The London School of Economics and Political Science

Explaining variation in female labour force participation across Eastern Europe: The political economy of industrial upgrading and service transition

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Abstract

This thesis proposes a theoretical model to explain the variation in female labour force participation (FLFP) across post-socialist Eastern Europe. The model is then tested empirically on 13 post-socialist Eastern European countries during the period 1997-2008 using a combination of quantitative and qualitative data analysis.

Embedded in insights from economics and comparative political economy literature, my theoretical model moves beyond linear causal relationships and suggests how different components of post-socialist economic restructuring in Eastern Europe have affected one another and have translated into specific FLFP outcomes. The model specifies the following three components: industrial upgrading, educational expansion and growth of knowledge intensive services and theorises their relationship to each other and to FLFP as the dependent variable. The model suggests that those countries that embarked on the trajectory of economic development driven by re-industrialisation and industrial upgrading created a vicious cycle for FLFP. This took place because industrial upgrading that was driven by foreign direct investment led to the defeminisation of manufacturing. Such a trajectory of economic restructuring also shaped these countries' education policies and impeded the development of knowledge intensive services, which would have been more conducive to female employment.

The virtuous cycle of FLFP, on the other hand, occurred in those Eastern European countries that turned to reforming their educational sector towards general skills and expansion of tertiary education, with the aim of transforming themselves into knowledge economies. Such a transformation required an active social investment state and growth of knowledge-intensive public and private sector employment, which provided greater employment opportunities for women. This development path created a positive causal loop for FLFP.

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PART I: THEORY TESTING

List of Figures, Graphs and Tables

List of Abbreviations

ALMPs – Active labour market policies

ATC – Agreement on Textiles and Clothing

CEE – Central and Eastern Europe

CES – Comparative economic systems

CMEs – Coordinated market economies

CPE – Comparative political economy

DMEs – Dependent market economies

EBRD – European Bank for Reconstruction and Development

EC - European Commission

ECI - Economic Complexity Index

EECA – Eastern Europe and Central Asia

EU – European Union

Europe 2020 – Europe 2020: A strategy for smart, sustainable and inclusive growth

EVS – European Values Survey

FDI – foreign direct investment

FE – Fixed effects

FLFP – Female labour force participation

FYR – Former Yugoslav Republic

GDP – Gross domestic product

GDP pc – Gross domestic product per capita

GGAP – Gender gap in labour force participation

$GGAP_e$ – Gender gap in employment

$GGAP_u$ – Gender gap in unemployment

ICT - Information and communication technology

IGO – Intergovernmental organisation

ILO – International Labour Organization

ISCED - International Standard Classification of Education

KIS – Knowledge-intensive services

KILM – Key indicators of the labour market

LFP – Labour force participation

LFS – Labour Force Survey

LMEs – Liberal market economies

LNA – Large-N analysis

LSDV – Least squares dummy variable

MIT - Massachusetts Institute of Technology

MNCs – Multinational companies

MLFP – Male labour force participation

NACE - Nomenclature statistique des activités économiques dans la Communauté européenne (Statistical Classification of Economic Activities)

OECD – Organisation for Economic Cooperation and Development

OLS – Ordinary least squares

OP - Outward processing

OPT – Outward processing trade

PCSE – Panel corrected standard errors

pp – percentage points

PPP – Purchasing power parity

R&D – Research and development

SEE – South Eastern Europe

SNA – Small-N analysis

T&C – Textiles and clothing

TSCS – Time-series cross-section

UN – United Nations

UNCTAD – United Nations Conference on Trade and Development

UNECE – United Nations Economic Commission for Europe

UNESCO – United Nations Educational, Scientific and Cultural Organization

VoC – Varieties of Capitalism

WDI – World Development Indicators

WTO – World Trade Organisation

Country abbreviations

BG – Bulgaria

CZ – Czech Republic

EE – Estonia

HR – Croatia

HU – Hungary

LT – Lithuania

LV – Latvia

MK – Former Yugoslav Republic Macedonia

PL – Poland

RO – Romania

RS – Serbia

SI – Slovenia

SK – Slovakia

Acknowledgments

This thesis was shaped by my urge to understand how Eastern Europe experienced 'the end of history', as Francis Fukuyama famously referred to the collapse of communism and the supposed triumph of liberal capitalist democracy. I wanted to unpack the reality behind these grand narratives – the reality of the working women in the region, the women who raised me and the women of my time. Most importantly, I wanted to contribute to dispelling the myth that the world had everything to teach Eastern Europe and nothing to learn from it.

I was warned that writing a PhD thesis is a lonely endeavour. Yet, I would not have made it without the colleagues, friends and family who have kept me company and who have made this experience so enriching.

My first gratitude goes to my supervisors Sarah Ashwin and Will Bartlett for striking the right balance between putting academic pressure on me and allowing me intellectual freedom. I have truly admired their great intellects and their exceptional pedagogical skills. It has been such a pleasure to learn so much from both of them.

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I feel privileged for the close friendships that I have developed within the LSE PhD community. Abel, Mireia and Ranj, thank you for always being there for me. I also thank all of my PhD colleagues and friends for making the European Institute such an exceptional environment to spend four years of one's life in.

Mirko, thank you for making me bolder in my intellectual pursuits and ambitions. You will always be an inspiration. Luka, thank you for prioritising my needs during this long and challenging period of life. Boris, my beloved brother, thank you for teaching me that working hard without being stressed is an attainable state of mind. I still have a lot to learn, but his advice has come in really handy during this degree.

Finally, I am forever thankful to my parents who have always believed in me and who have offered me unconditional love and encouragement to pursue a PhD. The fact that they had no expectations and always gave me the option to change my mind was the most precious gift I could have asked for. I dedicate this thesis to them.

PART I: THEORY BUILDING

Chapter 1.   A comparative political economy perspective on female labour force participation in post-socialist Eastern Europe

1.1 Research question

Eastern Europe had the highest female labour force participation (FLFP) rates in the world during communism and the region was characterised by professed equal treatment of women and full gender equality (Lobodzinska, 1995). As FLFP continued to increase in most of the world during the past quarter century, the trend reversed in Eastern Europe with the onset of transition (World Bank, 2011, p. 59).[1]

This post-socialist reversal of FLFP trends hides a number of important distinctions among the countries in the region. For some countries, the reversal was a temporary phenomenon, which occurred due to the negative shock of transition, while for others, low FLFP has become a more permanent feature of their economies. Therefore, despite high levels of female economic participation during socialism, many Eastern European Union (EU) member states and candidate countries have been going in the 'wrong' direction since 1989, and in some cases even converging towards the traditionally low FLFP that has been the feature of the Mediterranean EU member states.

This thesis investigates the variation in FLFP outcomes across 13 Eastern European countries throughout post-socialist transition. These countries are: Estonia, Latvia and Lithuania which geographically form the Baltic region, Czech Republic, Hungary, Poland and Slovakia which form Central and Eastern Europe (CEE) and Bulgaria, Croatia, FYR Macedonia Romania, Serbia, and Slovenia which belong to South Eastern Europe (SEE).[2]

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[1] Data on these trends are shown in Chapter 4.

[2] Due to data availability and comparability constraints, particularly for the more nuanced analyses of specific labour market indicators, I do not extend the analysis to other Eastern European countries.

While the Baltic countries and the former Yugoslav Republic Slovenia saw growing economic re-activation of women during the 2000s,[3] CEE countries were characterised by the persistently low FLFP at similar (or even higher) levels of economic development. Furthermore, while the FLFP trend in Bulgaria recovered during the 2000s, in similar fashion as in the Baltic countries and Slovenia, FLFP continued to fall in Romania. Female labour market outcomes also did not substantially improve in the former Yugoslav republics of Croatia and Macedonia as the transition progressed, while some progress was made in Serbia (see Graph 1-1).

Graph 1-1. FLFP (15-64) in CEE and Baltic (left panel) and SEE (right panel), 1990-2010
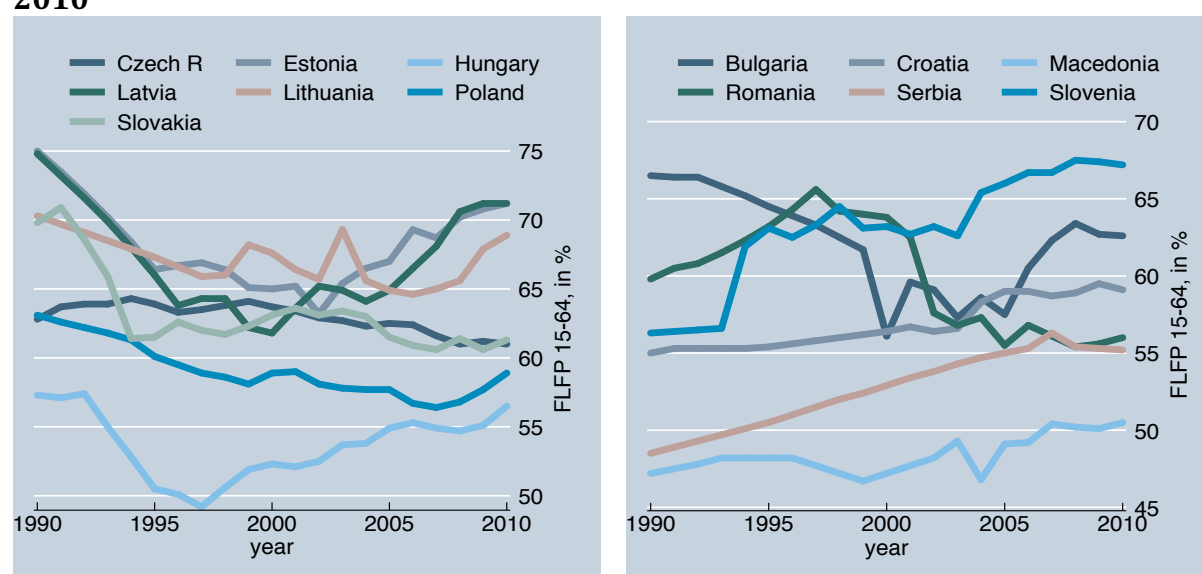
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

The FLFP outcomes across the 13 Eastern European countries at the end of the observed period are shown in Graph 1-2 in order to emphasise the extent of this variation. The graph indicates that high levels of FLFP (15-64) in the Baltic countries are only closely matched by Slovenia. On the other hand, FYR Macedonia, which is also the least developed country in the region, had the lowest FLFP (15-64) rate of 50.5%. Finally, gender gaps in labour force participation are strongly negatively correlated with the observed FLFP rates across the region (the data to support this statement is shown

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[3] The core empirical analysis presented in the thesis focusses on the period of post-socialist transition and stops at the end of the first decade of the 2000s so that it is not confounded with the effects of the Great Recession on the region.

in Chapter 4). This indicates that countries are not lagging behind in FLFP because their overall labour market conditions are weaker, but rather they are dealing with an issue of gender inequality.

