 and Figure 8.3.

Table 8.8 – ‘Outside of Auctions’ Import Subsidy, 1954-1960

Year	Instruction 113 Imports (USD Million)	Imports (USD Million)	Effective Total Imports (USD Million)	Imports via Official Rate (USD Million)	Imports via MER Rate (USD Million)	Imports via Official Rate (%)	Official Rate (Cr\$)	Average MER Rate (Cr\$)	Ratio MER/Official Rate
1954	0	1410	1410	574.9	835.1	41%	18.8	54.0	2.9
1955	29	1099	1128	538.1	589.9	48%	18.8	113.2	6.0
1956	41.8	1046	1087.8	416.5	671.3	38%	18.8	121.9	6.5
1957	107.7	1285	1392.7	816.5	576.3	59%	18.8	81.7	4.4
1958	82.5	1179	1261.5	789.2	472.3	63%	18.8	149.9	8.0
1959	65.8	1210	1275.8	918.0	357.8	72%	18.8	199.7	10.6
1960	107.2	1293	1400.2	890.1	510.1	64%	18.8	230.9	12.3

Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Trade data from IBGE's *Anuários Estatísticos* (1950-1960). Instruction 113 imports from Caputo (2007, p. 64). See Appendix 4 for the methodology.

Figure 8.3 – Exchange Rate Subsidy Ratio, 1954-1960



Source: Table 7.8.

Table 8.8 first sums up the overall level of imports outside the auction system together with Instruction 113, to reach the effective level of imports outside the auction system. This was the share of the market lost by the import companies. This share represents exactly the amount of imports in the official overvalued

exchange rate, since the government, private exemptions, and Instruction 113 imports did not need to go through the auction system and could all use the fixed exchange rate. Column 6 shows this share, and how much it grew during the second phase of the system. In 1954, 41% of all inflows were out of the system, while by 1959, 72% were using the official exchange rate. From this, the last three columns calculate the size of the subsidy based on the ratio between the official rate and the average MER. This ratio averaged 4.9 (which means the MER average rate was 4.9 times the official rate) until 1957, but grew rapidly to 12.3 by 1960. The average ratio between 1958 and 1960 was an impressive 10.3. This means that imports outside the auctions were 10% of the average price of all other imports of the MER system. An average of 64% of all imports were being subsidized in this way, while the rest of the economy was paying a much higher price for imported goods via the auctions.

The subsidy was being paid by appropriations from exporters, since they were selling foreign exchange at a much lower price than the importers were paying for it. Foreign exchange was essentially bought at cheap levels from exporters, then skipped the import companies as intermediaries, in order to allow the private sector and government to import subsidized goods at very low prices. It should not be a surprise, then, how much interest Instruction 113 created for foreign investors, who were investing in the country with this massive subsidy. Tables 8.9 looks at the composition of this process, showing the sectoral destinations of these large subsidies to the private sector under Instruction 113.

Table 8.9 – Foreign Direct Investment via Instruction 113, 1955-1961 (%)

Sector	1955	1956	1957	1958	1959	1960	1961
Vehicles	21.2	7.3	33.5	65.6	48.4	49.7	0.0
Chemical Products	11.6	35.1	23.1	2.9	4.8	4.6	4.6
Machinery	5.8	7.0	6.1	2.3	12.9	16.8	22.9
Rubber and Plastic	4.6	3.0	5.0	6.4	14.2	2.8	10.2
Electrical Material	8.6	3.8	5.8	0.6	1.3	6.0	10.2
Textile Equipment	6.2	10.9	10.2	0.4	0.6	2.4	2.2
Metallurgical Products	2.8	7.0	4.7	1.0	6.7	1.0	12.3
Food	9.9	5.7	3.1	3.2	1.2	2.7	5.0
Paper	0.3	2.1	0.1	10.0	1.4	0.5	16.4
Transportation Equipment	0.1	0.0	0.7	0.1	5.0	6.0	4.8
Electronic Equipment	4.7	2.4	1.0	1.7	0.7	1.9	3.3
Metallic Minerals - Extraction	3.4	3.8	1.2	0.1	0.6	3.7	2.1
Metallic Products	6.5	2.4	2.6	0.8	0.7	1.0	1.6
Non-Metallic Products	0.9	4.2	0.9	3.8	0.5	0.4	2.3
Other Sectors	13.5	5.3	2.0	1.2	1.0	0.6	2.0
Total	100	100	100	100	100	100	100

Source: Reproduced from Caputo (2007, p. 64). Original data constructed from Sumoc's Instructions.

Table 8.9 shows the composition of flows under Instruction 113. Since these were authorized by Sumoc and registered in the minutes, it is possible to know exactly the amount of FDI in the form of imports going through this channel. This table highlights how the Target Plan concentrated private sector investments in advanced industries. Instruction 113 investments were concentrated in vehicles, machinery, different types of equipment, rubber, and plastics. The best example of an industry that benefited from this import subsidy during the second phase was the automotive sector: 38% of the total FDI during the years 1955-63 (US\$190 million) was for the automotive sector. Under the Target Plan, the government created the Grupo Ejecutivo da Industria Automobilística (GEIA), composed of government officials and private sector executives, to plan, study, and approve projects for the sector. In 1956 and 1957, this group approved 18 projects to be developed until the end of the decade (Shapiro, 2006, pp. 235-236). All projects had some participation of foreign companies and could utilize the subsidy from Instruction 113. The sector accounted for 32% of the FDI under the instrument (Caputo, 2007, p. 76). The Target Plan also established a percentage of the supply that should be

domestically produced of 90%, and accomplished 75% of the production by the end of 1961 (Kertenetzky, 2016, p. 5).

8.5 Funding the Government

But the subsidy was not only channeled to private sector imports. The government itself was also responsible for a very large share of investments under the Target Plan: about 25% of total investments during 1956-1960 (IBGE, 2017), concentrated in infrastructure and power supply. A large part of the appropriation from the MER system was used to finance this increasing role in the economy. While the data also do not show the exact composition of imports divided between the government and the private sector, the composition of investments is a useful proxy to analyze the government role in the process.

Table 8.10 – Composition of Investments, 1955-1961 (% of GDP)

	Total Investment	Government Investment	State-Owned Companies Investments	Private Investment
1955	18.4	2.8	0.6	15
1956	20.2	2.7	0.4	17.1
1957	21.9	3.9	0.9	17.1
1958	23.3	4.7	1.2	17.4
1959	23.3	4.1	1.8	17.9
1960	22.8	4.7	2.4	15.7
1961	22.4	4.3	2.5	15.6

Source: IBGE (2017). Original data from Sumoc .

Table 8.10 provides a good picture of the composition of investments during the years of the Target Plan. During the whole period, average investments were almost 22% of GDP, of which 5.3% of GDP were, on average, from the government or state-owned companies, making 25% of the total (IBGE, 2017). The private sector had an average investment of 16.5% of GDP. The government used to retain about 30% of all foreign exchange for its own imports during the first phase of the MER system, which was why the average

percentage of imports via the auction system was around 60-70%. In the second system, post-1957, the level of imports through the auctions declined to around 30% on average, with 70% of foreign exchange being offered outside the system (see Figure 5.2). The government share of investments increased from 18.5% in 1955 to an average of 25% during the period 1956-1961, including the state-owned companies (IBGE, 2017). Although there is no data on exactly the share of government imports in the second phase of the system, proportionally, this increase in investments would represent in the second system about 40% of the overall imports, an increase of 10 percentage points from the 30% level of the government in the first system. In this simulation, then, out of the 70% of imports outside the auctions in the second system, about 40 percentage points were likely going to the government and state-owned companies, while 30 percentage points went to industrialists. Both enjoyed an implicit subsidy that was on average five times the official exchange rate (the 4.9 average ratio calculated from Table 7.8).

The Target Plan was effective. During the previous period, between 1947 and 1955, average investment was only 14% of GDP, whereas it rose to an average of 22% during the Target Plan years. During the 1960s, average investments then declined to 17% of GDP, significantly below the Kubitschek years. This shows how the effort to produce investments through the plan and using the MER system to appropriate exporters and subsidize imports for both the government and industrialists was effective.

On the government side, it is possible to calculate exactly its share of the appropriation in the form of revenues. One of the most interesting findings of the analysis of primary data of the *agios* is the way the government compensated for the revenues lost from the first to the second phase of the

MER system. During the first phase, the government was financing itself only with the tax imposed on the auctions, the *agios*. As most imports were taking place through the auctions, the government obtained large sums of revenues from taxing them. During the second phase, however, the reduction of imports through the system meant a significant decline in revenues from the auctions, as the appropriation from exporters was mostly being transferred in the form of subsidies to imports outside the auctions.

The introduction of ad valorem tariffs in 1957, however, compensated for a good part of these losses, as the tariffs were applied to all imports, independently of the exchange rate regime and whether they went through the auctions or not. In fact, the imports that remained under the auctions regime were doubly taxed, as they still had to pay the *agio* on top of the new tariffs. Not surprisingly, this resulted in a very effective channel to recover revenues that were being lost to the increase of imports outside the auctions. Table 8.11 shows this calculation.

Table 8.11 – Government Revenues from the MER System and Tariffs, 1953-

1960

	Year	Agios (Cr\$)	Bonificações (Cr\$)	Revenues (Cr\$)	Net Agios (% Revenues)	Tariffs (ad valorem %)	Tariffs (Cr\$)	Tariffs (% Revenues)	Net Agios + Tariffs (% Revenues)
1st Phase	1953	\$5,111,965	\$4,261,950	\$91,500,000	1%				0.9%
	1954	\$45,058,895	\$20,148,510	\$124,500,000	20%				20.0%
	1955	\$66,796,525	\$26,108,713	\$144,200,000	28%				28.2%
	1956	\$81,860,755	\$32,048,248	\$192,900,000	26%				25.8%
2nd Phase	1957	\$76,320,652	\$38,931,920	\$238,900,000	16%	13.5	\$14,186,638	5.9%	21.6%
	1958	\$70,780,550	\$47,810,548	\$331,400,000	7%	14.7	\$25,922,262	7.8%	14.8%
	1959	\$96,652,195	\$77,480,875	\$450,400,000	4%	29.1	\$70,372,640	15.6%	19.9%
	1960	\$117,755,732	\$76,261,913	\$640,600,000	6%	33.7	\$100,495,929	15.7%	22.2%

Source: Own construction. MER data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Tariffs come from Morley (1969, p. 307). Fiscal data compiled by Sochaczwesky (1980, p. 127). See Appendix 4 for the methodology.

The table presents the levels of government revenues collected from the two systems. Until 1956, only revenues from the *agios* were collected from the MER

system. In net terms, with the bonus to exporters subtracted, they represented 25% of all government revenues between 1954 and 1956. From 1957 onwards, the contribution of *agios* to revenues declined, falling to an average of 8% of all government revenues. This was the result of the growth of imports outside the auctions, which reduced the overall level of foreign exchange available to the MER system, leading to reduced tax revenues. It was, however, compensated for by the addition of ad valorem tariffs after 1957, which on average grew from 13.5% to 33.7% in 1960 (Morley, 1969, p. 307), representing an additional source of income that accounted for more than 11% of government revenues between 1957 and 1960. By the end of the period, the system as a whole, including auctions and tariffs, was providing 22% of all government revenues, compared to 26% at the end of 1956. Thus, although the government lost revenues due to the enormous subsidy being provided via imports outside the auctions, it found a way to compensate for a good share of those losses through tariffs. This evidence shows that, although Chapter 7 and the first sections of this chapter demonstrated that tariffs were not important for the industrialization process during the second half of the 1950s, their re-introduction was important for the government because they were a new source of financing for the second MER system.

Primary evidence from newspapers of the time, presented below in Section 7.7, suggests that the second MER system was indeed designed to increase fiscal revenues with the imposition of ad valorem tariffs, even though officials never made that public. These revenues were used to finance the government's growing participation in the economy, as seen by the increase of public investments from 3.2% to 5.3% of GDP (IBGE, 2017), both in infrastructure but

also in inputs such as oil, steel, and cement. Table 7.12 shows the increase in government spending and investments during the period.

Table 8.12 – Government Expenditure, 1952-1961

Cr\$ Million	Consumption	Investment	Total	Total/GDP%	Investment/GDP%
1952	45.1	12.7	57.8	15%	3.2%
1953	65	15.1	80.1	17%	3.2%
1954	75.3	20.9	96.2	15%	3.3%
1955	94	22.3	116.3	15%	2.9%
1956	130.4	26.7	157.1	16%	2.7%
1957	152.7	45.7	200.2	16%	3.7%
1958	180.5	68.5	249	17%	4.7%
1959	249	85.5	334.5	17%	4.3%
1960	366.7	130.6	497.3	18%	4.8%
1961	537.9	173	710.9	18%	4.3%

Source: Compiled by IBGE (2017). Original data from Sumoc.

The table shows how total government expenditure grew by three percentage points of GDP between 1952 and 1961, including 1.7 percentage points in investments. From 1958 to 1960, investments averaged 4.6% of GDP, compared to 3% of GDP during the Vargas period. As Table 8.8 showed, government investments though the Target Plan were delivered via the ownership of companies producing oil, steel, coal, and cement, and also direct investments in electric power production, roads, and railroads.

But this financing channel through the revenues from the MER system was not sufficient to cover the fast pace of increase in government expenditures. Figure 4.8 showed that the budget deficit increased from an average of -1.6% of GDP between 1952 and 1955, to -5.9% between 1956 and 1960, an increase of 4.3 percentage points. The new revenues from tariffs compensated for most of the decline in revenues from the MER, but did not increase to cover this rising expenditures. As shown in Chapter 5, this was compensated for by printing money. The annual growth of money supply increased from about 15% in 1955 to almost 40% by 1960, and covered the gap in the government budget.