Graph 1-2. FLFP (15-64) in all countries, 2010
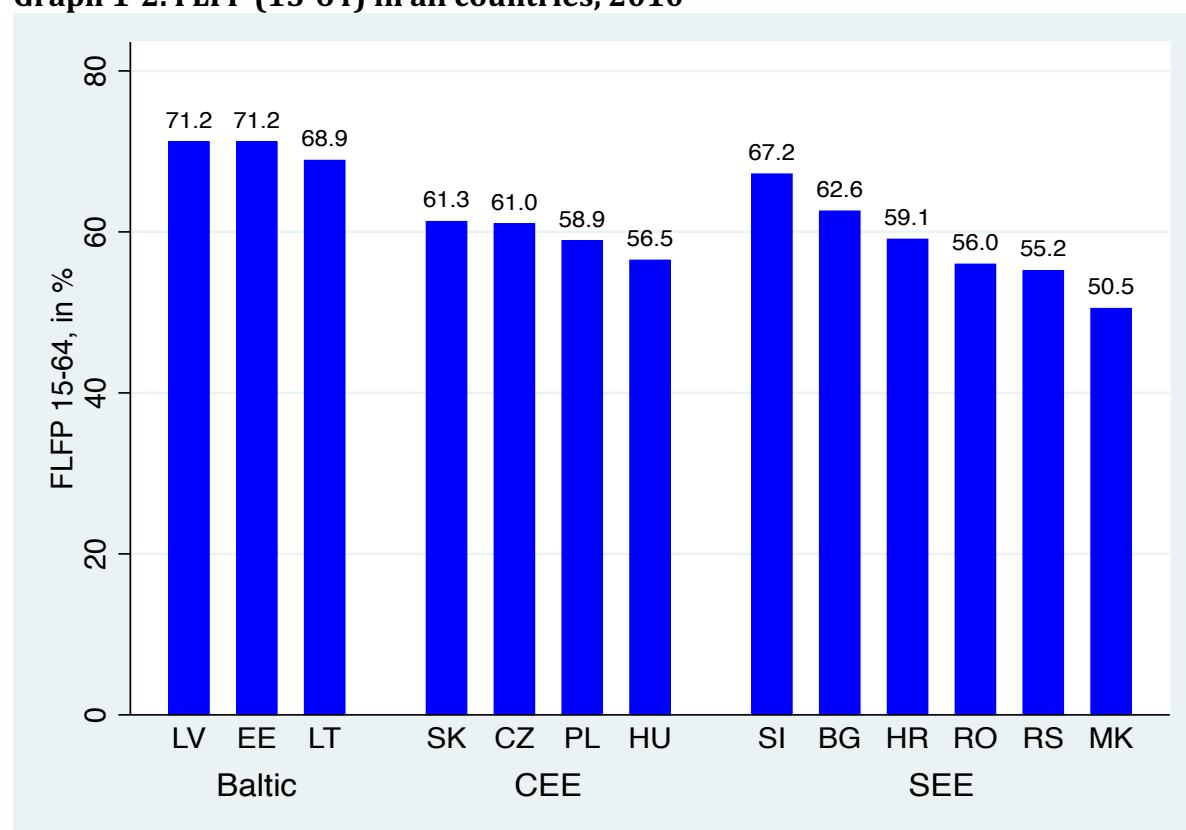
Source: Eurostat.

Literature on Eastern Europe ascribes much of these trends to the 'black box of transition' and has done very little to account for this cross-country variation.

Microeconomic transition literature suggests that market forces have 'naturally' affected women's reservation wages[4] through mechanisms such as the rising cost of childcare and higher husband wages, and the process has resulted in lower FLFP rates (Chase, 1998). This proposition, however, does not explain the observed cross-country variety in FLFP outcomes across the countries in the region, since childcare costs and wages grew across the region.

Macroeconomic literature has also made vague attempts to posit the mechanisms that have negatively affected female economic opportunities in transition countries. Gaddis

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[4] The lowest wage rate below which they would not be willing to work.

& Klasen (2014), referring to FLFP trends in Eastern European countries during the 1990s, argue that transition was "of course, a one-time historical event", which was not related to the secular drivers of FLFP around the world (p.656). Policy oriented literature has also approached the topic vaguely. The 2012 World Development Report on Gender and Development states:

> The collapse of the Iron Curtain meant that Eastern European women lost some of the gains in gender equality made under communism... The rise of capitalism and a new political order in Eastern Europe thus set women back on some aspects of endowments, agency, and economic opportunities. (World Bank, 2011, p.348-9)

Today, more than 25 years since the fall of the Berlin wall, it appears that a lot more than the market mechanism has been at work in the region. Ascribing FLFP patterns in Eastern Europe to the 'black box of transition' implies that these countries' institutions and development trajectories must have affected FLFP trends. "[E]xisting models did not predict and cannot explain the outcomes [of many transition related phenomena], a fact which has prompted economists to search for explanations outside economics" (Pistor, 2013, p.2-3). It has become clear that even market-oriented policies require a state to implement them, and that no state is neutral in its relationship with the market (Hemerijck et al. 2013; Thelen, 2014). This growing awareness in the literature calls for a better understanding of how transitional restructuring has affected socio-economic outcomes, including female economic activity.

Using a political economy lens of analysis, this thesis examines the mechanisms through which, once the lid came off the 'pressure cooker' of communism, a variety of gender regimes got institutionalised in these countries and affected female employment opportunities. Barbara Einhorn's seminal work on the sociology of market transition, *Cinderella Goes to Market,* drew our attention to the complexities of these causal relationships already in 1993, by arguing that gender was at the heart of political, social and economic change in Eastern Europe (Einhorn, 1993). Gal & Kligman (2012) also emphasise centrality of gender in transition in their compelling anthropological analysis of gender in Eastern Europe. Comparative political economy literature on the region, however, has not explored these perspectives yet.

More broadly, there has been a major shift in the scholarly debate on the drivers of FLFP across the world during the past decade. Economic theories have emphasised the effect of structural factors such as economic development, greater female access to education or falling fertility on female labour force outcomes. Such factors, while they lend themselves well to statistical empirical tests, are being increasingly questioned and replaced by deeper examinations of the root causes behind better performance of some countries over others. One reason for this is the continuous development of the more powerful statistical methods and better access to data which casts doubt on some of the economic stylised facts such as Goldin's U-shaped curve of female employment through economic development (Gaddis & Klasen, 2014).

The growing number of negative findings in cross-country econometric studies indicates that context is important and that we need a thicker account of the ways in which it matters. It has led to a growing scholarly interest in the impact of politics and institutional factors on socio-economic outcomes, the understanding of which is often not conducive to statistical analysis (Hall, 2006, p.26). This recent trend has been followed by a renewed interest in the development of social theorising, which had been neglected during the second half of the 20th century as a result of over-emphasis on the use of empirical methods in the social sciences (Swedberg, 2014, p.14-15).

My thesis draws on these recent shifts in social science research in order to answer the following question: Why have some Eastern European countries successfully reintegrated women into their labour markets during transition while others have not?

1.2 The argument

I endeavour to explain the observed variation in FLFP outcomes across the region using a comparative political economy (CPE) framework of analysis. I focus on the variety of economic restructuring trajectories that took place in the region in order to provide a comprehensive theoretical account on the drivers of FLFP in post-socialist transition. Being interested in explaining the mechanism whereby more women are economically active in some post-socialist countries than in others, the thesis takes stock of the most

relevant theories found in the literature, adapts them to the Eastern European context and formulates a novel theoretical account. The validity of this theory is then tested empirically, using both quantitative and qualitative methods of analysis.

My proposed theoretical model moves beyond linear causal relationships and suggests how different components of post-socialist economic restructuring in Eastern Europe have affected one another and have translated into specific FLFP outcomes. The model specifies the following three components: industrial upgrading, educational expansion and growth of knowledge-intensive services (KIS), and theorises their relationship to each other and to FLFP as the dependent variable. The model suggests that those Eastern European countries that embarked on the trajectory of economic development via re-industrialisation and industrial upgrading created a vicious cycle for FLFP. This took place because industrial upgrading that was driven by foreign direct investment (FDI) led to the defeminisation of manufacturing. Such a trajectory of economic restructuring also shaped these countries' education policies and impeded the development of knowledge-intensive services, which would have been more conducive to female employment.

The virtuous cycle of FLFP, on the other hand, occurred in those Eastern European countries that turned to reforming their educational sector towards general skills and expansion of tertiary education, with the aim of transforming themselves into knowledge economies. Such a transformation required an active social investment state and growth of knowledge-intensive public and private sector employment, which provided greater employment opportunities for women. This development path created a positive causal loop for FLFP.

The thesis argument is novel because academic literature has only recently begun to recognise that political and institutional factors have a significant impact on female economic opportunities. Theoretical accounts on how these structural factors interact and create gendered outcomes do not appear to have been undertaken to date. For the reasons I discuss in section 1.3, capitalist political economies in the making in post-socialist Eastern Europe offer an excellent opportunity to observe these interactions and to improve our understanding of how structural change can affect labour market opportunities in a gendered fashion.

Since the existing economics literature is unable to explain the drivers of female labour force outcomes even in consolidated market economies, there is a question mark regarding the usefulness of the same theoretical frameworks for explaining the outcomes observed in Eastern Europe during post-socialist transition. So far the literature has reduced all the unknowns to the 'black box of transition'. Existing research has been heavily prescriptive and policy driven, and conducted either at the level of individual countries or sub-regions, with little attempt to understand the different drivers of women's position in these countries' labour markets. As Epstein (2014) points out, the neoliberal paradigm has been dominant across Eastern Europe, and it has prescribed micro-level policy interventions in individual countries that resemble those found in the West. The expectation has been that such interventions would eventually take these countries to the western levels of affluence and prosperity in all respects, including gender equality. However, an increasing amount of empirical evidence is beginning to question such optimism, and calls for the development of authentically Eastern European paradigms are beginning to emerge. This research endeavours to fill that gap.

1.3 Scholarly relevance of the thesis

This thesis explains how different countries' experience of transition affected female labour market opportunities in Eastern Europe. This is an important endeavour because transition, as the "great economic experiment of the 20th century" (Stiglitz, 1999, p.3) represents a valuable research opportunity to study how economic and political reform affects female economic activity and why women are not automatic beneficiaries of economic development. In other words, the transition experience allows us to watch the evolution of capitalist political economies in fast-forward mode and tease out the mechanisms leading to socio-economic outcomes that can be more or less favourable for women. Furthermore, advanced economies that are themselves currently facing structural change have much to learn from developing country experience with structural change, both from their success and pitfalls.

Furthermore, post-socialist economies have 'gone wild' instead of following a theoretical trajectory of transition from socialism to capitalism that was expected by many reformers (Meurs & Ranasinghe, 2003 in Smith & Stenning, 2006, p.205). Consequently, a more authentic understanding of economic processes throughout this transformation is needed, including the role of women in economic life.

Finally, Blagojevic & Yair (2010) argue that "countries in the center are implicitly framed as 'model countries' with 'model knowledge' systems, while countries in the semiperiphery unintentionally become 'deviant cases' or 'comparative cases'." (p.348). The authors argue that this trend works to the detriment of social science more generally which stands to benefit from the exchange of different experiences and authentic emerging country paradigms. This thesis aims to explore this perspective by abstracting the processes observed in Eastern Europe into a theoretical model whose relevance in other contexts could be explored in future studies.

When it comes to gender, recent political economy and sociological work has begun to account for the rise of the service economy and to examine how institutions and gender interact and shape political economies (Walby, 2011; Nelson & Stephens, 2013; Thelen, 2014). Yet, substantial gaps still exist in our understanding of the gender implications of important reform processes. For example, while there is a large body of literature analysing the distributive impact of trade reform across skills and income, "very little is known about the gender effects of trade reforms" (Gaddis & Pieters, 2012, p.26). My research also speaks to the feminist economics literature on Comparative economic systems (CES), which is interested in how "gender relations change and evolve in relation to economic transformations such as industrialization, transitions from socialism to capitalism … [and] globalization" (Hopkins & Duggan, 2011, p.44).

Female participation in the labour market is, of course, only one component of economic gender equality and issues such as occupational segregation, gender pay gaps and other forms of discrimination have historically represented fundamental obstacles for female economic empowerment too, both in communist and capitalist systems. This thesis does not aspire to account for the full experience of female labour market inequality in post-socialist Eastern Europe. Instead, it acknowledges that FLFP represents only one aspect of economic equality among the genders. A lot more

comprehensive understanding of issues such as gender pay gaps, occupational segregation and other phenomena is needed in order to paint a full picture of constraints that women face in Eastern European labour markets.

Nevertheless, since FLFP is one of the most commonly referred to phenomena when it comes to female economic rights, its enhanced understanding represents an important contribution to the wider efforts to study gender equality in Eastern Europe.

Understanding the determinants of FLFP is important from an instrumental perspective because greater female access to productive resources has been shown to positively affect human capital of future generations, as women tend to invest more in children (Korinek, 2005, p.4). The FLFP also has enormous implications for future sustainability of pension systems and draws attention to the question of intergenerational solidarity. Furthermore, in cases where female economic activity is low due to structural constraints, unused female potential could lead to a sub-optimal allocation of economy-wide resources and inhibit economic growth (Korinek, 2005, p.4).

For these reasons, FLFP is an important EU policy goal. The *Lisbon Strategy*, the first EU-wide growth strategy, was launched in 2000 to boost growth and employment across the EU during the first decade of the 2000s. It is interesting to note that those Eastern European countries that were successful in reintegrating women into their labour markets reached their lowest levels of FLFP around year 2000, approximately 10 years into their transition to the market economy. It was during the 2000s therefore, the decade of the *Lisbon Strategy*, that women saw significant employment gains in some Eastern European countries, but not in others. In those countries that were still struggling with FLFP levels by 2010, female employment opportunities were either stagnant or falling throughout the 2000s. Furthermore, since the *Lisbon Strategy* was not successful at the level of the entire EU, a successor strategy was created for the following decade – *Europe 2020: A strategy for smart, sustainable and inclusive growth (Europe 2020)*. Greater female activation in countries lagging behind the EU average is one of the primary strategic goals of *Europe 2020* and includes some of the Eastern European countries covered by this thesis.

Finally, the thesis is also motivated by the human rights perspective on FLFP, because allowing women more access to the public sphere and greater economic opportunity is

an intrinsic value which is important for social progress. However, I do not assume that the position of women is automatically better in those countries where more of them work, nor that higher FLFP, regardless of its context and wage levels, is always good for women's emancipation and empowerment. Additional studies are needed to assess the quality of available work and its impact on female economic empowerment.

1.4 Methodology

This thesis adheres to the theory-oriented mode of explanation. Hall identifies this mode as one of three commonly encountered variants of explanation within the positivist tradition in the social sciences. The other two are historically specific and multivariate explanations (Hall, 2006, p.24-25). The theory-oriented explanation focusses on illuminating the precise theoretical mechanism through which relevant variables cause certain outcomes that can then be empirically tested. As such it can be contrasted to the historically specific, which aims to provide a complete explanation of why a phenomenon occurred in a certain context, and the multivariate, which focusses on identifying a small set of variables that have a measurable impact on a broad class of events (Hall, 2006, p.25).

Hall (2006) recommends the theory-oriented explanation where multiple causal factors that may matter for an observed outcome can be contended (p.25).[5] As we will see from the state of the literature surveyed in Chapter 2, it is important to resolve this conundrum when it comes to improving our understanding of the drivers of FLFP in Eastern Europe, as well as the relationships between the different drivers of this phenomenon. Furthermore, my assumptions about the non-linear structure of causal relationships between the independent variables and their interaction with the dependent variable also point to the theory-oriented explanation as the most appropriate methodological approach for this thesis (Hall, 2006, p.25).

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[5] This motivation can be contrasted to the motivation behind multivariate explanations, which seek to estimate "the precise magnitude of the impact of well-known causal factors" (Hall, 2006, p.25).

A theory-oriented approach to analysis counters a common tendency in much of today's social science research to conduct an empirical analysis following which the results are squeezed into a pre-existing theory or labelled in an ad-hoc manner. By applying the theory-oriented mode of explanation, the researcher is allowed substantial space and time for critical reflection on a plethora of existing theories that could serve to explain the phenomenon of interest, following which these theories' relative merits are carefully evaluated against the empirical findings, which could be quantitative, qualitative or a mixture of both.

As Swedberg (2014) points out, with the advancement of statistical methods and their emphasis on prediction, there has been a substantial falling behind of theoretical developments. Many studies have been reduced to 'thin theory' where the impact of specific variables on certain outcomes are analysed but the causal mechanisms between them, or the theoretical abstractions that can be generalised from these findings, have been left out as a marginal concern. In light of these trends, explanations that focus on assessing the relative empirical merit of some theories over others, such as the one put forward in this thesis, have become welcome and much-needed contributions to social science research.

Following these insights, this thesis focusses on an issue that is typically addressed econometrically – what drives FLFP – and complements it with a thicker and a more informative political economy-oriented theoretical account on the causal mechanisms behind the phenomenon of interest (Owen, 1994, as discussed in Hall, 2006; and Rodrik, 2003).

While theory-driven explanations of social phenomena should compare the explanatory power of different theories, Hall (2006) points out that journal articles often fall short due to word limits. Following Lakatos (1970), each theoretical contribution should ideally reflect a 'three-cornered fight' between the new theory, its rival theories and empirical observations (Hall, 2006, p.27). This allows the researcher to check for the theory's internal consistency apart from its external validity, which is an important additional criterion for proving the validity of a theory. As Peter A. Hall explains:

> Although some have argued that that the realism of a model's assumptions is irrelevant to its validity, on the grounds that the latter should be judged only by

the accuracy of its predictions (cf. Friedman, 1968), it strikes me as perilous for analysts of causal mechanisms to ignore the realism or plausibility of their assumptions. (Hall, 2006, p.29)

If the theory is shown as logically consistent vis-à-vis other theories, it can be considered valid even if the empirical analysis fails to confirm the hypotheses that stem from the theory. The rejection of an internally consistent theory through empirical analysis could then also be attributed to inadequate operationalisation of theoretical concepts and/or to poor data quality. As the best-case scenario, the confirmation of both internal and external validity of a theory proves the robustness of the theoretical contribution in question. This thesis, by testing both the theory's consistency against other theories and its empirical validity, is inspired by this logic of scientific enquiry. At the same time, complete implementation of the 'three-cornered fight' logic of enquiry is an agenda that is too ambitious for one thesis. Therefore, both the testing of my theory against other theories and the testing of its empirical validity suffer from limitations that I exposit in the empirical chapters.

Finally, instead of suggesting an all-encompassing theory on the drivers of FLFP, my research project is informed by an observation by Rodrik (2015b), who argues that every model captures a salient aspect of the social experience. He maintains that our aim should not be to replace one model with another, superior one, but for them to expand horizontally so that we can explain a growing part of social reality.

In the first part of this thesis, which focusses on theory building, I survey some of the well-established, existing economic theories on the determinants of FLFP as well as the more recent institutional and welfare state oriented accounts. These have almost exclusively focussed on the western market economies. I then combine these existing theories with general insights based on the axiomatic logic of CPE and my previous knowledge of Eastern Europe in order to develop a theoretical model that offers a conceptual explanation of drivers of FLFP in Eastern Europe. Bringing the different components of this vast literature together, and re-interpreting them in the context of Eastern Europe, is the main theoretical contribution of this thesis.