But this scheme was also used to further finance the government outside of its own public accounts. Printing money by Banco do Brasil was also used to increase credit loans from the bank, which were not registered in the public accounts. As discussed in Chapter 5, Banco do Brasil was during that time both a monetary authority and a commercial bank. It printed money to finance the government deficits and also to fund its own rise in credit supply for the economy. Interestingly, however, most of this rise in credit was channeled to also finance the government itself, both to its investment projects under the Target Plan and the state-owned companies' large investments in basic supplies. Table 8.13 shows this scheme.

Table 8.13 – Banco do Brasil Loans, 1952-1961

	Outstanding Loans	% to Public Sector	% to Private Sector	% GDP	Annual Growth (%)
1952	55,189,000	40%	60%	13.9%	
1953	74,846,000	42%	58%	15.9%	36%
1954	106,773,000	46%	54%	17.0%	43%
1955	124,549,000	48%	52%	15.9%	17%
1956	160,628,000	53%	47%	16.1%	29%
1957	215,885,000	57%	43%	17.7%	34%
1958	260,044,000	55%	45%	17.8%	20%
1959	322,566,000	58%	42%	16.2%	24%
1960	468,596,000	61%	39%	17.0%	45%
1961	806,923,000	65%	35%	19.8%	72%

Source: Banco do Brasil data from IBGE (2017)

Table 8.13 shows the increase in Banco do Brasil loans between the public sectors (government and state-owned companies) and the private sector between 1952 and 1961. Between 1952 and 1961, the share of the public sector increased from 40% to 65%, accounting for almost all of the growth of loans from the bank. The increase in this credit represented, on average, 2% of GDP between 1957 and 1961. In the Target Plan, this represents exactly the 15% of the financing that was intended to be offered by government financing agencies

(Sochaczwesky, 1980, p. 107). This means the channel of money printing turning into credit for the government represented about half of the increase in the budget deficit of 4.3% in the period, showing the size of the role of the government in the industrial effort. The government used both the revenues from the MER and tariffs, as well as money printing, to finance both the direct increase in state spending and also the rise in credit from Banco do Brasil outside of the official public accounts. These conclusions also show the Banco do Brasil's numerous credit lines to the private sector, such as financing cash flow to the importers participating in the MER system, and loans to agricultural exporters and local industrialists, fell as a share of the bank's funds after 1957. It reinforces the conclusions made above that the credit to agricultural exporters was not a large share of the bank's business, and also that the main channel to subsidize local industrialists were the subsidies to imports outside of the auctions.

The case of the steel industry is probably the best example of the government effort to participate in the industrial take off. During the 1940s and early 1950s, the first few steel plants were opened, such as CSN (1941), ACESITA (1951) and USIMINAS (1956). Most of these companies were government owned or joint-ventures with foreign capital, but with a significant participation by the state (Andrade & Cunha, 2002, p. 2). During 1956-1961 the sector took off, with the government setting an ambitious target to increase steel production to 2.4 million tons per year as part of the Target Plan, doubling the 1955 level. Although this ambitious target was not achieved, production reached slightly more than 2 million tons in 1961, an average annual growth of 12.1%. This resulted from the direct investment by the government-owned companies, especially CSN (Andrade & Cunha, 2002, p. 4).

The evidence presented in this section shows that the government used a large share of the appropriation from the exporters to subsidize its increased role in the economy as part of the Target Plan, while also using money printing to finance the rising budget deficit and increase credit from Banco do Brasil to itself and state-owned companies. The rest of the appropriation was used to subsidize imports outside the auctions by industrialists. From a welfare perspective, the government was thus one of the main beneficiaries of the shift in systems in 1957, as it found a way to both increase the subsidy to the private sector but also compensate for its loss of revenues.

8.6 The Rise of Industry

This leads to the other main beneficiary of the new system: the industrial sector. While the last few sections have showed the channels through which the industrial expansion was stimulated, and calculated the size of the welfare improvement of the government and declines for importers and exporters, this section calculates how much the subsidy represented for the local industrialists, as shown in Table 8.14.

Table 8.14 - Industrial Benefits, 1953-1960

Year	Industrial Production (Nominal % Growth)	Industrial Production (Cr\$)	Industrial Production (Real % Growth)	Inflation (%)	Net Agios + Tariffs (Cr\$)	Financial Benefit of 2 p.p (% of Agios + Tariffs) - (Cr\$)
1953		221,896,408	8.3%	17%	850,015	
1954	29%	285,834,147	6.5%	14%	24,910,384	
1955	27%	363,218,017	8.9%	23%	40,687,812	
1956	35%	489,313,162	4.3%	23%	49,812,507	
1957	37%	668,926,627	5.3%	21%	51,575,370	65%
1958	40%	933,229,779	10.2%	16%	48,892,264	95%
1959	28%	1,194,784,551	7.4%	15%	89,543,960	67%
1960	58%	1,887,600,395	13.5%	39%	141,989,749	66%

Source: Own construction from primary data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Sectoral industrial production from FGV's *Revista de Conjuntura Econômica*. Tariffs from Morley (1969, p. 307). Inflation from IBGE (2017). See Appendix 4 for the methodology.

Table 8.14 calculates how much the industrial sector benefited from the second MER system. First, it shows the change in the real growth of industrial production after 1957, with an average of 9.1% versus 7.0% in the period 1953-1956. Second, it shows how much industrialists gained financially from this 2 percentage points of additional growth during the second MER system. In nominal terms, it represented an average of 73% of the amount of government revenues in the form of both net *agios* and tariffs between 1957 and 1960. This is calculated in the last column of Table 8.14. Thus, by representing a large share of imports outside of the auctions, while simultaneously having those subsidized by the foreign exchange appropriated from the exporters, the welfare gains from industrialists were equivalent to almost three quarters of the government revenues from the system in the same period.

One important question that can be raised about these benefits to the industrial sector is whether they were obtained by local industrialists or foreign companies, given that part of the subsidy was given through Instruction 113. If the marginal increase in industrial growth was only concentrated in the hands of foreigners, then the implicit subsidy was not actually reaching the local industrialists.

This was not, however, the case because local industrialists benefited significantly from the industrial growth. Instruction 113 investments could officially only be made by foreign companies, but most of these companies operated by creating new local subsidiaries, investing in existing local companies, or creating joint ventures with local industrialists (Andrade & Cunha, 2002, p. 3). The motor vehicles sector, which received most of the investments via Instruction 113 (32% on average during 1956-1961), opened new branches that accounted for about 50% of the investments in the sector

(Caputo, 2007, p. 76). The remaining FDI in the sector was fragmented across a variety of supply companies for the sector. Out of the original 11 car makers of the sector that launched investments in 1956, only in 5 were foreigners the majority shareholder, 4 had Brazilian capital as the majority shareholder, and 3 had at least 50% local ownership. None of them had only foreign ownership (Shapiro, 2006, p. 237). Clearly, local industrialists were utilizing foreign capital as a complement to develop their business, which allowed them to share the benefits from Instruction 113. A similar situation was observed in the chemicals industry, which was the second largest recipient of investments under Instruction 113, with 12.5% on average between 1956 and 1961. Large foreign producers, such as Bayer, Pfizer, and White Martins, did not make more than 25% of the investments in the sector and all had some participation of local capital. The rest also fragmented to smaller companies mostly owned by local industrialists or joint ventures (Caputo, 2007, p. 77).

It is not possible to know the exact share of foreign ownership that resulted from the Instruction 113 investments, but it is clear that there was significant complementarity with local industrialists, who used the channel as an opportunity for expanding and forming joint ventures, receiving foreign capital and expanding to supply a growing vertically integrated industrial sector. This explains why there were no signs of complaints from local industrialists to Instruction 113. In fact, there is evidence of the sector publically defending the 1957 reform in local newspapers, which will be shown below in Section 7.7.

Finally, it is also interesting to analyze the impact of the new MER system on employment in the industrial sector. Advanced industries' share of employment grew significantly in comparison with traditional industries, following exactly the same process observed in the overall composition of the

industrial sector. Table 8.15 elaborates on this by showing the overall levels and shares of employment in industry before and after the 1950s.

Table 8.15 – Employment Levels and Shares, 1949-1959

	1949	1959	1949	1959	1949-1959
	Employment		% of Total Employment		Contribution to Employment Growth (in p.p)
Extractive Industries	36,809	45,714	2.7%	2.5%	2.0
Nonmetallic minerals	128,928	163,680	9.6%	9.1%	7.7
Iron, steel and metal products	102,826	174,279	7.6%	9.7%	15.8
Machinery	26,600	62,148	2.0%	3.5%	7.8
Electrical Machinery	15,774	57,904	1.2%	3.2%	9.3
Transport Equipment	20,182	81,876	1.5%	4.6%	13.6
Wood products	68,486	87,822	5.1%	4.9%	4.3
Furniture	38,802	63,471	2.9%	3.5%	5.4
Paper	24,959	40,925	1.9%	2.3%	3.5
Rubber	10,861	20,878	0.8%	1.2%	2.2
Leather	21,196	24,715	1.6%	1.4%	0.8
Chemicals	44,656	76,518	3.3%	4.3%	7.0
Pharmaceutical	17,533	27,066	1.3%	1.5%	2.1
Perfumery	11,283	14,714	0.8%	0.8%	0.8
Plastic products	3,057	9,683	0.2%	0.5%	1.5
Textiles	338,035	328,297	25.1%	18.2%	-2.1
Shoes	76,464	97,999	5.7%	5.4%	4.8
Food	234,311	266,103	17.4%	14.8%	7.0
Beverages	39,253	43,880	2.9%	2.4%	1.0
Tobacco	13,008	13,169	1.0%	0.7%	0.0
Printing and publishing	49,367	60,625	3.7%	3.4%	2.5
Others	24,033	37,910	1.8%	2.1%	3.1
Total	1,346,423	1,799,376	100.0%	100.0%	

Source: Own construction from IBGE's industrial censuses of 1949 and 1959.

Table 8.15 shows some very interesting aspects of employment in the manufacturing sector before and after the two MER systems. First, the overall level of employment increased by 33.6% during the decade, which is an impressive average of more than 3% per year, although it is the same as Brazil's population growth during the period (IBGE, 2017). Second, this increase was strongly concentrated in advanced industries, such as steel, machinery, transportation, chemicals, etc. Most of the traditional industries saw their employment levels growing very slowly or in some cases, such as textiles, stagnating during the decade. Third, the final column of the table calculates the

contribution to employment growth from each of the sectors in percentage points. Some sectors, such as steel and transport equipment (including motor vehicles) accounted for more than ten percentage points, and a large number of other advanced industries accounted for between five and ten percentage points.

These numbers show how the industrial growth of the 1950s, which was mostly the industrial deepening of advanced industries after 1957, also resulted in an increase of labor being incorporated into the industrial sector. This fits perfectly with the policy objectives of Kubitschek to further stimulate industrial growth and benefit an emerging urban labor force, as discussed in Chapter 3. More importantly, it shows that given the early completion of import substitution in traditional industries, there would probably have been an excess of labor without the new phase of industrial growth. The Kubitschek government was therefore trying to subsidize industrialists and finance its own role in the economy not only to benefit these groups, but also to maintain employment growth.

8.7 The Political Economy of Multiple Exchange Rates

The quantitative evidence presented so far has analyzed welfare redistribution during the two phases of the MER system in Brazil. During the first phase importers lost income from the restrictions imposed by the balance of payments, as the level of imports fell; exporters' incomes were partially appropriated, but Sumoc gave them the bonuses to compensate for part of their losses; industrialists benefited from industrial growth; and the government collected taxes from the MER system. During the second phase the appropriation of exporters surged with the widening of the gap between the

import and export exchange rates; importers had their business taken away, as industrialists and the government increasingly imported directly; industrial production accelerated based on the subsidy to importing capital goods and the government's increasing role in industrial production; and the government funded this new system by collecting revenues from tariffs rather than only from the MER auctions. This shift represented, then, a strong government-led industrial deepening process.

The question that remains is whether this shift was intended by policymakers or whether it was mostly an unintended consequence of the second MER system, which was in fact targeted at the official purpose of complementing the first MER system and stimulating the import substitution of advanced sectors. The evidence presented so far suggests that the government indeed intended to change the source of economic growth from protectionism to having a direct presence in the economy and creating channels to subsidize the private industrial sector.

Yet, while the quantitative data suggest this interpretation, the data only provide evidence of the outcomes of the policies but not policymakers' intended objectives. Methodologically, this was the same problem observed in Chapter 5, where the distribution of foreign exchange was revealed by the data rather than by direct evidence from policymakers. Fortunately, qualitative evidence supports the above interpretation.

This section presents new qualitative evidence collected from the archives of the Brazilian Central Bank, which contains the Sumoc minutes; the Centro de Pesquisa e Documentação de História Contemporânea do Brasil (CPDOC)-FGV archive, containing the personal documents of both Vargas and Kubitschek;

and contemporary information from the archive of *Estado de Sao Paulo*, one of Brazil's most important newspapers at that time.

Economic policymaking oscillated significantly during the 1950s, reflecting the political transition from Vargas to Kubitschek. The history of Sumoc was full of changes due to the fluctuating the influence of the original Sumoquean group, the orthodox liberal policymakers, versus the developmentalists, to use Lago's (1982, p. 5) terms. Chapter 4 has shown how during the Vargas years the developmentalists were growing in influence within Sumoc, although its policies remained balanced, focused strongly on balance of payments stability. In the Kubitschek years, by contrast, the developmentalists' influence was much larger, which resulted in deteriorating macroeconomic policies, a larger role for industrialization, and the shift of policies in 1957 (Kuperman, 2012; Bielshowsky, 1996).