In the second part of the thesis, which focusses on theory testing, I rely on a mixed-method strategy for comparative research that Lieberman (2005) identified as 'nested

analysis'. Lieberman's nested analysis begins with a preliminary large-N analysis (LNA), which determines the empirical robustness of a proposed theory using quantitative methods such as econometric or descriptive statistical analysis. If the LNA finds empirical support for certain theoretical propositions, the researcher moves onto a model-testing small-N Analysis (SNA) in order to complement and/or strengthen the conclusions from the LNA (Lieberman, 2005, p.437).

While Hall's instructions focus on case studies as the basis for empirical testing, he also suggests that we should seek "as large and diverse a set of observations as feasible from each case" in order to strengthen a theory's validity (Hall, 2006, p.28). This approach to analysis is also recommended by King, Keohane, & Verba (1994). In fact, mixed methods have become popularised even among some economists during the 2000s, as they started supplementing their econometric analyses with case studies. They sought to obtain a better understanding of the causal mechanisms at work, thus admitting the limited ability of quantitative approaches to explain complex social phenomena (most notably Rodrik, 2003).

While it is undoubtedly informative to econometrically estimate the size of impact of one variable on another, Shalev (2007) points out that CPE is far more concerned with theoretical mechanisms and the direction of causality, rather than the quantification of marginal effects of one variable on another. This is the case because some of the variables of interest in macro-comparative research are ambiguous and difficult to measure precisely (p.266). For example, there are many challenges involved in the operationalisation of variables such as the knowledge economy or the general skills regime, which are part of the theoretical argument put forward in this thesis. I underline the importance of the conceptual contribution of this thesis, besides the empirical one, because equating concepts with their operationalisation is not very helpful for theorising (Swedberg, 2014, p.76).

The empirical part of the thesis starts with a LNA of testable hypotheses that stem from the existing economic theories because I am testing the empirical robustness of a number of alternative theories that could explain the phenomenon of interest. I conduct this LNA on a time-series cross-sectional (TSCS) analysis of a sample of 13 Eastern European countries during the period 1990-2010. I exclusively rely on this method to

sieve through the empirical validity of existing economic explanations because these hypotheses are based on thin theory and can therefore be tested in a straightforward manner using multivariate and descriptive statistical analysis. In accordance with my theory-oriented mode of explanation, my aim is not to eliminate every possible economic explanation. Rather it is to use some of the empirical insights that may carry some weight and reinterpret them in the context of my own theoretical model which accommodates more complex notions of causality.

Following this LNA that tests the empirical congruence of alternative theoretical accounts, I conduct an LNA that assesses the empirical robustness of my own theoretical model. While explaining diverse empirical outcomes across only 13 Eastern European countries during the period 1997-2008 for which sectoral data is available, makes it difficult to draw strong conclusions from econometric analyses alone, exploring a limited range of cases is particularly relevant for the CPE scholarly community, because its members are interested in being able to compare country cases rather than analyse average cross-country effects (Shalev, 2007, p.264). In fact, Shalev (2007) argues that by keeping the cases visible the researcher is directly catering to the needs of CPE researchers.

Since LNA has limited capacity to test its full empirical manifestation because of the complex causality chains in my model, I focus on econometrically analysing the relationships between the variables that form the theoretical basis of my model and supplementing these findings with descriptive statistical analysis. Shalev (2007) argues that a descriptive analysis of data in tabular and graphical format represents a viable alternative to multiple regression analysis (p.261).

Following satisfactory results from the econometric and descriptive statistical analyses, I proceed with the SNA that focusses on a smaller number of cases. The qualitative analysis allows me to trace the causal mechanisms behind the relationships that have been shown as robust in the econometric analysis. Given the nature of my variables of interest, apart from primary and secondary literature, I also use quantitative indicators to improve our understanding of my country cases, as endorsed by Collier (2011).

Figure 1-1 summarises my methodological approach and relates each step to a specific chapter. A more detailed exposition of the precise methodological steps undertaken to test the theoretical model is given in Chapter 3.

Figure 1-1. Theory-oriented research design

Theory building		
Survey of economics literature (Ch.2)	Survey of CPE literature (Ch.2)	My theoretical model (Ch.3)

Theory testing		
LNA of alternative explanations (Ch.4&5)	LNA of my theoretical model (Ch.6)	SNA of my theoretical model (Ch.7)
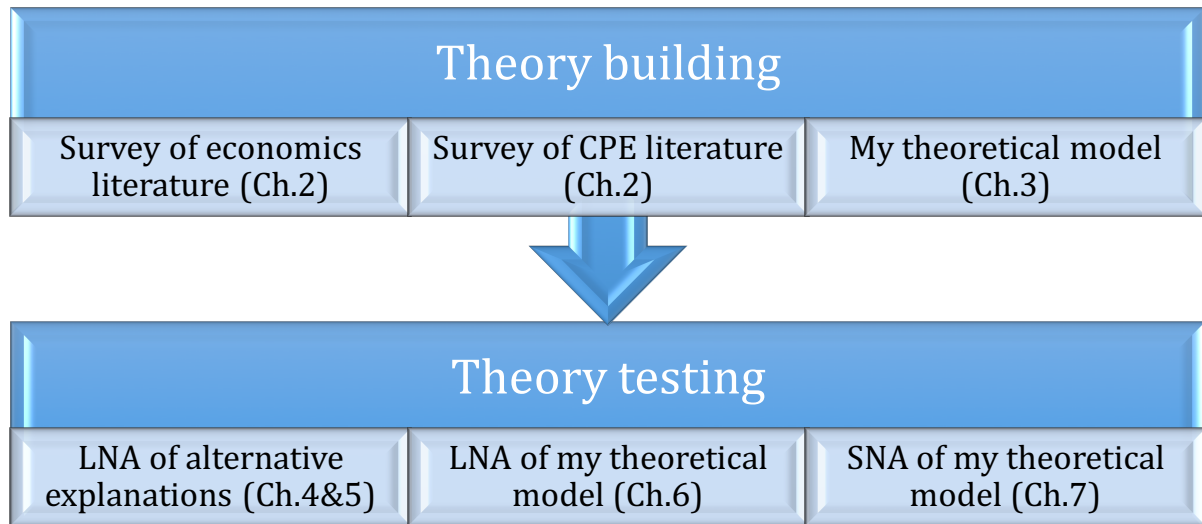
1.5 Structure of the thesis

This thesis consists of eight chapters. Following this introductory chapter, Chapter 2 analyses state of the art literature that has attempted to account for the drivers of FLFP. I first survey 'mainstream' economic literature on socio-economic determinants of labour market outcomes across the world. Next, I discuss the CPE approaches to understanding gender equality in the labour market, which have developed due to the lack of explanatory power of much of the economic literature. I then survey the economic and CPE literature on Eastern Europe, indicating that neither have analysed the cross-country variation in female economic activity during transition.

In Chapter 3, I present a theoretical model I developed in order to explain the patterns in FLFP across Eastern Europe. I also present the testable hypotheses that stem from alternative explanations, including from my own model, and discuss the details of Lieberman's 'nested analysis mixed methods' approach that I apply in order to test my model empirically.

Chapter 4 offers a detailed overview of the dependent variable – FLFP, including its employment and unemployment components, as well as the different age groups it encompasses. I also present the limited data that is available for the period of socialism and rule out path dependence as an explanatory factor. While it is numerically dense, this chapter is essential because there are different ways of operationalizing FLFP and I need to ensure that the choice of measure that I use in the subsequent chapters is not dictating the results of my empirical analyses.

In Chapter 5, I empirically analyse explanations that stem from the alternative theoretical frameworks. My findings show that individual socio-economic factors typically discussed in the literature, such as economic development and fertility rates, have not played a decisive influence over female labour market participation outcomes in Eastern Europe. Therefore, this part of my empirical analysis serves to support my conclusion from the literature review, which is that existing literature has failed to provide a comprehensive answer to why some transitional countries have experienced difficulty with re-activation of women into the labour force while others have not. At the same time, I recognise some merit for the arguments that focus on family policy and educational attainment and I use these insights and re-interpret them in light of the empirical findings that support my own model.

I test my theoretical model in Chapters 6 and 7. In Chapter 6, I conduct econometric and descriptive analyses of four pairs of relationships that constitute the model, that between: i) FLFP and industrial upgrading; ii) industrial upgrading and educational expansion; iii) educational expansion and KIS, and iv) KIS and FLFP. The results of this LNA confirm the directions of the relationships that are proposed in the model.

Chapter 7 presents the findings from the SNA, which complement and strengthen the conclusions that stem from the previous chapter by tracing the causal mechanisms through which industrial upgrading led to the defeminisation of manufacturing in CEE and educational expansion led to FLFP increases in the Baltic. Insights from these case studies also support the intuition behind my theoretical model.

In the final chapter, I present the main contributions of my thesis and summarise the key findings. I then examine the policy implications of my findings and discuss the future research agenda that stems from my thesis.

Chapter 2. Existing theories on the drivers of female labour force participation

This chapter takes stock of the empirical literature and theoretical work that have informed the scholarly debate on the determinants of FLFP across the world. As McCall & Orloff (2005) remind their readers: "explaining cross-national variation in gender inequality is a notoriously vexed endeavor" (p.160). A number of analytical frameworks have developed over time to solve the puzzle of variation in female economic performance. Below, I present the most prominent ones and juxtapose them to one another.

The chapter is structured in the following manner. The first section discusses socio-economic determinants of FLFP that have featured prominently in the economic literature. The second section reviews the more recent literature on institutional determinants of FLFP in advanced capitalist countries, with specific focus on the political economy accounts. The third section discusses the ways in which economic literature has approached the topic of FLFP in Eastern Europe, while the final section surveys the CPE literature on production, welfare and educational regimes in Eastern Europe. The absence of gender as an analytical category in the CPE literature on Eastern Europe is also discussed.

2.1 Socio-economic determinants of female labour force participation

Reductions in female fertility and expansion of educational attainment among women have been acknowledged as the most significant supply side socio-economic factors that have led to the expansion of female employment across the world over the past decades, both in macro and microeconomic research (see Goldin 2006 for overview). Due to substantial advancement of female rights during the 20th century, the causality of these relationships has not always been entirely clear. Have the advances in educational

attainment stemmed from the increase in female economic opportunities or vice versa? Have changing attitudes towards women affected both their educational and employment opportunities? The more recent economic literature has attempted to account for informal institutions such as culture and family values, predicting their convergence towards more female-friendly equilibria along with economic development. Humphries & Sarasúa (2012) identify that these supply-side factors, which have appeared time invariant and universal, have dominated economic analyses of female work (p.54). This tendency is consistent with the aim of neoclassical economics to produce generalisable theories that can be applied in any context.