Primary evidence supports this interpretation, which explains the welfare shift observed in the data above. In the Vargas years, discussions of macroeconomic stability and balance of payments deficits were central in Sumoc. In 1951, the minutes of Meeting 266 from 10th July report one of the first discussions about the creation of the free market exchange rate, which was later approved in 1952. The minutes of the meeting, which was chaired by Finance Minister Horacio Lafer, describe a board trying to find a way to correct the balance of payments deficit but without finding solutions. In 1952, when the balance of payments deficit worsened and before the creation of the free market for the exchange rate, the minutes of Meeting 366 of 27th May show Sumoc sending guidance to the Banco do Brasil exchange rate director to strictly follow the foreign exchange budget authorized by Sumoc earlier in the year. The Finance Minister wrote to Banco do Brasil's exchange rate director:

It becomes necessary, with the objective of establishing control over the licensing system, and by recording the authorized imports, that the department complies with the approved exchange budget.
(Sumoc Minutes 366, 27/05/1952)

Sumoc was, at that time, not ready for devaluation or even a gradual depreciation of the exchange rate, but the episode shows how the leadership of Sumoc was trying to enforce its monetary authority over Banco do Brazil, in order to alleviate the shortage of foreign exchange.

In early 1953, when the balance of payments was in severe deficit and the board was looking for solutions to the problem, the minutes of Meeting 360 on 10th February show the Sumoc board discussing how the free market exchange rate depreciation had not been enough to correct the balance of payments deficits, leading to the conclusion that a depreciation of the official rate was needed. Essentially, during the whole Vargas period, there are no policy discussions inside Sumoc about industrialization. Sumoc seems to have been functioning during this period as a true monetary authority, concerned with enforcing monetary policy and correcting the balance of payments problems.

In late 1953, already under Finance Minister Oswaldo Aranha, the minutes from Meeting 408 of 9th October present the proposal of Instruction 70 and the MER system to the Sumoc board. Instead of a discussion about the various rates and how to protect different industrial sectors, his presentation essentially argued that the new system would bring equilibrium back to the economy, reducing the balance of payments deficits and inflation:

[...] the virtues of the new plan are, he noted among other things, the normalization of the trade balance and the country's balance of payments,

the end of commercial delays, and the liquidation of all foreign exchange liabilities from the Government; moreover, he stressed the need to achieve equilibrium between inflation and deflation. (Sumoc Minutes 408, 9/10/1953)

The discussion that followed Aranha's presentation concentrated on macroeconomic stability. It covered how importers could participate in the auctions and how much the system would adjust the balance of payments. The minutes do not show any evidence that the system was targeting industrialization, or how the five categories of the MER system were selected.

These minutes do not explicitly state policymakers' objectives, although they provide evidence of the topics and concerns of their discussions. Nonetheless, there is evidence that directly identifies the objectives of the MER system under Vargas. On the 10th October 1953, Vargas received a 30-page dossier prepared by Sumoc and the Finance Minister with information about the new system and its design. The document was found in the CPDOC-FGV archive, belonging to Vargas' personal files. Most of the document contains an explanation of how the MER system would work and what was included in the categories. It was clearly targeted at persuading the president of the importance of the new system. The most interesting part of the document is a page called 'The 12 Advantages of Sumoc's New Instruction', which has a simple list of objectives of the first MER regime:

- 1 – Institutionalizes the distribution of foreign exchange, solving the problem of CEXIM [Banco do Brasil' department responsible for distributing foreign exchange during the import licensing system];
- 2 – Solves the problem of expensive exports;

- 3 – Meets the demand of coffee producers;
- 4 – Eliminates the foreign exchange appropriation [of coffee exports];
- 5 – Favors production and exports; discourages imports that have been subsidized;
- 6 – Concentrates high sums of funding in Banco do Brasil, which will be used for productive development;
- 7 – Guarantees the payment of all imports, avoiding new trade payment delays;
- 8 – Guarantees enough funding for the foreign exchange obligations of Banco do Brasil;
- 9 – Exempts Banco do Brasil from having to intervene in the exchange market;
- 10 – Prevents, or restricts to the minimum, superfluous imports, establishing a true progressive taxation on imported goods;
- 11 – Guarantees trade balance equilibrium;
- 12 – Guarantees balance of payments equilibrium [...]

(Dossier for President Getulio Vargas, Ministry of Finance, CPDOC-FGV, 1953, pp. 4-5)

As part of a private internal document, prepared just for the President, the list is quite impressive as it highlights the 'true' objectives of the system in a way no other official document or secondary study has done before. There are several interesting points to be made. First, the main emphasis on trade and balance of payments stability, which confirms that this was the primary

objective of the first MER system. Second, the concern with exporters and coffee producers (points 2, 3, and 4). As the quantitative evidence highlighted above, the first MER system reflects clearly officials' and Vargas' concern for coffee exporters and interest in promoting manufactured exports, although exporters as a whole were ultimately expropriated in the system. Third, the emphasis on development through import substitution (points 5, 6, 8, and 10). This was not seen in any of the minutes and other official documents, but it makes clear that the first MER system had as a secondary objective the reduction of unnecessary imports and a more progressive taxation system that was targeted at stimulating import substitution in advanced sectors. For this reason, the dossier went on to provide the president with a detailed list of all goods included in each of the five categories of the system.

Overall, the document seems to be a definitive confirmation of the political objectives of the first MER system, reflecting perfectly the outcomes seen in the quantitative data. The political objectives of the first MER system were essentially to adjust the balance of payments, but they were also concerned with exporters and secondarily designed to support industrialization. Finally, it is important to highlight that the document does not give any indication that the first system was targeted at increasing government revenues. This would change with the second system after 1957.

In 1954 and 1955, during the transitional presidency of João Café Filho, Sumoc shifted towards very conservative policymakers and was ruled by the original group of founders. This was the time of Instruction 113, which was originally planned by policymakers as a way to attract foreign capital and gradually start reopening the economy. During the discussion around the creation of this

instrument, Finance Minister Gudin gave a detailed account of how he understood Instruction 113:

In relation to foreign investments, carried out in the country through imported equipment without exchange coverage [though Instruction 113], I believe that one should not impose restrictions other than those concerning the verification of the legitimacy of the investment itself. There are people who judge foreign investment as having drawbacks in encouraging production that is not essential to the economy. They condemn, for example, capital inputs to produce perfumes, soft drinks, and other items considered superfluous. We have to agree, however, that these represent production aimed at meeting market demand. If we forbid the entry of equipment for this purpose, in reality it will do nothing more than encourage the monopolistic position of those who already operate this business in the country. [...] If the investment is legitimate, that is, if it is established that the entry of equipment is not made at the expense of our scarce foreign exchange, it is hard to condemn it. (Sumoc Minutes 507, 17/01/1954)

Clearly, his words show that the original objective of Instruction 113 was to open the economy to foreign investments as a way to gradually liberalize trade and exchange rate markets. This was, however, the last period when Sumoc actively participated in policymaking. Sumoc lost influence under Kubitschek and the Ministry of Finance was the only central authority for policy decisions. According to Malan (1974, p. 3), Sumoc lost all its influence during the new government and only returned to center stage in 1961, when Jânio Quadros became President and brought Bulhões back to end the MER system. This shift was a reflection of the lack of attention paid by the new administration to macroeconomic stability, inflation, and the balance of payments.

The lack of consideration given to these key problems is clear from the minutes of Sumoc's meetings during this second period. In many important moments, particularly during the shift of the system in 1957 following the new tariffs law, there is nothing reported from the Sumoc board on how the exchange rate system would work under the new legislation. In fact, there is no reported discussion at all during the whole period about exchange rate policies. Sumoc was governed by seven different executive directors – a huge number compared to just three under Vargas – who were mostly just managing exchange rate operations, rather than producing policies.

This can be observed in the massive amount of authorizations under Instruction 113 for capital goods in the form of foreign direct investments for different firms found in the minutes. The minutes describe the company, the size of the investment, the imported goods, and the final decision from Sumoc. There is no reporting of internal discussions about whether each investment was important or not, and everything seems to have been authorized. In fact, exactly because the minutes present company names and the size of their financial transactions under Instruction 113, the Brazilian Central Bank resisted making these documents public. According to the Central Bank, this would have broken the financial confidentiality of those firms. The Central Bank only authorized the citation of policy discussion and not the data gathered on the companies and their financial flows.

In relation to the 1957 shift to the new MER regime, Sumoc did not have a single reported discussion about the reduction of the number of categories or how much foreign exchange would be allocated to the new MER system. According to the minutes from Meeting 661 on 9th August 1957, following the

congressional approval of the new tariffs law Number 3244, the board of Sumoc took the following decision:

The Council notes the terms of the report forwarded on 30/07/57 to the Honorable Minister of Finance, regarding the actions with the IMF in order to obtain the approval of that body for the simplifications in the exchange rate mechanism for imports as a result the new tariff law. (Sumoc Minutes 661, 9/8/1957)

Sumoc simplified the system and seems to have allowed imports outside the auctions imports via exemptions and Instruction 113 to rise without really discussing it. However, while in the Sumoc documents there is only omission, there is primary evidence elsewhere to identify more clearly the political objectives of the second system. In relation to the evidence that the objective of the second system was in practice to increase imports outside the auctions rather than stimulating further import substitution, when assuming the Ministry in 1958, Finance Minister Lucas Lopes stated that '[t]he very process of economic development, during the initial phase of rapid structural change, rapidly intensifies the demand for imports' (Bulhões, 1959, p. 57).

This is supported by the fact that most of the meetings' minutes were basically spent authorizing imports via Instruction 113. Even at the peak of inflation and balance of payments disequilibrium in 1959 and 1960, Sumoc seems unworried about these issues and the policy system continued, supported by the Finance Minister. There is further evidence to support this interpretation. In an editorial in May of 1957 *Estado de São Paulo*, one of Brazil's largest newspapers, with a right-wing conservative approach, discussed the proposed tariffs and exchange rate reform. The newspaper was the reflection of the UDN and the conservative elite's stance on economic policy at that time. The editorial makes two

important points about the proposed reform. First, it criticizes the overlap between the tariffs and the exchange rate auctions. It argues that the government should choose between the two, and that maintaining both together would open space for discretionary choices, returning the import system to its previous condition prior to 1953. The newspaper is clearly adopting a stance against the project, claiming it was a return to a more discretionary policy system rather than a more market oriented one. Second, and interestingly, it claims the new system has the benefit of increasing government revenues with the substitution of the *agios* for tariffs revenues. It states that '[i]t should be recognized that the transfer of most of the funds from the *agios*, now in the form of customs revenues, to the government budget will be an advantage compared to the current system' (*Estado de São Paulo*, 9/5/1957, p. 19).

As a conservative newspaper, the *Estado de São Paulo* clearly had a negative view of the overall reform, as it saw the system returning to discretion, which would impact the balance of payments. Nonetheless, it saw the increased revenues as a positive aspect of the government plan. It implicitly suggested that the objective of substituting government revenues from the MER system with tariffs was an important aspect of the second system, even though officials never stated that publically or in Sumoc's minutes. It is interesting to find this evidence exactly in a source that was against the new system. As the data above has shown, the new MER system indeed substituted the source of revenues, becoming an essential means to finance the government's increasing role in the economy.

Again, the omissions from Sumoc's minutes reinforce this interpretation. The minutes always reported the overall level of *agios*, but never discussed that

these *agios* were falling rapidly during the second MER system. They were being replaced by tariff revenues, but since the *agios* were the source of funding for Sumoc to pay the bonus to exporters, Sumoc had every reason to be worried about their reduction. The omission suggests that officials were not worried about the increase in the gap between the two exchange rates, and the growing subsidy this appropriation provided to imports outside the auctions. During the Vargas period, the bonus is described as shown above as an important instrument to compensate exporters, whereas in the second phase this clearly did not matter.

Another interesting piece of qualitative evidence about the 1957 reform comes from another article in *Estado de São Paulo*, two months later on 6th June 1957, when the newspaper discussed the impact of the upcoming tariffs reform and presented a debate between industrialists and exporters. It reports that the agricultural producers were accusing the reform of only benefiting industrialists and recreating the exchange rate appropriation of the sector, which clearly happened, as seen in the data above. The newspaper reports the response from industrialists, who claimed this was not the case and that the reform only had the objective of substituting the protection of the MERs for tariffs, which was exactly the official line. This is evidence that coffee exporters knew they would lose welfare with the new system, and the conservative newspaper provided them the space to present their stance. Industrialists, who were about to gain significantly from the new system, responded with the official explanation.

Overall, the qualitative documents and public debates discussed in this section provide consistent evidence of the implicit objectives of the two policy systems,

supporting the outcomes observed in the data seen in the first part of the chapter.

8.8 Chapter Conclusions

Based on quantitative and qualitative material, this chapter has provided a new interpretation to explain the welfare redistribution of the two phases of the MER regime. It showed Sumoc was at first an institution designing policy for macroeconomic stability, while also focusing secondarily on industrialists and exporters. During this period, importers suffered restrictions on their business because of the necessary adjustment of the balance of payments, exporters suffered some appropriation of their income but still had the bonus to compensate for part of their losses, and the industrial sector gained from protection.

During the second phase the objectives changed under the new administration. The second system was designed to produce a national development strategy of industrial deepening. It resulted in a growing appropriation of the exporters' incomes, the transfer of the import business from importers directly to industrialists and government, and a shift in government revenues from the MER auctions to tariffs, in order to fund the state's increasing role in the industrial take off.

Returning to the initial question of why the Kubitschek administration did not keep the original system in place, given that it had effective macroeconomic results, the interpretation presented in this chapter shows that by responding to much more pro-industrial and urban constituencies, the second system was used to produce a different model for industrial growth, given the exhaustion of the traditional substitution scheme. This resulted in industrial deepening at

the expense of inflation and balance of payments stability, with the cost passed to exporters and importers.