The reality is, of course, more complex and recent work has begun to cast a shadow over this conventional wisdom. As Humphries & Sarasúa (2012) point out: "[T]o complicate things, in the long run demand and supply interact with employment opportunities, influencing decisions to marry, have children, and obtain education, even becoming culturally embedded" (p.54-55). Furthermore, Humphries & Sarasúa (2012) show that women have historically responded to labour market opportunities and that demand for labour has, in fact, been a decisive determinant of FLFP (p.44).

While microeconomics has focussed on the role of gender wage gaps, labour market discrimination, opportunity cost of not working and the availability of part-time work, on female labour market performance, macroeconomic work has also grown in popularity over the past few decades. This is because increasing economic development, especially at the backdrop of globalisation, has seen women's greater economic activation across the world. As Gaddis & Klasen (2014) point out, there is a sizeable literature that analyses the relationship between economic development and FLFP. Because it is a two-way relationship, one stream of literature focusses on the impact of growing FLFP on macroeconomic outcomes, such as economic growth and development (Cavalcanti & Tavares, 2008; Klasen & Lamanna, 2009), while the other stream, which is of greater relevance to this thesis, looks at the impact of economic growth and development on FLFP (Boserup, 1970; Psacharopoulos & Tzannatos, 1989; Goldin, 1990 and 1995; Clark, York & Anker, 2003; Tam, 2011).

The building block of this literature, first empirically observed by Fourastié (1949), is the change in the distribution of the workforce among the primary, secondary and

tertiary sectors of the economy, as countries develop. Furthermore, structural change is a prominent feature of economic development. "Most studies investigating the sectoral structure and structural changes conclude that the service sector by far dominates the economies of industrialised countries" (Tamm and Kaldaru, 2008, p.358).

In light of these structural workforce shifts, Goldin (1995), most notably, argues that female labour market participation, through economic development in capitalist countries, has followed a U-shaped curve. Women work in agriculture at low stages of economic development, then withdraw into the household during the period of industrialisation, as incomes grow but female employment in manufacturing is stigmatised. Urbanisation also makes it harder to balance family and work responsibilities. Finally, as societies develop and de-industrialise, and employment opportunities in the service sector increase, women gain greater access to education and consequently return to the labour market. "This hypothesis dates back as far as the 1960s, and has become a 'stylized fact' in the development economic literature, often called the feminization U hypothesis" (Gaddis & Klasen, 2011, p.1).

Gaddis & Klasen (2014) are the first to formally test and find evidence in favour of tertiarisation though it has been the presumed mechanism through which economic development increases FLFP at the later stages of economic development. They show that tertiarisation is the necessary condition through which economic development has a positive impact on FLFP.

As part of this tertiarisation trend, growth of the public sector has been an important mechanism for integration of women into the labour force in the Western industrialised economies (Gornick & Jacobs, 1998, p.688). Furthermore, public sector employment accounts for about 20% of total employment in most OECD countries with this share well above 30% in Scandinavia (Anghel, Rica & Dolado, 2012, p.2). Anghel, Rica & Dolado (2012) find a specifically strong positive correlation between FLFP and female employment in the public sector, which shows that those countries with higher female economic activation also have a higher incidence of women working in the public sector (Anghel, Rica & Dolado, 2012, p.7).

Significance of public sector employment for female activation into the labour force has also been observed in Latin America. Psacharopoulos & Tzannatos (1992) find that even

when the economic conditions worsened in Latin America during the 1980s, FLFP continued to expand. They explain this by the disproportionate benefits accrued to women from the expansion of the public sector.

More recently, an S-shaped gender equality curve has also been traced through economic development by Eastin & Prakash (2013). They argue that the relationship between gender equality and economic development has three distinct stages and that it is determined by political, social and economic opportunities at each of these stages. In the first phase of development, gender equality is growing, following which it starts decreasing or plateauing because a lot of the development policies reinforce patriarchal institutions. It then starts increasing again because of implementation of gender equality policies. Eastin & Prakash (2013) empirically test their proposition by analysing 146 developing countries for the period 1980-2005 and show the existence of the S-shaped curve for labour force participation among other gender equality indicators. Their argument emphasises the ways in which institutions and policies shape these seemingly secular economic trends.

What seems less obvious in this literature is how tertiarisation can be reconciled with the fact that globalisation, through trade liberalisation, has led to the proliferation of female intensive manufacturing in the developing world, particularly in the textiles and clothing (T&C) industries. According to the 'nimble fingers' hypothesis (Elson & Pearson, 1981), this has taken place because women have been preferred by manufacturing employers for their perceived dexterity. A vast amount of empirical work on the developing world has confirmed this hypothesis and a positive relationship between export-oriented manufacturing and female employment has become well established (Horton, 2002; Gaddis & Pieters, 2012). On the other hand, the same literature has recognised the precarious position of female employment in manufacturing, because of work insecurity and low pay as well as poor working conditions in often subcontracted firms of major production chains. This has stood in contrast to the better-paid and more skilled male jobs in industry (Barrientos, Gereffi & Rossi, 2011).

Building on these insights on the precariousness of female jobs in industry, the more recent literature has accumulated growing evidence that gains in manufacturing

complexity lead to defeminisation of manufacturing labour as the more skilled and better paid manufacturing jobs are 'reserved' for men (Ghosh, 2001; Barrientos, Gereffi & Rossi, 2011; Tejani & Milberg, 2010). Industrial upgrading, defined as "the process by which economic actors (nations, workers, producers) move up the Global Value Chain by generating outputs that have more value-added invested in them because they are higher quality, are produced more efficiently, or require more complex skills" (Calvo, 2014, p.1-2), has become a catalyst for development across the middle income countries, including some of the post-socialist Eastern European countries. Therefore, it is crucial to understand these shifts within manufacturing, as the sector that is driving economic growth and employment opportunities across a large portion of the world, and how this process relates to tertiarisation and employment opportunities in the service economy.

In fact, the U-shaped hypothesis has been questioned with extensions to datasets and more advanced estimation techniques, and the increasing body of evidence points that there is nothing automatic about this process (Humphries & Sarasúa, 2012; Gaddis & Klasen, 2014). Gaddis & Klasen (2014) conclude that there are no iron laws that guide FLFP and the trends and the factors that shape them are context specific.

The above-surveyed economic literature analyses the impact of specific economic variables on FLFP as our phenomenon of interest, rather than on institutions and structures that may affect its dynamics. In other words, while each of the above-identified socio-economic variables might matter for FLFP outcomes, a more encompassing account of which social, political and economic forces interact and how they affect these outcomes in different contexts is required. The next section, therefore, surveys political economy perspectives on the drivers of FLFP around the world.

2.2 Comparative political economy perspectives on the determinants of female labour force participation

Feminist and social policy literature has come to the conclusion that competitive demands of the new economy and the different ways countries respond to them provide important insights for explaining cross-country differences in female labour market outcomes (McCall & Orloff, 2005, p.160). This has generated a growing interest in understanding the ways in which institutional complementarities in capitalist economies facilitate female entry into the labour force or, alternatively, produce systematic gender biases.

In the context of these insights, the CPE literature, which focusses on the interplay between politics and economics and analyses cross-country differences in economic policy and performance, has begun to enhance our understanding of the institutional determinants of FLFP. This is an important contribution to the study of FLFP because the CPE literature throws light on the role of the state in navigating the concurrent processes of de-industrialisation and tertiarisation. In Section 2.1, I identify both of those structural shifts as important determinants of FLFP outcomes. The CPE literature adds to these macroeconomic insights by improving our understanding of how the interaction between the state and secular economic restructuring trajectories affects female labour market opportunities.

A key contribution that is relevant for this thesis has been made by Margarita Estevez-Abe (2005). She establishes a conceptual relationship between capitalist variety and gender inequality in the labour market. She argues that different patterns of economic coordination and the institutional complementarities associated with them affect men and women differently. The source of these differences in gender outcomes is primarily a country's skill regime. While the macroeconomic literature surveyed in Section 2.1 identifies education as an important driver of FLFP, this CPE argument allows us to understand what type of education matters and for whom.

Let us now examine this skill-regimes oriented argument in greater detail. Estevez-Abe (2005) essentially 'genders' the *Varieties of capitalism* (VoC), which is one of the key

theoretical frameworks in CPE. Hall & Soskice (2001) distinguish between two institutionally distinct types of capitalist economies: liberal market economies (LMEs) (e.g. United States, United Kingdom, Canada, New Zealand, Australia) and coordinated market economies (CMEs) (e.g. Germany, Japan, Sweden, Austria). Comparative advantage in LMEs and CMEs is based on the different logics of institutional complementarity between national production systems, educational and skill formation systems and welfare states. While LMEs rely on market competition as a key source of comparative advantage, CMEs rely on non-market relations including coordination with actors such as trade unions.

According to the VoC framework, CMEs gain their comparative advantage in international product markets through strong vocational training institutions, which produce workers with specific skills that are not easily transferable across firms or industries. The CMEs, therefore, often specialise in niche products and manufacturing. Educational systems of LMEs, on the other hand, produce workers who possess general skills that are transferable across firms, and even across sectors. As a result, the LMEs are internationally competitive in high-end services, information and communication technology (ICT) and other sectors that rely on radical innovation and changing market conditions (Hall & Soskice, 2001). This literature has shifted the scholarly focus away from the economic human capital theory, according to which more education automatically translates into more productivity and competitiveness, and instead concentrated it on the types of skills that the educational system of a country produces and their compatibility with other institutions.

Returning to the argument made by Estevez-Abe (2005), gender bias occurs because turnover is costlier for employers who invest in firm-specific training, so interruptions from work are not as desirable in a specific skills regime as in a general skills regime. Since women's interruptions from work are more predictable than men's, due to childbearing and family reasons, employers rationally discriminate against women in hiring, training, and promotion. In response to this discrimination, women do not have the incentive to invest in specific skills so they specialise in household and family work.