This interpretation provides contributions to different bodies of literature related to this topic. For the Brazilian literature on the MER experience (Baer, 2009; Figueiredo Filho, 2005; Lago, 1982; Vianna, 1987; Sochaczewski, 1981), it completes the interpretation of the peak and decline of the MER system, providing a new interpretation of the shift to the second system. It strongly challenges the idea that the system's two periods were complementary to each other, and shows they were designed to support the different political interests of the two governments. More specifically, the chapter has quantified the impact of the shift on the welfare of the different groups. Finally, it reinforces the finding that the first MER system had an effective design that declined because of the changes in the second phase.

For the literature on import substitution in Brazil, both from the 1970s and 1980s (Baer, 1972; Tavares, 1975; Bergman, 1970; Weisskoff, 1980; Versiani & Barros, 1977), as well as the more recent revisions (Abreu et al, 1997; Colistete, 2006; Villela, 2011; Aldrigui & Colistete, 2013), it further challenges the consensus on the period. The evidence shows that there was no import substitution of advanced sectors in the last part of the 1950s, and that industrialization was reached through the channels of subsidizing capital goods imports and direct government participation in the economy. Finally, for the broader literature on ISI in Latin America, it qualifies the Brazilian experience in comparison to the rest of the region. Brazil in the 1950s differs from the ISI model (Taylor, 1998; Haber, 2006; Hirschman, 1966; Teitel & Thoumi, 1986; Coatsworth & Williamson, 2004; Leff, 1967), which has focused on tariffs and exchange controls as the traditional instruments of protection to

stimulate industrialization in the region. Brazil's history fits better with authors who have focused on the state's role in industrialization (Kaufman, 1990; Lewis, 2005; Fishlow, 1972; Baer, 1972; Bergman, 1970), and has strong similarities to the model of industrial deepening that is commonly used to interpret Brazil in the 1960s and 1970s (O'Donnell, 1973; Serra, 1978; Bielshovvsky & Stumpo, 1995).

9. Conclusions

This dissertation began by arguing that the experience with MERs during the 1950s provided a unique case study to understand the economic history of Brazil, while also contributing to larger bodies of literature on industrialization in Latin America and exchange controls under the Bretton Woods system. These historiographical debates were presented in Chapters 2 and 3, which were then followed by new evidence that challenged many aspects of the existing literature on these topics. This evidence was mostly based on a new MER dataset, gathered from primary sources from the period, and which includes the quantities, prices, revenues, and subsidies of the system and differs substantially from the existing statistical sources. It is *per se* a new data source for the period and should be a lasting contribution of this research.

This data has been used in a sequential methodological approach of first presenting and testing the MER regime's empirical results, followed by a counterfactual exercise to test the effects of the MERs on sectoral industrial growth, and then exploring the political economy aspects of the system. In this way, it has led to a new interpretation of the MER experience in Brazil in Chapters 4 to 8. This concluding chapter revisits the conclusions and highlights the contributions this dissertation provides to the literature on Brazil's MER, industrialization in Latin America and exchange controls under the Bretton Woods system. The chapter starts by revising the conclusions of the chapters, then connects them to the broader literature, and finally concludes by arguing that the MER regime in Brazil was a 'successful' case of exchange controls under the Bretton Woods arrangement.

Chapter 2 reviewed the international context of the Bretton Woods period and the theoretical debates about exchange and capital controls. The chapter has demonstrated the need for more empirical case studies on controls that can tackle both the effectiveness of the systems, including counterfactual exercises, and also their political economy, which has been a central reason for the adoption of these instruments in history. It has shown the limited literature on exchange controls specifically in the Bretton Woods period, especially regarding how they related to the instability of the system in its early years.

Chapter 3 presented the historical and historiographical context of 1950s Brazil, placing the Brazilian case within the general Latin American context of industrialization. The chapter showed the impressive industrial growth and the shift from traditional to advanced industries in the 1950s, but also that the explanation of this process is not fully established. The typical ISI model with its strong focus on protectionist instruments is too narrow to explain it, as the government played a larger role than is normally supposed, particularly given the lack of tariffs in post-war Brazil.

Chapters 5 revisited the peak and decline of the Brazilian MER system between 1953 and 1961. The evidence showed that the first MER system of 1953-1957 successfully adjusted the balance of payments, while at the same time supporting macroeconomic conditions. The system's auction mechanism allowed the exchange rate to endogenously depreciate, correcting for a long period of overvaluation. The decay and eventual collapse followed many changes introduced in 1957, particularly the exemptions to the system, which allowed foreign exchange to be distributed outside of the auctions. Combined with rising pressures from expansionary fiscal and monetary policy, this undermined the balance of payments toward the end of the decade, resulting in

the collapse of the MER system, which forced a one-off devaluation of the official exchange rate and recourse to the IMF. The system did not collapse because of its original design or the fall of export receipts from coffee producers, like it has been assumed by the literature, but because of its gradual disuse. Import levels rose rapidly and the balance of payments eventually collapsed in the early 1960s. This new interpretation of the peak and decline of the system shows that the two phases of the MER regime were in fact different systems, resulting in distinct macroeconomic outcomes

Chapter 6 has showed, based on the new dataset of the MER auction system, that the effective results obtained in the first phase were not only the result of the centralization of foreign exchange in the system but mostly due to officials using the auctions to both force buyers out of the auctions and depreciate exchange rates, while also adopting a responsive approach to changes in market demand so that the gap between supplied and auctioned foreign exchange did not increase too much. This was done both by controlling the supply of foreign exchange to the auctions and also by setting minimum prices for each category at each moment in time. The econometric exercises suggest officials were not committing systematic mistakes with the supply of foreign exchange and were looking at the free market exchange rate to determine how much to provide to each category and to set minimum prices in the following month. This mechanism worked as an intermediary system that helped to gradually depreciate the exchange rate after a long period of overvaluation, with Sumoc 'guiding the invisible hand' of the market for an effective outcome between 1953 and 1957.

Chapter 7 performed a counterfactual exercise to assess whether sectoral industrial production would have been different if every industrial sector had received the same market exchange rate. By replacing the auction exchange rate with the free market exchange rate for a pool of industrial sectors, the test assessed whether the effective macroeconomic results observed during the first phase of the MER were also not generating important 'distortions' for the rest of the economy. Chapter 7 also performed a test on the effectiveness of the MER system as an instrument of import substitution industrialization for advanced sectors, since the existence of 'distortions' on sectoral industrial growth – better or worse performance of a sector with the MER system – would suggest that it was an effective policy tool to stimulate industrialization and affect the performance of different sectors. The results reveal that during the whole period of the auctions, the overall level of 'distortions' was minimal, both for individual sectors as well as for the industrial sector as a whole. The counterfactual exercise also reinforced the conclusions from Chapters 5 and 6 which suggested a system effective at balancing macroeconomic conditions during its first phase.

Chapter 8 assessed why the original system was not kept in place after 1957 if it produced effective macroeconomic results in its original design and did not cause 'distortions'. Based on quantitative and qualitative evidence, the chapter presented evidence of welfare redistribution during the two phases of the MER regime in Brazil to unveil the different utility functions of policymakers. The chapter concluded that Sumoc was, during its first phase in the Vargas years, an institution designed primarily for macroeconomic stability, while also balancing the interests of industrialists and traditional coffee exporters. During the first phase, from a welfare perspective, importers suffered restrictions on

their business because of the necessary adjustment of the external accounts; exporters suffered some appropriation of their income but still had the MER bonus to compensate for part of their losses; and the industrial sector benefited from industrial growth.

During the second phase after 1957, the MER system was part of a national development strategy with industrial deepening as its main channel to generate the accelerated industrial growth of advanced sectors. It resulted in a larger appropriation of exporters' income; the transfer of the import business directly to industrialists and the government; and shifted the government's main source of revenues from the MER system to tariffs to fund its increasing participation in industrialization. This redistribution created the incentives and channels for an industrial deepening process in Brazil, which was the main objective of the Kubitschek government, but left macroeconomic balance aside. The quantification of these welfare changes and channels to support industrialization were an important finding of Chapter 8.

These conclusions can be placed in a larger context. In Brazil's economic historiography, the 1950s are seen as an important period of industrialization, modernization, and successful economic growth. For scholars and the public, Vargas and particularly Kubitschek are remembered with nostalgia as leaders who achieved rapid economic development. The ISI model, as shown, plays a central role in this interpretation, with protectionist instruments seen as the force that broke with the dependency on agricultural commodity exports and allowed the country to industrialize. This broader interpretation of the period is the reason why the literature on the Brazilian MER regime, as shown throughout this dissertation, has adopted the ISI model framed by American scholars as its interpretative framework. This literature interpreted the changes

in 1957 to the second MER system as a mean to create further differentiation between sectors, ascribing the decay of the system to external shocks, rather than as the result of the policy shift. They have also assumed the MER system was effective in its first period, but never explained why and how policymakers made it work.

This dissertation has revised this interpretation of the economic history of Brazil in the 1950s. It presents the reasons for how and why the system initially worked but then stopped working. The dissertation demonstrates that during the first stage macroeconomic stability was intended, the system had a complex and effective design for reducing import levels, and authorities responded to market fluctuations to achieve those results. The MER system between 1953 and 1957 was not just a 'mirage', but indeed a 'miracle' combination of macroeconomic stability, industrialization and economic development resulting from an effective design and a responsive approach from policymakers. At the same time, the dissertation identifies the shift in the system and how this led to its collapse in the later part of the 1950s. Thus, it breaks the existing view that links Instructions 70 and 113 and the two phases as complementary steps of import substitution. The 1957 reform and Instruction 113 dismantled the original system, rather than complemented the original Instruction 70.

For the literature on Brazil's industrialization, Chapters 7 and 8 also contribute to the interpretation of the industrial shift in the 1950s. The findings do not challenge the facts, which were (1) a major increase in industrial production during the decade, and (2) an important shift in its composition to advanced industries in the last part of the decade. But the new evidence does show the substitution of imports was mostly completed before the start of the decade

and the process seen afterwards was not produced by tariffs or MER protectionism, as is commonly believed, but by an industrial deepening that used different forms of subsidies to the private sector to import cheap capital goods, and also saw an increased government participation in the economy. In fact, the challenge to the ISI consensus can be taken a step further. Although scholars from the ISI consensus have been searching for the earlier presence of tariffs as the instrument behind industrialization in the first half of the twentieth century, as presented in Chapter 3, the existing research by Brazilian scholars shows that the early stages of industrialization in Brazil were mostly the result of external shocks or unintended policies during the first half of the twentieth century. This dissertation then further challenges the relevance of the ISI model and its instruments to the post-war period, raising the questions of whether the ISI model, as it is mainly understood in the literature, has ever been a reality in Brazil? The conclusions of this research challenge the adequacy of the ISI model for Brazilian economic history as a whole. Industrialization was first the result of shocks or the unintended consequences of other policies, resulting in import substitution in traditional sectors in the first half of the century, and then the result of a major government-led effort in the post-war period to expand the industrial sector to advanced industries. These conclusions suggest Brazilian industrialization in the 1950s should be interpreted as a broader government-led effort using subsidies and direct state participation with the goal of 'industrial deepening', rather than based on the ISI model and its protectionist instruments.

Finally, this dissertation also casts a shadow of doubt over some strong perceptions scholars and the public have about the Vargas and Kubitschek presidencies. Vargas policies resulted in a system that balanced macroeconomic

stability with industrial growth, while Kubitschek orchestrated even faster industrialization but with major macroeconomic costs. His government challenged the decline in the pace of growth that followed the completion of import substitution in the traditional sectors, but at the expense of the public finances, the balance of payments, and inflation. The crisis that resulted from these policies in 1961 brought three years of recession, which ultimately contributed to the rise of the military dictatorship in 1964. Although historical counterfactuals do not exist, an important question raised by the findings of this thesis is whether the macroeconomic costs of industrialization between 1957 and 1961 were worth it.

The dissertation has also contributed to the broader historiography of Latin America's industrialization. By reinterpreting the case of Brazil in the 1950s, showing that tariffs and the MER system were not instruments of import substitution, this research also challenges a large set of assumptions of the broader ISI model which has been applied to the region as a whole. Rather than looking for the earlier use of tariffs in the region as the source for industrialization and questioning whether Latin America has always been protectionist, the scholarship should shift its focus to test the causal relationships between policy instruments and the economic outcomes. Brazil clearly does not fit the ISI model, and this raises the question of whether industrialization in other cases of the region has also resulted from alternative channels of policymaking.

Finally, the dissertation has also contributed to the broader debate on exchange controls and the assumed instability of the Bretton Woods system. Brazil's use of MERs was a response to adverse conditions that made the MER system necessary to remain within the structure of the Bretton Woods arrangement.

Brazil did not follow the IMF policy guidebook and used the MER system with effective macroeconomic results. Its unique design, with centralization and the auctions mechanism, was a more inventive and effective approach than the other cases in the region. The IMF was therefore wrong to assume that exchange controls were a source of instability in the Bretton Woods system, as is most of the literature in assuming that the Bretton Woods system was a stable monetary arrangement. This case study shows that controls, if well implemented, were in fact part of the solution to the instability of the Bretton Woods regime.

In fact, by identifying the reasons for the effective results of a case of controls in history, this research also contributes to the current policy debate around controls, which still has the IMF not entirely sure of where and when these instruments should be adopted. In one of its most recent staff discussion notes, the IMF conclusion was that '[f]or reasons that are not yet *fully understood*, capital controls and related prudential measures achieve their stated objectives in some cases but not in others, and it is not possible to draw definitive conclusions' (Habermeier et al, 2011, p. 4). This dissertation reinforces that there is nothing *a priori* wrong with these instruments. This case study does not prove exchange controls can be used at any moment or in any circumstance, but it suggests that when there is a foreign exchange shortage, such as the early years of the Bretton Woods arrangement, they can be a quite effective system and could perhaps be replicated elsewhere in similar circumstances.

Brazil's MER experience was thus a 'successful' case of exchange controls. The main thesis of this dissertation was a new novel explanation for the peak and decline of this 'successful' experience. The effectiveness during its first phase between 1953 and 1957 is explained by a responsive approach from authorities

to changes in market demand. This resulted in a controlled depreciation of the exchange rates, which did not produce 'distortions' for the economy and stabilized the balance of payments and other macroeconomic conditions. The decay and collapse of the MER system are explained by the rise in imports outside the auction system between 1957 and 1961. They were used to subsidize the private sector and finance the increased government role in the economy. The system after 1957 produced industrialization of advanced sectors, but at the expense of macroeconomic stability. There are no historical counterfactuals to show what would have happened if the original system had been kept in place after 1957 and how long it would have lasted. But this dissertation has showed that Brazil's MER was not just a 'mirage', but a 'miracle' experience which still today has a lot to teach economic historians.

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11. Appendix 1 – Econometrics for Chapter 7

This appendix presents complementary econometric tests for robustness for Chapter 7.

The appendix is divided into three parts. Subsection 11.1 presents the estimate for the SER and the cointegration test between the SER and the free market exchange rate.

Subsection 11.2 presents unit root tests, cointegration, and VEC results as robustness exercises for the regressions of Section 7.5. The unit root tests for the industrial sectors and ERPs both in levels and first differences show that all variables are not stationary in levels, but are in difference, permitting time series regressions to be performed. Additional explanation is provided below about the cointegration and VEC estimates

Sub-section 11.3 presents two alternative groups of regressions as robustness exercises for Section 7.5. Additional explanation is also provided below.

11.1 Estimating the SER

The estimation of the SER follows the methodology proposed by Brandão and Carvalho (1991) in a World Bank study, which as discussed in Chapter 6 provides a formula that well reflects the concept of the SER. The authors propose the following formula to estimate the SER:

$$E^* = \left[\frac{\Delta Q_o + \left(\frac{t_m}{1+t_m} Q_d \eta - \frac{t_x}{1-t_x} Q_s \varepsilon \right)}{\varepsilon Q_s + \eta Q_d} + 1 \right] E_o$$

where, Q_d is the demand for foreign exchange, Q_s is the supply of foreign exchange, E_o is the official nominal exchange rate, ΔQ_o is $Q_d - Q_s$ at the official

exchange rate E_0 , E^* is the SER, η is the price elasticity of foreign exchange demand, ε is the price elasticity of foreign exchange supply, t_m is the true import tariff and t_x the true export tariff (or subsidy).

To estimate the SER, the true import and export tariffs were obtained from Morley (1969), who estimated the tariffs and export subsidies per sector for the period of the MER system, including the effect of the different exchange rates for each sector. For the price elasticities, the same values applied by Brandão and Carvalho (1991) were also adopted. In the absence of reliable estimates for the price elasticities, they adopt the hypothetical values of $\eta = 2.0$ and $\varepsilon = 1$ and argue that these values are close to those presented in other studies that used the elasticity approach for the Brazilian case. Supply and demand for foreign exchange were obtained from the import and export data from IBGE, using the same procedure from Brandão and Carvalho (1991). With this data it was possible to construct a proxy of the SER for the whole period of the MER system. Figure 11.1 shows the SER estimate in comparison with the free market exchange and also the weighted average MER.

Figure 11.1 – Proxy SER Estimate

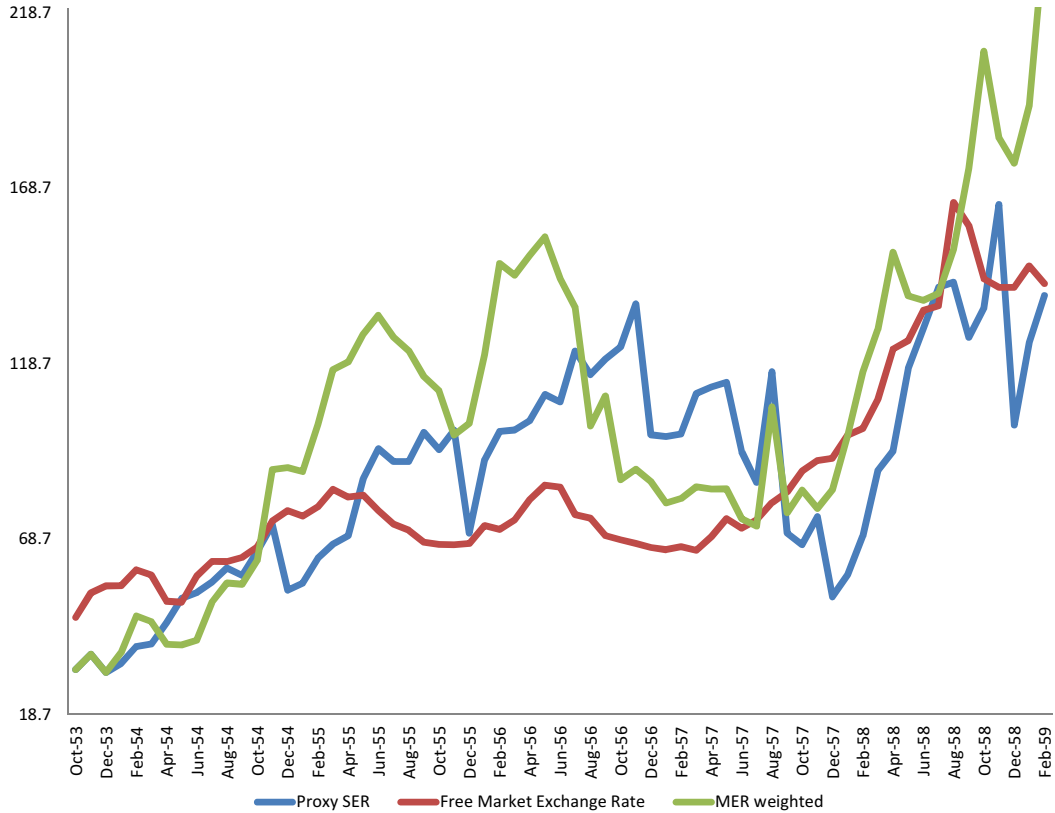


Figure 11.1 shows some interesting aspects of the SER estimate. First, after correcting for supply and demand for foreign exchange and the true import and export tariffs (which include the MER subsidies) on the official exchange rate, the resulting series is similar to the free market exchange rate and the MER weighted exchange rate. This is not a surprise since the construction of the SER was essentially to apply the different protection instruments and the gap between supply and demand for foreign exchange to the official exchange rate. The result is a series that is close to the weighted MER and the free market exchange rate. It is also worth noting that this SER estimate seems to have fluctuated following a similar pattern as the other two series. The correlation between the SER and the free market exchange rate is of 65%.

To make sure that the free market rate can be used as a proxy for the SER in the regressions, a cointegration test between the SER and the free market rate was performed. Table 11.2 shows the unit root tests and Table 11.3 the cointegration test. The tests follow the same procedure adopted in Chapter 5.

Table 11.2 – Unit Root Tests

ADF	T-Statistic	P-value	Outcome
<i>Level</i>			
Free Market	-1.366	0.8615	I (1)
SER	-2.75	0.22	I (1)
<i>1st Difference</i>			
Free Market	-6.45	0***	I (0)
SER	-10.16	0***	I (0)
KPPS			
	LM-Stat		Outcome
<i>Level</i>			
Free Market	0.15		I (1)
SER	0.17		I (1)
<i>1st Difference</i>			
Free Market	0.11		I (0)
SER	0.06		I (0)

Table 11.3 – Cointegration Tests

Johansen Cointegration Test		
Free Market and SER		
	Trace	Max-Eigen
None	0.37	0.37
At Most 1	0.015**	0.016**
N=62		

Table 11.2 shows that the two variables are I(1), which means they are non-stationary and a cointegration test between them can be performed. Table 11.3 shows that the two series cointegrate according to both the trace and Max-Eigen approaches of the Johansen test. This confirms that the two series have a

long-term relationship, and validates that the free market exchange can be used a good proxy for the SER in the regressions of Chapter 6.

11.2 Unit Roots, Cointegration and VECS

Tables 11.4 present the unit root tests.

Table 11.4 – Unit Root Tests

Level	T-Statistic	P-value	Rejects Unit Root
Food	-0.95	0.76	No
Beverages	-2.33	0.16	No
Rubber	-1.06	0.72	No
Leather	-2.14	0.22	No
Cement	-1.34	0.6	No
Extractive	-0.55	0.87	No
Tobacco	-2.14	0.22	No
Steel	-0.38	0.96	No
Textiles	-1.36	0.59	No
Paper	-0.79	0.81	No
1st Difference	T-Statistic	P-value	Rejects Unit Root
Food	-10.2	0	Yes
Beverages	-7.35	0	Yes
Rubber	-15.15	0	Yes
Leather	-4.57	0	Yes
Cement	-11.96	0	Yes
Extractive	-8.9	0	Yes
Tobacco	-4.57	0	Yes
Steel	-11.68	0	Yes
Textiles	-4.54	0	Yes
Paper	-6.75	0	Yes
Level	T-Statistic	P-value	Rejects Unit Root
ERP Food	-1.748622	0.4034	No
ERP Beverages	-1.875567	0.3423	No
ERP Rubber	-1.778382	0.3888	No
ERP Leather	-1.866514	0.3465	No
ERP Cement	-1.987651	0.2917	No
ERP Extractive	-1.648037	0.4539	No
ERP Tobacco	-1.254114	0.6475	No
ERP Steel	-2.031004	0.2733	No
ERP Textiles	-1.545538	0.5059	No
ERP Paper	-1.504704	0.5266	No
1st Difference	T-Statistic	P-value	Rejects Unit Root
ERP Food	-11.44182	0.0001	Yes
ERP Beverages	-8.782918	0	Yes
ERP Rubber	-11.16492	0.0001	Yes
ERP Leather	-10.43288	0	Yes
ERP Cement	-7.431316	0	Yes
ERP Extractive	-8.066708	0	Yes
ERP Tobacco	-10.06469	0	Yes
ERP Steel	-9.562907	0	Yes
ERP Textiles	-9.342295	0	Yes
ERP Paper	-8.928508	0	Yes

Sources: Own construction. MER data comes from the new dataset collected from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Sectoral industrial production from FGV's *Revista de Conjuntura Econômica*.

Table 11.5 presents the cointegration tests between all industrial sectors and the ERP of that sector. The results show the existence of long-term relationships between the industrial production of each sector and the ERP of that sector, which guarantees that the regressions of Section 7.5 are not spurious.

Table 11.5 – Cointegration Tests

Test Type	<i>Data Trend</i>	ERP				
		None	None	Linear	Linear	Quad
	<i>Intercept</i>	No	Yes	Yes	Yes	Yes
Sector	<i>Trend</i>	No	No	No	Trend	Trend
Food	<i>Trace</i>	0	1	1	1	2
	<i>Max-Eig</i>	0	1	1	1	2
Beverages	<i>Trace</i>	0	1	1	1	2
	<i>Max-Eig</i>	1	1	1	1	2
Rubber	<i>Trace</i>	0	1	2	0	2
	<i>Max-Eig</i>	0	1	2	0	2
Leather	<i>Trace</i>	0	1	0	0	2
	<i>Max-Eig</i>	0	0	0	0	0
Cement	<i>Trace</i>	1	0	0	0	2
	<i>Max-Eig</i>	0	0	0	0	0
Extractive	<i>Trace</i>	1	0	0	0	2
	<i>Max-Eig</i>	1	0	0	1	2
Tobacco	<i>Trace</i>	0	1	1	1	2
	<i>Max-Eig</i>	0	1	1	1	2
Steel	<i>Trace</i>	2	1	0	0	0
	<i>Max-Eig</i>	2	0	0	0	0
Textiles	<i>Trace</i>	0	1	1	1	2
	<i>Max-Eig</i>	0	1	1	1	2
Paper	<i>Trace</i>	0	0	0	1	2
	<i>Max-Eig</i>	0	0	0	1	2

Sources: Own construction. MER data comes from the new dataset collected from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Sectoral industrial production from FGV's *Revista de Conjuntura Econômica*.

Table 11.6 presents the results of the VEC estimates between each industrial sector and its corresponding ERP. The VECs could only be performed given the

existence of cointegration equations between all the sectors and their corresponding ERPs shown in Table 11.5 above.

The VEC exercises are an additional robustness check to support the results obtained in Section 7.5. A few points are worth highlighting from the VEC results. First, they show that the short-term correction happens with the ERPs preceding the industrial sector series. The coefficients are also very small, similar to the regressions, which suggests that this impact is very limited. This shows that there is no inverse causality for any of the 10 sectors used in the regressions. The VEC does not indicate a short-term correction with the industrial sectors explaining future variations in the ERPs, which would suggest endogeneity.

Table 11.6 – VEC Estimates

Vector Error Correction Model							
	Food	ERP			Extractive	ERP	
Food	-	-0.980	Coef	Extractive	-	-0.075	Coef
(-1)	-	0.370	P-value	(-1)	-	0.270	P-value
ERP	-0.045	-	Coef	ERP	-0.095	-	Coef
(-1)	0.047**	-	P-value	(-1)	0.013	-	P-value
	Beverages	ERP			Tobacco	ERP	
Beverages	-	-0.200	Coef	Beverages	-	-0.200	Coef
(-1)	-	0.210	P-value	(-1)	-	0.340	P-value
ERP	0.038	-	Coef	ERP	0.015	-	Coef
(-1)	0.045**	-	P-value	(-1)	0.290	-	P-value
	Rubber	ERP			Steel	ERP	
Rubber	-	0.100	Coef	Steel	-	-0.440	Coef
(-1)	-	0.200	P-value	(-1)	-	0.140	P-value
ERP	0.079	-	Coef	ERP	-0.050	-	Coef
(-1)	0.200	-	P-value	(-1)	0.035***	-	P-value
	Leather	ERP			Textiles	ERP	
Leather	-	0.220	Coef	Textile	-	0.570	Coef
(-1)	-	0.200	P-value	(-1)	-	0.320	P-value
ERP	-0.055	-	Coef	ERP	-0.060	-	Coef
(-1)	0.057*	-	P-value	(-1)	0.041**	-	P-value
	Cement	ERP			Paper	ERP	
Cement	-	0.200	Coef	Paper	-	0.025	Coef
(-1)	-	0.180	P-value	(-1)	-	0.460	P-value
ERP	-0.069	-	Coef	ERP	0.035	-	Coef
(-1)	0.089*	-	P-value	(-1)	0.180	-	P-value
							N=85

Sources: Own construction. MER data comes from the new dataset collected from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Sectoral industrial production from FGV's *Revista de Conjuntura Econômica*.