This diversity in skill regimes and the way they affect the two genders differently also translates into the type of welfare state a country has. McCall & Orloff (2005) reiterate

how Estevez-Abe's mechanism affects social policy:

> [T]he role of social policy in facilitating women's employment in a skills-specific regime is to provide child care— rather than generous parental leaves, which are disproportionately taken up by mothers—so that the employment of mothers is as continuous as that of fathers, or to offer less discriminatory employment in the public sector. By implication, public sector and social policy supports for women's employment in general skills regimes is less imperative. (McCall & Orloff, 2005, p.163)

The above argument by Estevez-Abe (2005) is static, in the spirit of the VoC framework, because it takes a snapshot of countries and their educational and production regimes at one point in time and compares them. Nevertheless, even the more recent dynamic CPE analyses, which focus on the processes of de-industrialisation and tertiarisation that are currently taking place in advanced capitalist countries, underline that skills regimes, and especially general skills regimes, shape the development of the service economy.

As Thelen (2012) points out, "the service sector thrives more on general skills— whether at the high end (e.g., software engineering, which involves broad technical training) or at the low end (e.g., retail and hospitality industries, where there is a premium on social and communication skills)" (p.152). Therefore, she argues, employment stability is important for the development of high-end manufacturing, while in high-end services workers are motivated to invest in their (general) skills because of labour mobility across the firms and sectors. Such mobility allows them to maximise returns on their skills during their lifetime (Thelen, 2012, p.153). Even at lower skill levels, "a high-quality public school system that provides foundational general skills is arguably better equipped than traditional firm-sponsored apprenticeship training to generate the kind of social and communication skills that lower-level service-sector jobs demand" (Thelen, 2012, p.152).

Following the above insights which establish that general skills regimes and the development of the service economy are mutually reinforcing and that they both stimulate FLFP, the next question that the CPE literature tackles is the dynamics of tertiarisation itself and the different state policies that are associated with it. In other

words, this stream of literature unpacks the rise of the service economy and the state policies that support it. Analysing variation in country approaches to supporting tertiarisation allows us to 'deepen' the conclusion by Gaddis & Klasen (2014) (presented in Section 2.1) that tertiarisation drives FLFP, but that context also matters.

In order to understand the process of tertiarisation in advanced market economies, we need to start by surveying the literature on the dynamics of inequality between the different participants in the labour market. This literature is relevant because tertiarisation does not occur in isolation from state policy or other structural changes a country experiences, such as de-industrialisation, which has been more prevalent in some countries than in others. As we have learned from the CPE literature, presence of a strong industrial sector shapes both the skill regime and the welfare regime a country has. This in turn influences the type of policy responses that navigate the development of the service economy, but also the types of gender biases they produce. Insights on the dynamics of tertiarisation therefore have important implications for the key argument of this thesis – that models of capitalist development (rather than tertiarisation as an isolated factor) affect women's and men's labour market opportunities differently.

According to the VoC literature, specific skill regimes, found in the CMEs, tend to reduce disparities among workers based on education and training, but they are inclined to exacerbate disparities based on the gendered division of labour, in the sphere of both paid work (Estevez-Abe, 2005) and household work (Iversen, Rosenbluth & Soskice, 2005). General skill countries, on the other hand, which are a feature of LMEs, foster greater class disparities and weaker gender disparities (McCall & Orloff, 2005, p.162).

This proposition feeds into the wider notion that societies can be compared on a variety of different dimensions of equality, including gender equality. As Estevez-Abe & Morgan (2008) point out, a state with relatively high levels of income equality may have low levels of gender equality. This can be the case because "some welfare states treat women primarily in their roles as dependent housewives or mothers, while treating only men as autonomous citizens. Other welfare states, in contrast, treat men and women as equal citizens" (Estevez-Abe & Morgan, 2008, p.5). When women are treated by the welfare state as dependent, they receive benefits through their husbands, rather than directly. This is of serious concern to feminist scholars, because these countries

treat half of their adult population (i.e. women) as dependent by default. Within the VoC framework, these observations can be translated into maxims that CMEs are conducive to income equality while LMEs are more inclined towards gender equality. This can be illustrated by the example that Estevez-Abe & Morgan (2008) provide:

> Germany and Japan are more egalitarian than the US when it comes to distributive equality. Nonetheless, the economic institutions in Germany and Japan tend to lock men and women into rigid roles. It is structurally more difficult for women in Germany and Japan to combine work and family than their counterparts in the US. It is also structurally more difficult for men (and women) to change their careers. The very institutions of CME that lock economic actors into long-term relationships also limit citizens' choices to reverse their past decisions to try something new. (Estevez-Abe & Morgan, 2008, p.5)

The above-surveyed arguments trace a stylised fact of the earlier VoC literature that greater gender equality in the labour market comes at the expense of higher wage disparity. This stylised fact builds on the broader *trilemma of the service economy* by Iversen & Wren (1998), who show that out of three core policy objectives – budgetary restraint, wage equality and expansion of employment – only two can be pursued effectively at the same time. Their argument is built around the conventional wisdom initially observed by Baumol (1967) about the nature of the services sector, which has been the key sector generating new employment in advanced capitalist economies over the past decades. Baumol (1967) argues that the service sector is unable to generate enough productivity growth due to its reliance on personal contact and because quality of services is reduced when less time is invested into their delivery. Therefore, the expansion of the service economy cannot lead to rising wages in combination with lower prices, while a strong manufacturing sector, which can preserve wage equality, is unable to absorb new labour market participants at the pace it used to due to: a) technological advances which reduce the demand for the less skilled industrial labour; and b) specific skill requirements of industrial labour. An implication of this mechanism is that FLFP is likely to be higher in those countries that rely on the service economy and where wage inequality is higher. Another implication is that policy makers are facing a difficult choice between pursuing one objective at the expense of another, and

that this choice is embedded in the wider country-specific political and socio-economic contexts.

More recently, Thelen (2012, 2014) questions this conventional wisdom that economic liberalisation necessarily leads to more inequality and that the preservation of wage coordination, labour market regulation and vocational training, which are institutional characteristics of coordinated capitalism, are key to sustaining social solidarity. She shows that defending these institutions has led to increased 'dualisation' of the labour market in a number of Western countries, including in Germany and Scandinavia, which has resulted in growing inequality between insiders who benefit from these institutions and outsiders who do not. On the other hand, she indicates that some of the institutional characteristics of economic liberalism, including state provision of education, training and active labour market policies, can reduce these inequalities. This is an insight of key relevance for this thesis, because it brings the state back into the picture. In other words, it links the process of tertiarisation with state policy, and even more specifically, it argues that the state determines how tertiarisation affects inequality.

Along the same lines of argumentation, Wren, Fodor & Theodoropoulou (2013) revisit Iversen & Wren's trilemma of the service economy as part of a new CPE research agenda focusing on the transformation of advanced capitalist democracies from manufacturing to service-oriented economies. They argue that the ICT revolution during the 2000s led to many services becoming tradable. Productivity growth in the services sector thus became a reality, while the expansion of high wage, knowledge-intensive service employment[6] in both the public and the private sector offers countries a way out of the trilemma of budgetary restraint, wage equality and expansion of employment. In other words, they argue that the so-called knowledge economy holds the promise of both greater labour market inclusion and higher wages even under budgetary constraint. This insight has begun to shift the scholarly attention towards the examination of institutional and political factors that underpin the expansion of the knowledge economy and that can maximise its yields.

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[6] Knowledge-intensive service employment is defined as employment that requires tertiary education and high skill levels.

This is the question for which Thelen (2014), and her concept of embedded flexibilisation, offers an important way forward. She differentiates between the types of liberalisation and argues that liberalisation with embedded flexibilisation, associated with Scandinavia and even the Netherlands, and its focus on 'social investment' policies (such as training for all kinds of people at all stages in life), collectivising risks that follow liberalisation, can lead to both greater economic efficiency and reduction of inequality (Thelen, 2014). This is particularly relevant for gender relations in the labour market, because of the expansion of the service economy and the huge influx of women into the labour market over the past few decades whose economic interests have not been well served by labour protection policies from the manufacturing era.

Furthermore, Nelson & Stephens (2011) show that public social investment, measured as educational attainment, educational spending, active labour market policies (ALMPs) and day care spending, creates high quality jobs from both the perspective of remuneration and quality of work (p.205).

In an effort to further unpack the dynamics of social investment and the types of jobs it creates, Nelson & Stephens (2013) break down service employment into its public and private sector components. This allows them to trace two distinct trajectories of employment in the service economy. They associate the social democratic path (which includes public investment in school and college-based education) with both high levels of public and private sector knowledge intensive service employment, while they associate the liberal with low wage low productivity services (p.148). They also find the social democratic path to be more beneficial for women's employment and they see an important role for working women, as a growing constituency, in ensuring and maintaining such a trajectory of economic transformation.

As part of the same volume that establishes a new research agenda on the CPE of transformation towards service-based economies, Ansell & Gingrich (2013) examine how different university funding structures impact the types of jobs that are being created in the service economy. They show that typical LMEs, like the US and the UK, which have partially private systems have seen employment growth in finance, insurance, and real estate. The Scandinavian welfare states with mass public higher education systems have absorbed workers with tertiary education into the publicly

provided social services.[7] Finally, elite higher education systems with restricted enrolment, such as those in continental European states, have not generated enough labour supply for dynamic services to grow and have thus retained highly skilled workers in manufacturing.

These arguments establish an even stronger link between educational regimes and the types of jobs that are created in the new service economy, with ambiguous implications for FLFP, which appears to yield a greater benefit from public than from private sector knowledge-intensive jobs.

In light of this ambiguity, Walby (2011) warns that while women may have benefited from the knowledge economy, their wages as knowledge workers still lag behind those of men, because men tend to be concentrated in the more capital intensive and profitable sectors of the knowledge economy. Furthermore, feminist scholars have also been critical regarding the uniformity of gains for women in the service-oriented economies (Mandel & Shalev, 2009; Rubery, 2009; Walby, 2011). For example, the exciting new field of stratification economics, which analyses how institutions interact with class and gender inequality, has focussed on how emergence of low wage services performed by women from the lower classes, such as cleaning, cooking and minding children, have 'freed' the better-educated women with higher earning potential from household labour and allowed them to enter the 'official' labour market (Weeden & Grusky, 2005; Bernardi & Garrido, 2008; Mandel & Shalev, 2009). These studies imply that greater FLFP comes at a cost of increasing social stratification among women and analyses of differences between men and women need to also take into account the within-group class differences.