11.3 Additional Regressions

This third sub-section presents two additional sets of regressions that are also a robustness exercise for the regressions from Section 7.5. The first exercise runs a panel data rather than OLS estimates, while the second changes the explanatory variables to the difference between the MERs and the SER.

The first exercise is to perform the same regressions as Section 7.5, but rather than using individual OLS regressions it shows a panel data set of all sectors combined. As discussed in Chapter 7, a panel is not expected to perform well with the current data set, given that the time horizon is larger and there is little variation in the cross section space. But the panel can provide an interesting counterfactual exercise. Since the results of the original regressions indicate small coefficients between the exchange rates and industrial production, it would be expected that a panel, which provides the average impact of all MER on industrial production, would also show minimal or not statistically significant coefficients. This is the main difference in the panel specification compared to the original regressions. Since all sectors are tested together, and all of the non-explained cross-section variation goes to the fixed effects, the original coefficient of the exchange rate to industrial production is not sectoral but a combined coefficient for the whole economy.

The panel was performed with specifications both on level and first difference, as well as with a variety of estimating methods. The various estimating methods were used to guarantee that the results were robustly tested, with two stages least square (2SLS) and general method of moments (GMM) estimators being used to correct for serial correlation. The results of the panel estimates are presented at Table 11.7.

Table 11.7 – Panel Data Estimations

Estimation Equation	Dependent Variable - Real Industrial Production Index (Log)								
	Level					First Difference			
	OLS Pooled i	OLS FE ii	OLS FE ii	2SLE FE iii	GMM v	OLS Pooled vi	OLS FE vii	2SLE FE ix	GMM x
Intercept	0.13** (0.058)	4.53*** (0.09)	0.36*** (0.11)	0.196** (0.12)	0.196** (0.12)	0.006*** (0.001)	0.006*** (0.001)	0.019 (0.02)	0.019 (0.02)
Effective Rate of Protection (Log and 1st Difference)	-0.00016 (0.0053)	0.02 (0.008)	0.03 (0.008)	0.04 (0.01)	0.04 (0.01)	0.02 (0.03)	0.019 (0.03)	-0.2 (0.59)	-0.1 (0.59)
Controls	X	X	X	X	X	X	X	X	X
Time Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Number of Observations	860	860	860	860	860	860	860	860	860
R-Squared	0.95	0.73	0.95	0.95	0.95	0.1	0.1	-0.08	-0.08
Adjusted R-Squared	0.95	0.7	0.95	0.95	0.95	0.09	0.09	-0.22	-0.22
Durbin-Watson Statistic	2.43	0.18	2.38	2.47	2.47	2.46	2.49	2.37	2.37

Sources: Own construction. MER data comes from the new dataset collected from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Tariffs come from Morley (1969). Sectoral industrial production from FGV's *Revista de Conjuntura Econômica*. Instruction 113 FDI from Caputo (2007). Population from IBGE (2017).

The panel data results confirm the above expectations. The coefficients of the exchange rate are generally very small and in all cases not statistically significant. As in the original results, the coefficients of tariffs are also very small and not statistically significant. This confirms that there does not seem to be any important average impact of the exchange rate on industrial production – the same result obtained above from the indexes and the regressions from Section 7.5. It is also worth highlighting that the panel data regressions are not very robust. Even in the cases when serial correlation is corrected by GMM or 2SLS, the explanatory power of the first difference regression is very small, confirming that this model is not the best option for the exercise.

The second exercise provides a different econometric methodology to the regressions of Section 7.5. As discussed in Chapter 7 and validated by the tests of Appendix 1, the regressions of Section 7.5 seem robust enough to suggest the MER system's distortions to industrial growth were minimal and did not cause major changes to the overall performance of the industrial sector in Brazil.

There is, however, one possible weakness of the adopted methodology: the policy intervention, which is measured by the gap between the ERP and the SER, is only being captured by the in-sample simulation after the regressions are performed. The regressions only capture the direct effect of the ERP in each sector's industrial production growth, which from an econometric standpoint means that they are not being directly controlled for the SER in the regressions. One could argue that this process does not prevent an endogeneity problem. As was already discussed, since each MER was a separate market, this is not a problem, at least in theory. The existence of cointegration equations between the nominal exchange rates and industrial production for all the sectors and the VEC estimates (both in Appendix 1) support the correct direction of causality, while also acting as robustness exercises to guarantee that the short-term effects estimated above are not spurious. Nonetheless, it could be argued that there may still be an inverse causality between industrial production and the ERP, invalidating the results.

An alternative econometric approach deals with this problem and is another robustness check for the exercise done above. Instead of regressing the ERP on the production of each industrial sector, a different specification can directly estimate the effect of the gap between the ERPs and the SER. By doing this, the new regressions estimate the direct elasticity of the policy intervention, the size of the gap between both exchange rates, and with this control for the long-term underlying economic fundamentals with the inclusion of the SER in the regressions.

This alternative approach has, however, a different problem. If the results from the above section are correct, they mean the effects of the distortions were very small or inexistent for most sectors, so the elasticity of the policy intervention in

these new regressions would need to be close to zero or not statistically significant to be consistent with the previous results. If this exercise captures a strong effect from the policy interventions on industrial production, it would suggest a large distortion effect, contradicting the above results. Usually regressions searching for small effects or statistically insignificant parameters do not tell interesting stories, but in this case they would be confirming the above results. The alternative estimation specification is:

$$\text{Real industrial production}_t = c + \beta (\text{gap between ERP of the sector and the SER})_t + \text{controls}_t + \text{ARMA terms} + e$$

Table 11.8 presents the new regression results.

Table 11.8 – Alternative Regression Results, 1953-1961

	Dependent Variable - Real Industrial Production Index (Log and 1st Difference)									
	Food	Beverages	Rubber	Leather	Cement	Extractive	Tobacco	Steel	Textile	Paper
Equation	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Intercept	0.0034	0	0.001	0	0.009	0.028	-0.001	0.02	0.001	0.01
	0.55	0.84	0.92	0	0.08	0	0.1	0	0.67	0.03
Gap between category and market exchange rate (Log and 1st Difference)	0.2**	0.034	0.43	0.02	-0.09	-0.25	0.09***	-0.016	0.002	-0.06
	0.02	0.37	0.19	0.53		0.21	0.002	0.42	0.96	0.42
Controls	X	X	X	X	X	X	X	X	X	X
ARMA Terms	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Number of Observations	62	64	63	62	62	58	62	62	61	61
R-Squared	0.35	0.55	0.28	0.7	0.098	0.46	0.5	0.28	0.4	0.46
Adjusted R-Squared	0.28	0.48	0.2	0.68	0.05	0.37	0.43	0.23	0.33	0.39

Sources: MER data from Sumoc's *Annual Bulletins and Reports* (1953-1961) and the Ministry of Finance's *Monthly Statistical Books* (1951-1957), containing data from Banco do Brasil. Tariffs are from Morley (1969, p. 307). Sectoral industrial production from FGV's *Revista de Conjuntura Econômica* (1953-1961). Instruction 113 FDI from Caputo (2007, p. 54). Population from IBGE (2017). Methodology for the MER data can be found in Appendix 4. Statistical significance: *** for 1% level; ** for 5% level; * for 10% level.

A few results from the new estimations are worth highlighting. First, there are a significantly smaller number of parameters that are statistically significant. Only in two sectors, food and tobacco, is β statistically significant. For all other sectors, the results show the gap having no statistically significant effect on industrial production. Second, for the two sectors that have statistically

significant results and all the others that do not, the coefficients are extremely small and suggest no effect from the policy intervention on the industrial production of each sector.

These results confirm the regressions of Chapter 6. The inexistence of the policy effect on industrial production suggests that distortions were minimal

12. Appendix 2 – Original Instructions 70 and 113 of Sumoc

12.1 Instruction 70



Superintendência da Moeda e do Crédito

Normas ratificadas pela Instrução nº 12, salvo as colidentes com o disposto na Lei nº 2.145

NORMAS PARA PROVIDÊNCIA

- Instrução nº 74, de 30.10.53

NORMAS PARA EFEITO DE APLICAÇÃO

- Instrução nº 76, de 6.11.53

INSTRUÇÃO Nº 70

A Superintendência da Moeda e do Crédito, de acôrdo com o resolvido pelo Conselho, em sessão desta data, e tendo em vista o disposto nos arts. 3º, alínea "h", e 6º do Decreto-lei nº 7.293, de 2 de fevereiro de 1945, resolve:

(1) I - Será obrigatòriamente vendido ao Banco do Brasil S.A., ou a Banco autorizado, às taxas fixadas pelo Conselho da Superintendência da Moeda e do Crédito e resultantes de paridade declarada ao Fundo Monetário Internacional, o câmbio proveniente da exportação, revogadas as Instruções ns. 48, 53, 58, 64, 65, 66 e 69.

II - Os Bancos autorizados repassarão ao Banco do Brasil S.A. o total das compras que fizerem na forma do número anterior.

III - Processar-se-á pelo mercado oficial⁽²⁾ o pagamento das importações, de acôrdo com o artº 1º da Lei nº 1.807, de 7 de janeiro de 1953.

(4) IV - Para efeito da distribuição de câmbio e de acôrdo com a sua maior ou menor essencialidade, ficam as mercadorias de importação classificadas nas cinco categorias constantes das relações anexas, respeitadas, quanto às moedas de convênio, as listas ajustadas com os respectivos países.

V - A Carteira de Câmbio do Banco do Brasil mandará vender, em público pregão, nas Bôlsas de Fundos Públicos do País, por intermédio de corretores oficiais, respeitadas as prioridades a que se refere a Lei nº 1.807, de 7 de janeiro de 1953, as disponibilidades de câmbio que puder destinar ao pagamento de importações.

(1), (2) (3) (4) - VIDE VERSO

- continua -

VI - A venda a que se refere o número anterior será efetuada por meio de documentos de promessa de venda de câmbio, válidos por 5 dias úteis e emitidos pela Carteira de Câmbio sob distribuição pelas cinco categorias previstas no nº IV.

(5) VII - Só poderão licitar êsses documentos as autarquias, associações que representem legalmente as classes, inclusive rurais e firmas comerciais ou industriais, estas últimas devidamente registradas, até a presente data, no ramo de importação.

(6) VIII - Fica limitado em dez mil dólares, ou seu equivalente, o máximo que um mesmo licitante pode adquirir, de cada dia, salvo se comprovar, a juízo do Conselho da Superintendência da Moeda e do Crédito, necessidade de cota superior.

IX - Não serão mais atribuídas licenças aos licitantes que adquirirem documentos para importação de matérias primas ou mercadorias, em quantidade superior às suas necessidades trimestrais de consumo, ou em valor que exceda a dez vezes a importância de seu capital já registrado.

(7) X - No dia imediato ao da aquisição, o adquirente do documento de promessa de venda de câmbio recolherá ao Banco do Brasil S.A. a quantia pela qual o houver adquirido, habilitando-se, com a apresentação do recibo desse recolhimento e depois de verificados os preços das mercadorias a importar, a obter a licença de importação a ser concedida pela Carteira de Exportação e Importação, que anotará os seus característicos no referido documento.

XI - Mediante a entrega do documento de promessa de venda de câmbio e de uma via da licença de importação, será vendido câmbio ao adquirente, à taxa oficial, por qualquer Banco autorizado, no valor da importância licenciada, ficando o mesmo adquirente com direito à restituição do equivalente à diferença não utilizada.

(5) (6) (7) VIDE VERSOS

- continua -

REDA:
- Instrução nº 70, de 6.11.53

XII - O Banco do Brasil e os Bancos que comprarem cambiais de exportação pagarão aos exportadores, no ato da liquidação do respectivo contrato de câmbio, além de seu equivalente à taxa do mercado oficial, uma bonificação de 5 cruzeiros por dólar, ou o seu equivalente em outra moeda, em se tratando de letras de café, e de 10 cruzeiros para as dos outros produtos, importância essa que será debitada à conta "Compra e Venda de Produtos Exportáveis".

XIII - As importâncias recolhidas no Banco do Brasil S.A. a que se refere o nº X, serão escrituradas a crédito da conta "Compra e Venda de Produtos Exportáveis", destinando-se a atender ao disposto no nº XII e à regularização de operações cambiais, bem como ao financiamento a longo prazo e juros baixos da modernização dos métodos de produção agrícola e recuperação da lavoura nacional, e, ainda, à compra de produtos agropecuários, de sementes, adubos, inseticidas, máquinas e utensílios para emprego na lavoura.

XIV - Serão concedidas licenças de importação de mercadorias das três primeiras categorias, quando houver financiamento bancário comprovado, em moedas estrangeiras, pelo prazo médio mínimo de 1 ano em cujo vencimento será liquidado pelo importador, de acordo com o processo estabelecido nesta Instrução e sob registro dessas operações, para todos os efeitos, na Fiscalização Bancária do Banco do Brasil S.A., perante a qual deverá ser assinado termo de responsabilidade, com prévia audiência do Conselho da Superintendência da Moeda e do Crédito.

XV - A venda de câmbio para cobertura de licença de importação, emitidas anteriormente à presente Instrução, continuará na dependência de distribuição a ser feita pela Carteira de Câmbio, dentro de suas possibilidades.

XVI - Excetua-se das regras desta Instrução a entrada

- continua -

de capitais sob a forma de importação de bens de produção, sem cobertura cambial, e que apenas dependerá, em cada caso, de autorização do Conselho da Superintendência da Moeda e do Crédito.

Rio de Janeiro, 9 de outubro de 1.953
SUPERINTENDÊNCIA DA MOEDA E DO CRÉDITO

(a) José Soares Maciel Filho
Diretor-Executivo

(D.O. de 13 e 15.10.53)

12.2 Instruction 113



Superintendência da Moeda e do Crédito

INSTRUÇÃO Nº 113

O Conselho da Superintendência da Moeda e do Crédito, considerando a necessidade de simplificar a regulamentação sobre o licenciamento de importações que independam de cobertura cambial, bem como as vantagens da criação de um clima favorável para os investimentos de capitais estrangeiros no País, resolve, nos termos da Lei nº 2.145, de 29 de dezembro de 1953, e de conformidade com o artigo 6º do Decreto-lei nº 7.293, de 2 de fevereiro de 1945, baixar as seguintes instruções:

Do licenciamento de importações
que independam de cobertura cambial:

- 1º - A Carteira de Comércio Exterior (CACEX) poderá emitir "licenças de importação sem cobertura cambial", que correspondam a investimentos estrangeiros no País, para conjuntos de equipamentos ou, em casos excepcionais, para equipamentos destinados à complementação ou aperfeiçoamento dos conjuntos já existentes, quando o Diretor da Carteira dispuser de suficientes elementos de convicção de que não será realizado pagamento em divisas correspondente ao valor dessas importações.
- 2º - O investidor apresentará prova de que, efetivamente, dispõe no exterior, dos equipamentos a serem importados ou de recursos para seu pagamento. Essa prova será feita:
 - a) se os recursos ou equipamentos provierem de País com o qual o Brasil mantenha convênio de pagamentos, por declaração do Banco ou órgão executor do convênio, que contenha autorização expressa de dispensa de pagamento de seu valor;

- b) se os recursos ou equipamentos provierem de País de moedas de livre curso internacional, por declaração de Banco idôneo, a juízo do Banco do Brasil S/A. Nesta hipótese, a prova poderá ser dispensada pela CACEX, se a idoneidade e o vulto da empresa investidora tornarem óbvia a existência de tais recursos.
- 3º - Antes da emissão das licenças, deverá ser apresentada declaração e compromisso do investidor e, se for o caso, da empresa nacional, em que irá ser feito o investimento, de que:
- a) os equipamentos licenciados serão incorporados ao Ativo da empresa nacional ou da filial do investidor no Brasil, sem contrapartida no Passivo exigível;
 - b) a empresa em que fôr realizado o investimento ou a filial não efetuará pagamento no exterior, correspondente ao valor dos equipamentos importados;
 - c) os equipamentos permanecerão no Ativo da empresa ou filial pelo prazo correspondente a sua utilização normal.

A declaração e compromisso de que trata o presente item conterà o reconhecimento expresso de que a sua inobservância será considerada, para todos os efeitos, como infringente do disposto no art. 11 da Lei nº 2.145, de 29.12.1953, ficando sujeito o infrator às sanções correspondentes e obrigando-se os interessados, nesse caso, ao pagamento dos ágios que seriam exigíveis, caso a importação não se tivesse realizado sem cobertura cambial.

- 4º - A Carteira de Comércio Exterior ouvirá o Conselho da Superintendência da Moeda e do Crédito, caso o conjunto de equipamentos se destine à produção de artigos classificados nas 4ª e 5ª categorias de importação e que sejam notoriamente supérfluos para a economia do País.

Do financiamento do exterior a empresas brasileiras

- 5º - A Carteira de Comércio Exterior (CACEX) poderá licenciar, a favor de empresas brasileiras, a importação de conjuntos de equipamentos financiados no exterior, atendidas as seguintes condições:

- a) os conjuntos de equipamentos devem destinar-se à produção de artigos classificados nas 1a., 2a. e 3a. categorias de importação. Nos demais casos, a Carteira ouvirá o Conselho da Superintendência da Moeda e do Crédito, sôbre a essencialidade do produto, tendo em vista os critérios propostos pelo Conselho Nacional de Economia;
- b) nenhuma prestação anual do pagamento será superior a 20% (vinte por cento) do valor do financiamento.
- 6º - A Carteira de Câmbio poderá conceder aos beneficiários dos financiamentos câmbio à taxa oficial para o reembolso que se refere a letra "b", supra, mediante o pagamento antecipado de uma sobretaxa que, até ulterior deliberação, é fixada em Cr\$ 40,00 (quarenta cruzeiros) por dólar americano ou seu equivalente em outras moedas.
- o compromisso cambial por parte da Carteira dependerá de suas disponibilidades em divisas, devendo ser destacadas as importâncias que corresponderem às obrigações que forem assumidas.
 - poderá, também, a Carteira de Câmbio permitir que o pagamento se realize, no todo ou em parte, pelo mercado de taxa livre.
- 7º - Serão considerados primeiramente os investimentos cujos projetos já tenham sido submetidos à apreciação do Governo.
- 8º - Ficam revogados e tornados sem efeito a Instrução nº 81, de 22 de dezembro de 1953, e os Avisos desta Superintendência de 22 de dezembro de 1953, 6 e 15 de janeiro e 24 de julho de 1954, entrando a presente Instrução em vigor a partir da data de sua publicação no Diário Oficial.

Rio de Janeiro, 17 de janeiro de 1955

SUPERINTENDÊNCIA DA MOEDA E DO CRÉDITO

a) Octávio Gouvêa de Bulhões

Diretor Executivo

(D.O. de 18.1.55)

13. Appendix 3 – Multiple Exchange Rates Database

Table 13.1 – Multiple Exchange Rates, 1953-1960 (CR\$ per US\$)

	Official (CR\$)	Category 1	Category 2	Category 3	Category 4	Category 5	Special	General	MER Average	Free Market
Oct-53	18.7	15.2	25.3	38.2	40.5	86.4			31.4	46.3
Nov-53	18.7	12.3	31.8	42.1	51.8	118.9			35.8	53.3
Dec-53	18.7	16.3	22.5	40.0	44.8	114.9			30.6	55.3
Jan-54	18.7	22.0	25.8	47.8	58.4	110.9			36.2	55.4
Feb-54	18.7	24.1	39.5	58.2	77.3	131.3			46.8	59.9
Mar-54	18.7	25.7	38.0	52.5	78.1	120.6			45.2	58.4
Apr-54	18.7	23.7	25.1	49.0	76.5	115.3			38.6	50.9
May-54	18.7	18.8	23.0	51.8	74.4	122.5			38.4	50.7
Jun-54	18.7	17.2	22.7	55.2	78.8	129.4			39.8	58.1
Jul-54	18.7	26.0	35.2	70.0	85.9	146.2			50.6	62.3
Aug-54	18.7	32.4	40.5	72.8	96.1	151.1			56.1	62.2
Sep-54	18.7	29.3	41.8	79.3	92.3	153.7			55.7	63.4
Oct-54	18.7	38.3	42.8	91.6	99.0	163.0			62.5	66.4
Nov-54	18.7	55.7	58.3	127.0	132.0	196.8			88.5	73.9
Dec-54	18.7	47.2	59.7	129.3	162.9	185.5			89.0	76.7
Jan-55	18.7	40.6	55.5	119.6	167.7	199.4			87.9	75.2
Feb-55	18.7	45.6	61.7	142.9	196.1	237.3			101.3	77.8
Mar-55	18.7	57.4	85.4	161.3	222.5	339.2			116.9	82.8
Apr-55	18.7	66.3	92.8	177.5	163.6	301.8			119.1	80.6
May-55	18.7	66.3	84.7	166.6	231.0	272.8			127.1	81.1
Jun-55	18.7	66.6	94.4	178.4	271.4	283.9			132.4	76.8
Jul-55	18.7	71.7	102.4	181.5	281.7	266.9			126.2	72.9
Aug-55	18.7	73.0	108.9	171.5	205.8	284.9			122.3	71.1
Sep-55	18.7	72.5	94.0	154.0	203.3	282.1			115.0	67.8
Oct-55	18.7	72.5	91.1	145.1	182.1	297.8			110.9	67.1
Nov-55	18.7	68.1	85.0	149.4	194.4	298.6			98.3	67.0
Dec-55	18.7	66.9	81.2	141.6	209.9	327.7			101.6	67.4
Jan-56	18.7	70.9	82.0	163.6	221.6	318.6			121.2	72.4
Feb-56	18.7	83.0	112.3	190.6	246.5	314.9			147.2	71.4
Mar-56	18.7	85.1	118.8	177.4	234.0	284.8			143.9	74.1
Apr-56	18.7	90.5	127.3	181.1	251.1	297.8			149.5	79.9
May-56	18.7	98.9	128.5	196.6	212.3	281.5			154.8	84.0
Jun-56	18.7	87.6	123.1	186.7	217.9	289.5			142.8	83.5
Jul-56	18.7	68.0	93.7	164.8	210.9	285.4			134.7	75.6
Aug-56	18.7	63.2	90.6	151.1	195.8	260.4			100.9	74.6
Sep-56	18.7	51.2	81.8	143.7	186.3	277.0			109.4	69.7
Oct-56	18.7	46.3	71.1	121.9	185.9	304.3			85.5	68.5
Nov-56	18.7	40.8	68.8	115.6	173.2	290.4			88.6	67.4
Dec-56	18.7	43.7	67.6	105.4	156.9	295.6			85.0	66.2
Jan-57	18.7	38.9	59.6	90.4	121.4	283.8			78.9	65.6
Feb-57	18.7	38.0	64.3	89.5	125.7	294.3			80.2	66.5
Mar-57	18.7	41.3	66.0	83.1	121.7	317.9			83.5	65.4

	Official (CR\$)	Category 1	Category 2	Category 3	Category 4	Category 5	Special	General	MER Average	Free Market
Apr-57	18.7	43.2	66.3	84.1	132.0	311.3			82.9	69.3
May-57	18.7	41.1	63.0	86.4	138.6	311.9			82.9	74.5
Jun-57	18.7	41.7	58.2	87.0	151.1	300.8			74.4	71.7
Jul-57	18.7	47.4	62.8	91.0	150.6	274.8			72.3	74.2
Aug-57	18.7	60.2	89.2	115.9	183.8	281.0			106.3	79.0
Sep-57	18.7						69.2	158.7	76.1	82.1
Oct-57	18.7						66.4	197.0	82.6	88.1
Nov-57	18.7						64.1	210.8	77.4	91.0
Dec-57	18.7						71.6	226.2	82.7	91.7
Jan-58	18.7						80.0	206.4	98.2	98.3
Feb-58	18.7						100.8	236.7	116.3	100.2
Mar-58	18.7						110.7	260.9	128.4	108.4
Apr-58	18.7						134.6	282.1	150.4	122.8
May-58	18.7						120.9	259.4	137.9	125.3
Jun-58	18.7						124.5	263.1	136.7	133.8
Jul-58	18.7						128.9	281.7	138.7	135.1
Aug-58	18.7						137.3	299.0	151.3	164.6
Sep-58	18.7						162.4	336.1	174.3	158.0
Oct-58	18.7						175.7	346.2	207.7	142.8
Nov-58	18.7						169.9	315.8	183.0	140.4
Dec-58	18.7						165.7	290.9	175.8	140.4
Jan-59	18.7						182.0	340.7	192.3	146.5
Feb-59	18.7						228.9	351.2	240.3	141.4
Mar-59	18.7						262.6	355.0	271.4	
Apr-59	18.7						199.2	327.6	213.2	
May-59	18.7						161.2	317.4	170.1	
Jun-59	18.7						153.6	320.7	167.7	
Jul-59	18.7						156.7	302.9	168.3	
Aug-59	18.7						152.5	311.7	163.7	
Sep-59	18.7						157.9	344.8	169.5	
Oct-59	18.7						199.6	398.7	230.1	
Nov-59	18.7						189.4	395.6	210.4	
Dec-59	18.7						184.2	398.4	199.4	
Jan-60	18.7						188.3	427.2	207.7	
Feb-60	18.7						188.7	472.5	208.7	
Mar-60	18.7						217.6	527.7	242.6	
Apr-60	18.7						221.1	506.6	239.8	
May-60	18.7						218.6	482.0	236.9	
Jun-60	18.7						212.3	444.2	237.2	
Jul-60	18.7						209.2	454.1	231.2	
Aug-60	18.7						208.9	450.6	223.7	
Sep-60	18.7						206.7	531.8	231.7	
Oct-60	18.7						207.0	573.6	243.4	
Nov-60	18.7						209.2	607.2	232.2	
Dec-60	18.7						206.8	624.2	235.1	

Table 13.2 – Offered and Auctioned Foreign Exchange, 1953-1960 (US\$ million)