On the other hand, while one may be tempted to conclude that knowledge-intensive employment in the private sector (and especially in highly dynamic sectors such as ICT) is superior to knowledge-intensive employment in the public sector, Gabe (2009) reminds us that very little is known about the specific types of knowledge that are the drivers of economic development (p.440). This is because public sector institutions, such as universities and further education colleges, play a major role in the knowledge

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[7] Ansell & Gingrich (2013), however, do not reflect on the growth of the private sector ICT-led knowledge economy in Scandinavia.

economy, both improving the skills of individuals, and providing direct employment opportunities.[8] At the same time, quantifying their productivity and contribution to economic growth is methodologically very challenging. Given the important role that the public sector plays in female employment (as recognised by the macroeconomic literature such as Anghel, Rica & Dolado, 2012), analysing it as an integral part of the knowledge economy and understanding the dynamics between knowledge-intensive jobs in the public vs the private sector should constitute an important part of the research agenda on female economic empowerment.

Identification of the knowledge economy as the way out of the trilemma is further supported by the welfare state literature. The commonly-encountered view is that European welfare states have been shrinking and disappearing over the past few decades (Allan & Scruggs, 2004), driven by neoliberalism that reduces the state to regulation as the main instrument of economic governance (Schmidt & Thatcher, 2013).

Hemerijck et al. (2013) challenge this perspective. They show that, instead, European welfare states have been adapting in order to tackle the new social risks that have emerged in response to the changes in population, family and labour market structure as well as growing fiscal pressures. These changes have led to the emergence of the so-called social investment state, more so in some European countries than others. The principle of the social investment state is reduction of labour market vulnerability of individuals through investment in their human capital from early childhood rather than through passive social insurance later in life. Jensen (2008), in fact, argues that education should be considered part of the welfare state and that its absence from the welfare state literature and measurements may be more a matter of convention than anything else (p.160). This expanded definition of the welfare state is in line with the criticisms of the seminal 'three worlds' typology of European welfare states by Esping-Andersen (1990). His work has been heavily criticised for not including parts of the welfare states that matter the most for women since they did not fit well into his categorisation, such as service-based expenditures (Schelkle, 2012).

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[8] For example, higher education is one of the UK's main high growth exports, providing 2.7 per cent of all employment and contributing 2.8 per cent to the country's GDP in 2011 (Universities UK, 2014).

These different logics of social protection can be summarised in the distinction Streeck (2011) makes between the 'economic justice' paradigm where people benefit based on their market worth and the 'social justice' paradigm where people have inherent rights to entitlements (p.23). The foundation of the economic justice paradigm is the notion of marginal productivity, where a worker's return is linked to the value of their marginal product in terms of skills and education (Galbraith, 1999, p.30).

The social investment state reflects the logic of 'economic justice' because of its focus on commodification, i.e. supporting people to raise their productivity so that they can position themselves better in the labour market. Nevertheless, while Streeck (2011) is critical of the economic justice paradigm, Thelen (2014) raises an important question whether economic justice can be so easily juxtaposed to social justice or whether they overlap, as the traditional welfare state social justice approach has tended to benefit some groups more than others. Furthermore, the logic of the social investment state is very different from a laissez-faire state which focusses on regulation only. Its role is to 'subsidise' its disadvantaged citizens, such as women, to improve their marginal productivity, in order for them to access higher wages and better quality jobs. Such support has come in the form of family policies, for example, which make it easier for women to obtain higher returns on their human capital. This is in stark contrast to the neoliberal logic, which focusses on the creation of any jobs, including the low wage and low quality ones.

Finally, while many authors associate neo-liberalism with the advancement of the market in all spheres of life including the social, Larner (2000) argues that it is a more complex phenomenon and she emphasises its political component. Neoliberalism can also be seen as a process of political struggle, because it has shifted the welfare state discourse away from the model of male breadwinners and female domestic workers to that of individual 'active' citizens who navigate their way through the market by using their skills and enterprise. In other words, rather than people being portrayed as victims of welfare state restructuring, the emphasis of the post-structuralist literature on neoliberalism is on the role of political struggle which led to this outcome. In that sense, neoliberalism can be seen as emerging out of a "multiplicity of political forces", which produce unexpected alliances and unintended outcomes, rather than a top-down organised political project (Larner, 2000, p.19). According to Fraser (2013), second-

wave feminist activism played an important role in shifting this discourse towards a less paternalistic and organised state, but she also warns about the unintended outcomes of these struggles, in the form of commodification of female labour. Therefore, it is analytically insufficient to reduce people to passive victims of neoliberal policies, which have been imposed in a top-down manner.

What stems from the above literature are warnings against lamenting the transformation of the traditional welfare state, because this process has led to many emancipatory changes for women, as well as warnings against overt optimism when it comes to the role of the social investment state in tackling the adverse consequences of further capitalist expansion on women and other social groups. While Hemerijck et al. (2013) do not want to engage in forecasting the future sustainability of the social investment model, they highlight that a lot more than a passive disintegration of the European welfare state has been taking place over the last couple of decades. The complexity of both political and economic forces that have shaped the development of individual freedoms, along with the restructuring of welfare states in Europe over the past decades and the more recent rise of the knowledge economy, does not allow one to easily characterise these trends as strictly positive or negative. However, it calls for a deeper understanding of which groups benefit from the protection of old vs new social risks.

In conclusion, the above-surveyed macroeconomic and CPE literature points to a number of gaps in our understanding of cross-country differences in FLFP amid significant structural changes that have been taking place in the rapidly changing global economy. So, what do we know and what do we not know about the drivers of FLFP around the world?

The macroeconomic literature focusses on the positive impact of structural change from manufacturing to the service economy on women's labour force participation (LFP), yet it does not examine the role that the state plays in this process. Instead, it treats the growth of FLFP as a 'natural' outcome of structural change. While this literature independently recognises the important role that public sector employment plays in boosting women's LFP, the mechanism is not conceptually integrated with the wider account of the expansion of the service economy. Such integration is important given

that this expansion is taking place in parallel with public sector retrenchment. Furthermore, the macroeconomic literature points to the positive role manufacturing has played in women's employment in the developing world, despite the low skill, low wage foundation of such work. On the other hand, there is also evidence that industrial upgrading in manufacturing leads to women's exit from the sector. This opens up the question of sustainability of relying on manufacturing as a vehicle to integrate women into the labour market, since countries tend to upgrade their industries as they develop. Finally, while employment in more complex industries and the public sector requires a workforce with higher educational attainment, the interaction between educational attainment and structural change, and its combined impact on FLFP, has not been examined from a macroeconomic perspective. In other words, while most macroeconomic studies have assessed the impact of the separate components of structural change on FLFP, some of their findings contradict one another. Therefore, comprehensive accounts that synthesise these perspectives are needed.

The CPE literature has begun to fill in the gaps in our understanding of the structural shift towards the service economy and its relationship to FLFP. This work has drawn our attention to the questions such as what kind of education and what kind of tertiarisation are taking place in the 'new' economy and in which ways they matter for women's greater participation in the labour market. By linking the type of a skill regime a country has to gender equality in the labour market, Estevez-Abe (2005) is the first to make an explicit connection between capitalist diversity, as reflected in the countries' educational systems, and gender. By extension, implications of the body of literature stemming from the VoC tradition are that rigid labour market institutions and the less flexible CME types of economies that specialise in manufacturing and that are characterised by specific skill regimes may exacerbate gender inequalities in employment, while general skill regimes, characteristic of LMEs, may absorb more women into the labour force, but at the expense of greater wage inequality.

The more recent CPE literature throws light on the dynamics of tertiarisation and the different state policies that shape it, such as those associated with social investment into skills, education and family policy. Therefore, this literature brings the state back into the picture and recognises its important role in determining the socio-economic outcomes of tertiarisation. It also argues that, given the ICT revolution and productivity

gains in the service economy, the services sector can be upgraded through state involvement so that the knowledge economy, which is characterised by the production of higher value services and skill upgrading, can overcome the association of the service economy with low wages. In other words, this literature identifies that greater liberalisation, when embedded in state policy and social investment, can lead to both greater labour market inclusion of marginalised groups such as women, and higher wages for them. Therefore, a new consensus has started to emerge around the notion that economic liberalisation, as long as it is embedded in public sector investment and void of austerity, benefits women in terms of their increased labour market opportunities. At the same time, a better understanding is needed of the types of policy interventions and the types of jobs the knowledge economy creates, and how that relates to women's economic opportunities. Specifically, we still lack accounts that would improve our understanding of the relationship between public sector investment in education and skills, public sector employment and the private sector knowledge-intensive economy.

2.3   Socio-economic determinants of female labour force participation in Eastern Europe

While economic research on labour markets and gender in consolidated capitalist economies has seen a pluralist agenda, including the influential field of feminist economics, labour economics research in Eastern Europe has been predominantly shaped by individual countries' policy needs and financed by intergovernmental organisations (IGOs) and bilateral donors. This is because there was a pressing need in the region to 'get institutional settings right' with the onset of transition in order to establish functioning market economies. This impetus for policy-driven research might explain why the majority of economic studies on labour markets have focussed on individual countries or at best on sub-regions (e.g. CEE or SEE).

Early on in the transition, economic policy makers paid insufficient attention to labour markets because it was assumed that the increased supply of labour generated by post-socialist restructuring would automatically become absorbed by the new economy

(Stiglitz, 1999). As it became clear that the large number of people who lost their jobs were not going to create new employment for themselves, labour market policy gained political salience.

In theory, three options are available to policy makers who want to generate new employment: i) structural supply side policies, ii) ALMPs, and iii) demand stimulation. Structural supply side labour market policies are intended to remove institutional and legislative rigidities in order to make the labour market more flexible and therefore more efficient. The ALMPs include measures such as job brokering (matching job seekers with vacancies), labour market training to upgrade or adjust job seekers' skills, and provision of public works and subsidised employment in the private sector. These types of policies belong to the supply-side economics school of thought. Traditional demand stimulation, on the other hand, is a Keynesian approach which starts from the premise that unemployment is primarily due to insufficient demand so fiscal policy is the key instrument that regulates the economic boom-and-bust cycle and consequently employment levels in an economy (Baccaro & Pontusson, 2015).