	Category 1	Category 2	Category 3	Category 4	Category 5	Special	General	Total Auctioned	Total Offered
Oct-53	5673	10918	9962	2277	1276			30106	59330
Nov-53	10209	22683	21112	4397	1575			59976	93593
Dec-53	11441	25754	24618	3823	1033			66669	101475
Jan-54	9199	13831	14721	2373	711			40835	58625
Feb-54	10477	18489	19722	2620	775			52083	64233
Mar-54	22430	36720	38733	8679	1689			108251	175171
Apr-54	24471	29720	34689	7473	1626			97979	262112
May-54	26054	27169	39270	7324	1702			101519	323558
Jun-54	24866	24394	38248	6676	1447			95631	214830
Jul-54	20278	18005	26874	4787	921			70865	159163
Aug-54	22617	17966	25636	6795	1251			74265	159230
Sep-54	18496	13088	18548	4130	830			55092	143653
Oct-54	16691	11869	14965	3911	602			48038	160667
Nov-54	11109	11791	13266	3498	518			40182	106930
Dec-54	14401	15126	15005	5201	582			50315	163620
Jan-55	14223	14623	16790	6622	754			53012	148800
Feb-55	12549	10754	12194	5802	489			41788	112460
Mar-55	20087	19980	20228	6897	884			68076	163440
Apr-55	12322	12335	12266	4021	431			41375	134700
May-55	10127	20618	22124	2766	2237			57872	136645
Jun-55	7284	13646	12799	1602	1228			36559	140560
Jul-55	11022	13013	11488	2993	368			38884	135513
Aug-55	13303	19780	12551	1572	1061			48267	143850
Sep-55	12852	20702	14957	1883	1391			51785	149365
Oct-55	13725	22108	15973	2011	1485			55302	154880
Nov-55	13393	23168	12499	777	0			49834	146130
Dec-55	11664	19168	14113	2156	0			47099	141755
Jan-56	8102	17113	16101	2144	905			44365	137380
Feb-56	6785	13903	12725	1530	1295			36238	66180
Mar-56	12446	25505	23343	2806	2376			66476	78740
Apr-56	10153	20066	18647	2558	1311			52735	63299
May-56	10907	21558	20033	2748	1409			56655	67155
Jun-56	11293	20201	16631	2265	846			51236	65195
Jul-56	5801	19788	25995	3322	1058			55964	69854
Aug-56	18141	26564	13455	1430	913			60503	78486
Sep-56	9899	23835	23503	2452	1448			61138	81046
Oct-56	16517	25398	16981	1975	903			61774	83606
Nov-56	14448	23255	19374	2752	1944			61774	83606
Dec-56	14597	23494	19573	2780	1964			62409	86166
Jan-57	7215	22554	28587	3480	1209			63044	88726
Feb-57	8171	16942	17772	2348	1601			46833	77105
Mar-57	5977	13373	16642	2270	1736			39998	61086

	Category 1	Category 2	Category 3	Category 4	Category 5	Special	General	Total Auctioned	Total Offered
Apr-57	7405	16081	21699	3260	1637			50082	74898
May-57	8236	17886	24136	3627	1820			55705	81145
Jun-57	11875	19566	17014	2447	1352			52254	76537
Jul-57	15914	23932	17812	2545	451			60654	76721
Aug-57	5795	12637	16812	2364	804			38412	48440
Sep-57						19875	1667	21542	28711
Oct-57						45952	6475	52427	104974
Nov-57						46249	4599	50848	80594
Dec-57						41246	3205	44451	70775
Jan-58						42561	7160	49721	87051
Feb-58						25214	3257	28471	56700
Mar-58						37337	4978	42315	75600
Apr-58						30985	3704	34689	74099
May-58						37419	5254	42673	81791
Jun-58						39504	3803	43307	86508
Jul-58						44113	3007	47120	92609
Aug-58						40346	3812	44158	78661
Sep-58						43195	3175	46370	69096
Oct-58						27269	6309	33578	63753
Nov-58						26878	2654	29532	47820
Dec-58						27883	2440	30323	48015
Jan-59						31453	2194	33647	50651
Feb-59						20943	2146	23089	35984
Mar-59						22210	2325	24535	37970
Apr-59						28657	3511	32168	53737
May-59						30376	1820	32196	50584
Jun-59						27242	2522	29764	47195
Jul-59						24237	2086	26323	44955
Aug-59						24068	1817	25885	44842
Sep-59						36612	2412	39024	57580
Oct-59						22498	4069	26567	55042
Nov-59						25188	2851	28039	48567
Dec-59						33950	2590	36540	49063
Jan-60						28269	2500	30769	38504
Feb-60						33115	2519	35634	43381
Mar-60						30398	2675	33073	41059
Apr-60						29068	2031	31099	37207
May-60						39637	2952	42589	50128
Jun-60						35388	4247	39635	49501
Jul-60						32462	3201	35663	44310
Aug-60						43844	2867	46711	54290
Sep-60						47320	3938	51258	60408
Oct-60						43442	4796	48238	62852
Nov-60						48504	2983	51487	61256
Dec-60						59582	4342	63924	72484

14. Appendix 4 – Data Sources and Methodology

This appendix presents the methodology of the construction of the figures presented in the thesis. Most of the methodological explanation is related to the transformation of primary data to the format presented in the tables. All the figures of the thesis that directly present statistical sources or were reproduced from other secondary literature do not require additional methodological explanation and are not part of this appendix. All the figures explained in this appendix were highlighted in their sources.

Figure 4.1 – Real Exchange Rate, 1939-1960 (Cr\$ per US\$, 1939=100)

Figure 4.1 was constructed using the following procedure. The primary series of exchange rates for the five categories of the MER system between 1953 and 1957, and later for the two categories between 1957-1961, were collected from the Ministry of Finance's *Monthly Statistical Books*, for the period between 1953 and 1955, and for 1955 to 1961 from Sumoc's *Monthly Bulletins* and *Annual Reports* – the latter aggregated data from the bulletins. Sumoc's official documents only started being published in 1955, but the Ministry of Finance data collected information on the exchange rates from Sumoc between 1953 and 1955, which were published in its own official documents. All three publications were consulted in the archives of the Brazilian Central Bank (BCB) in Brasilia.

Prior to the MER period, the fixed exchange rate of \$18.7 was used between 1939 and 1953. The exchange rate series were then weighted according to the amount of currency auctioned for each category in each of the periods. The

data on the quantities of auctioned currency per category were also collected from the same three publications described above. This allowed the calculation of an average weighted MER for the whole period. Finally, to construct the real exchange series an index of the weighted average exchange rates was built with 1939 = 100, and then the calculation of the real exchange rate was done by discounting annualized inflation for every year. Inflation data was collected from IBGE (2017).

Figure 5.1 – Multiple Exchange Rates, 1951-1960 (Cr\$ per US\$)

Figure 5.1 was constructed using the exact same methodology described in the first part of the explanation of Figure 4.1, but directly presents the MER collected from the original sources.

Table 5.1 – Agios and Bonificações, 1953-1960 (Cr\$ Millions)

Table 5.1 was constructed using the following methodology: Original data for the *agios* and *bonificacoes* were obtained from the Ministry of Finance's *Monthly Statistical Books*, for the period between 1953 and 1955, and for the remaining period until 1961 from Sumoc's *Monthly Bulletins* or *Annual Reports*, which aggregated data from the bulletins. The original data were monthly, and then aggregated to an annual basis. The net revenues from the MER system correspond to the simple deduction of the *bonificacoes* from the *agios*. The net revenues were not directly presented in the original documents, and were calculated for the table.

Figure 5.4 - Liquid and 'Illiquid' FDI, 1955-1961 (US\$ Million)

Figure 5.4 was constructed using the following methodology. Data on overall FDI inflows was obtained from IBGE (2017) on an annual basis. Caputo (2007)

calculated, based on Sumoc's Instructions between 1955 and 1961, the overall level of FDI inflows coming under Instruction 113 authorizations. All imports via this system had to be authorized by Sumoc. Since these were not inflows, but imports, as discussed in the thesis, they are classified as 'illiquid' FDI. These levels are deduced from the overall level of FDI to calculate the 'liquid' FDI flows. The two series are plotted together in Figure 5.4

Figure 5.7 Auctioned Foreign Exchange, 1953-1960 (US\$ million)

Figure 5.7 was constructed using the same methodology described in the second part of the explanation of Figure 4.1, which describes the collection of the auctioned currency from the MER, and was collected from the same sources.

Figure 5.8 – Imports Outside the Auction System, 1953-1961

Figure 5.2 was constructed using the following process. Data of the overall level of imports in Brazil were obtained from IBGE (1953-1961), on an annual basis, while data on the quantities of auctioned foreign exchange were obtained following the same methodology presented in the second part of Figure 4.1. Since the MER was a closed system, and only exemptions authorized by Sumoc or direct imports by the government could be imported outside the system, the figures subtract the quantities of currency auctioned from the overall level of imports per year. This results in the overall level of imports outside the auction system. Finally, the level of imports outside the auctions was calculated as a percentage of the overall level of imports.

Figure 6.2 – Auctioned Foreign Exchange and the Gap (US\$ million), 1953-1961

Figure 6.2 was constructed using the following methodology. Original data of auctioned foreign exchange and offered foreign exchange were constructed using the same methodology described in the second part of the explanation of Figure 4.1, and collected from the same sources. The same documents from the Ministry of Finance and Sumoc report both the level of auctioned and offered foreign exchange at the auctions. However, for the quantities of offered foreign exchange the documents only report the overall level for the full system, and not the data separated by categories. The gap was calculated by deducting the quantities of foreign exchange auctioned from what was offered at each month. Figure 5.7 plots the gap and the overall amount of auctioned foreign exchange.

Figure 6.3 – Auctioned Foreign Exchange and Offered Foreign Exchange, 1953-1961 (US\$ million)

Figure 6.3 was constructed using the same methodology described in Figure 6.2, but plots the series of auctioned and offered foreign exchange in the MER system.

Figure 6.4 – Auctioned Foreign Exchange Per Category, 1953-1957 (US\$ million)

Figure 6.4 was constructed using the same methodology described in the second part of the explanation of Figure 4.1, and collected from the same sources.

Figure 6.5 – Auctioned Foreign Exchange, 1953-1957 (% of Total)

Figure 5.6 was constructed calculating the percentage share of each category from the total of the data presented in Figure 6.4.

Figure 6.6 – Free Market Rate and Weighted Auctions Rate, 1953-1957 (Cr\$/US\$)

Figure 6.6 was constructed using the following methodology. The weighted average auction exchange rate was constructed using the methodology described in Figure 4.1, using the same data sources. The free market exchange rate was also obtained from the same data sources, and for same period. Both series were plotted at Figure 5.11. Table 7.1 – Regression Results, 1953-1961

Table 7.1 was constructed using the following methodology. The regressions methodology is presented in Chapter 7. Data from the MER were obtained using the methodology presented in the first part of Figure 4.1. The sources for industrial production, FDI, and tariffs were FGV's *Revista de Conjuntura Economica*, Caputo (2007), and Morley (1969), and the data were used without alterations

Figure 7.6 – Multiple Exchange Rates and the Shadow Exchange Rate (Cr\$ per US\$)

Figure 7.6 plots the data presented in Figure 5.1, which presents the series of MERs, and Figure 6.6, which presents the free market exchange rate. The SER corresponds exactly to the free market exchange rate.

Table 8.4 – Importers' Costs and Benefits, 1950-1960

Table 8.4 was constructed using the following methodology. Column 2, which shows the level of imports by importers, was obtained from the data of Figure 5.2. The percentage of imports outside the MER system is the percentage of imports directly by the government and industrialists. This percentage was applied to the overall level of imports to calculate the share of imports by

importers, and the variations of imports by importers in the two MER periods. Then, using the average MER for the two periods, calculated using the methodology discussed in Figure 4.1, the exact monetary level in cruzeiros gained or lost by importers was obtained for each MER period. Finally, this value was compared to the overall level of net revenues by the government from the MER system calculated in Table 4.2, and the revenues from tariffs, which were obtained by applying the average *ad valorem* tariffs obtained from Morley (1969) to the overall level of imports. The final column compares the ratio of the importers' gains/losses to the overall level of revenues of the government in the two systems.

Figure 8.3 – Import versus Export Average Exchange Rates, 1953-1960 (Cr\$ per US\$)

Table 8.3 was constructed using the following methodology. The average import exchange rate was constructed using the same methodology described in the second part of the explanation of Figure 4.1, and collected from the same sources. The average export exchange rate was obtained from the same sources described for Figure 4.1 and for the same periods. The average export exchange rate reproduces the data from the Ministry of Finance and Sumoc documents.

Table 8.5 – Exporters' Costs and Benefits, 1953-1960

Table 8.5 was constructed using the following methodology. The average import and export exchange rates, of columns 1 and 2, were obtained using the methodology described for Figure 7.4. Column 4 calculates the ratio between the two series. Column 5 calculates the percentage of implicit appropriation by reversing the ratio between the two series. If the two series were the same, the appropriation would be zero. Finally, the last column applies this

appropriation to the overall level of exports to calculate the nominal value of the appropriation.

Table 8.8 – ‘Outside of Auctions’ Import Subsidy, 1954-1960

Table 7.8 was constructed using the following methodology. Column 3 sums the level of overall imports with the FDI through Instruction 113, obtained from Caputo (2007). Then, by applying the percentage of imports outside the system calculated in Figure 5.2 to this sum, it calculates the share of effective imports via the official exchange rate. This is used to calculate the exact amount of imports via the official and the MER average rate in US\$. Finally, the table also calculates the ratio between the official rate and the average import exchange rate using the data calculated in the first part of the methodology described for Figure 4.1.

Table 8.11 – Government Revenues from the MER System and Tariffs, 1953-1960

Table 8.11 was constructed using the following methodology. Using the data of *agios* and *bonificacoes* from Figure 5.1, and the data of overall government revenues obtained from Sochaczwesky (1980), it calculates the share of net *agios* in government revenues. Then, using the average tariff rate from Morley (1969) and the government revenues, it calculates the share of tariffs to government revenues. Finally, these two series are summed to obtain the overall level of revenues from tariffs and the MER system, obtained by the government, and its share in overall revenues.

Table 8.14 - Industrial Benefits, 1953-1960

Table 7.14 was constructed using the following methodology. Data of real industrial production were obtained from FGV's *Revista de Conjuntura Economica*. Then, using the data of net revenues from tariffs and the MER from Table 8.11, the contribution, in percentage points, of industrial growth in nominal terms to the revenues is estimated.