Eastern European policy makers have focussed on implementing structural supply side policies and ALMPs. Liberalisation of the labour market (e.g. making hiring and firing easier) became a key policy recommendation in a number of Eastern European countries, despite frequent political resistance to it. The ALMPs have grown particularly popular because of their seemingly apolitical nature and direct involvement with job seekers. These policy choices reflected the Western economic consensus of the time which emphasised creation of 'a more adequate' supply of labour as key to resolving the unemployment problem. Traditional demand stimulation, instead, fell out of favour with Western policy makers during the 1980s because fiscal expansion was considered to generate the risk of increasing inflation while creating only moderate employment gains. This 'pro-market' bias had a strong influence on Eastern European policy makers (Epstein, 2008).

The absence of demand stimulation was even more pronounced in Eastern Europe because these countries had little room for manoeuvre when it came to fiscal policy. This was the case because these countries were constrained by the concurrent processes of EU and global economic integration. The region had to introduce taxation,

a key component of fiscal policy, from scratch, following the collapse of communism. According to Appel (2011), tax policies across the region ended up being very similar because they were determined by international factors rather than domestic politics. A global race to attract foreign sources of capital drove Eastern European corporate tax rates to very low levels. When it came to indirect taxes, such as the consumption tax, existing EU regulations were adopted in their entirety. Furthermore, the requirements of the EU's Stability and Growth Pact, which defined an excessive budget deficit as one greater than 3 per cent of GDP, also left little room for macro-management of the economy.

While personal income taxation was more politically salient, it was strongly influenced by the ideologically liberal imposition of the flat tax (Appel, 2011), as well as concerns about the weak administrative capacity of transition countries to implement more complex tax structures (Ganghof, 2006). Finally, in order to ensure political stability a number of Eastern European countries had to pay substantial non-employment benefits to the losers of transition, which represented a large item of their expenditure (Vanhuysse, 2006). For all these reasons, Eastern European countries were severely fiscally constrained throughout their transition to capitalism. Further resistance to demand stimulation may have come from the desire to end the legacy of state dependence and macro management of the economy that was rife during communism.

Given the supply-side focus of Eastern European policy makers, research on labour markets and gender in the region mostly focussed on labour supply and wages. There was an interest in whether women's incentive to supply their labour to the market changed during transition (Chase, 1995; Brainerd, 2000; Jurajda, 2003). Chase (1995), for example, analysed the changing wage elasticities for married women during transition and their LFP in the Czech Republic and Slovakia. However, none of these studies offered a comprehensive overview of FLFP trends and their drivers across the region.[9] Therefore, findings from these studies are not informative when it comes to the broader implications of transition to capitalism for women's participation in the labour market.

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[9] Chapters 4 and 5 of this thesis fill in this gap by examining and ruling out alternative explanations on the drivers of FLFP in Eastern Europe.

On the other hand, very little attention has been paid to the structural sources of female unemployment/labour market inactivity, with an assumption that attraction of any FDI would create jobs in a gender-neutral fashion. A rare study by Orazem & Vodopivec (2000) compares women's wage and employment trends in Estonia and Slovenia and concludes that women benefited from the increasing demand for educated labour during transition. Yet no macroeconomic studies, of which I am aware, have systematically and comprehensively examined the impact of structural factors, such as educational expansion, industrialisation and tertiarisation, on cross-country variation in FLFP outcomes during post-socialist transition. In that sense, the fate of FLFP in Eastern Europe remains an untold story of post-socialist transition.

This is an important literature gap because we are now beginning to understand from the post-Great Recession literature on the Western market economies that insufficient demand, austerity and the absence of a countercyclical fiscal policy lead to sub-optimal levels of employment, particularly for women (Seguino, 2010; Karamessini & Rubery, 2013). Therefore, without understanding the demand side of the economy, we form an incomplete picture of the drivers of FLFP in Eastern Europe.

2.4 Comparative political economy perspectives on capitalist diversity in Eastern Europe

While economic literature on Eastern Europe has been mainly policy driven, CPE perspectives have been theoretically innovative and informative for the academic debate. While I survey this literature in this section, I also emphasise that it has not yet attempted to account for gender differences in outcomes of specific regimes.

Although the 'Varieties of' types of classifications are being increasingly scrutinised from a gender perspective in consolidated market economies, this has not been the case in Eastern Europe. Yet different types of regimes have been identified, and as such their implications along gender lines should be examined. However, in this thesis I am not attempting to extend any 'Varieties of' frameworks by making them account for women. Instead, I am using them as heuristic devices in order to develop hypotheses on how

institutional complementarities (such as production, welfare and education systems) could have systematically affected women's employment opportunities in Eastern Europe.

As I will show below, the comparative perspective on the political economy of female labour market outcomes in Eastern Europe is missing from the literature. A shift away from socio-economic factors towards a macro-comparative examination of institutional frameworks on female economic opportunities appears to be an important next step in our attempt to better understand the factors that constrain or encourage female economic activation in Eastern Europe. In the next three sub-sections, I review the literature on capitalist diversity, skill regimes and welfare state diversity in Eastern Europe.

2.4.1 Capitalist diversity

The emergence of new institutional settings during post-socialist transition has taken place through the interaction of the international political economy and these countries' varying past legacies, so different types of capitalist regimes have been established across Eastern Europe (Bohle & Greskovits, 2012).

While this capitalist diversity is mainly reflected in the various national production systems that these countries have established following the collapse of communism, other institutions, such as national welfare and educational systems that support and complement production regimes in these countries, also diverge. This research assumes that these institutions are mutually dependent and are reinforcing/supporting certain patterns of socio-economic development along the lines of the VoC literature.

The VoC framework has been expanded to account for the Eastern European emerging capitalism. While Baltic states have been identified as the LME type, Slovenia has been classified as a CME (Feldmann, 2006). On the other hand, CEE countries have been recognised as belonging to a completely different type, the so-called dependent market economies (DMEs). The main characteristic of the DMEs is their high external dependency on global production chains for sources of capital and innovation (Nölke &

Vliegenthart, 2009). This is a welcoming development in VoC literature, not least because the VoC literature has been criticised for treating national production systems as closed, i.e. ignoring forces of globalisation at the point of production (Watson, 2003).

Bohle & Greskovits (2012) analyse capitalist diversity that has developed in Eastern Europe within the framework of Karl Polanyi who viewed capitalism as a permanent conflict between pro-market tendencies of capital and protective resistance of the society to market forces (Polanyi, 1944 in Bohle & Greskovits, 2012). Bohle & Greskovits (2012) make a compelling case to show how interaction of these countries' path dependencies, transitional domestic politics and transnational influences have affected Central Eastern European countries differently from the Baltic states and Slovenia.

According to Bohle & Greskovits (2007):

> [T]he neoliberal Baltic states excelled in market radicalism as well as macroeconomic stability, but lagged behind other states in industrial transformation and social inclusion… In contrast, the embedded neoliberal and less market-radical Visegrad states achieved better results in building complex, competitive export industries. At the same time, they have been somewhat more socially inclusive too. (p. 462-3)

Bohle & Greskovits (2007, 2012) explain emergence of these different types of capitalist regimes through the interplay of two groups of factors: political decisions and past legacies on one hand and transnational influences on the other. This argument stands in stark contrast to the VoC literature, which assumes prior existence of established and consolidated national institutions embedded in national production systems, which resist global forces of convergence.

Therefore, the emergence and consolidation of institutions which coordinate economy activities in post-socialist countries "were much more thoroughly shaped by the influence of transnational factors than in the case of Western liberal market and coordinated market economies" (Bohle & Greskovits, 2007, p.464). On the other hand, some historically embedded institutions, especially some components of educational and social protection systems, have remained embedded in Eastern Europe despite the

strong economic and social impact of transition.

From the above literature, one can gather that both institutional change and institutional continuity have characterised post-socialist transformation. For example, Bohle & Greskovits (2012) explain how national welfare systems have been strengthened through political and social conflict in some countries, while they have been weakened in others. In that sense, these countries' welfare systems may not be perceived as complementary organic developments to national systems of production, which would be in line with Estevez-Abe, Iversen & Soskice (2001) argumentation, but in fact, they can be observed as creating certain types of social constraints on the process of institutional change as envisaged by economic reformers. Following Streeck (2009) and Thelen (2012), whose contributions were discussed in the previous section of this chapter, these conflicts could also be understood as conflicts between two types of institutions, those that enhance economic efficiency and those that promote social cohesion.

Finally, the debate on the possibility of Eastern European convergence with Western Europe is another important component that should inform our understanding of Eastern European political economies in the making. While the liberal economic view argues that convergence is indeed possible, sociologists and political economists are more cautious in pointing to the inherent historical backwardness of Eastern Europe that cannot be overcome through mere adoption of liberal economic policies (Epstein, 2014). Berend & Bugaric (2014) also draw our attention to the over-optimistic approach western academia has had towards the convergence of Eastern Europe and warn of democratic and economic backsliding in the region. These two opposing views – the optimistic and the pessimistic one - have important, albeit different implications for institutional typologies and comparative studies of western and eastern market economies. Furthermore, if eastern countries cannot attain the welfare levels observed in western market economies the implications of these countries' stagnation in high skill low wage economies for female economic emancipation have to be examined. This view is further reinforced by Ashton, Brown & Lauder (2010), who argue that multinational companies (MNCs) have led to the proliferation of high skill low wage jobs internationally since the 2000s, as the worker monitoring costs have decreased

due to the IT revolution and the role of technology in the standardisation of work practices. They named this phenomenon 'digital Taylorism'.

Bohle & Greskovits (2012) also question the sustainability of Eastern European development trajectories, particularly following the Great Recession. They warn about the stability of the institutions that were established during transition and argue that they have already started to show signs of erosion. They call for a discussion on new approaches to resolve the growing tension between the market and democracy in the region.

2.4.2   Skill regime diversity

During communism, heavy investment in specific skills and vocational education was taking place in Eastern Europe. It served the needs of industrialisation and these regimes were characterised by jobs for life, low occupational mobility and full employment.

Human capital theory has dominated academic and policy debates in Eastern Europe. It is based on the idea that quantity of education is what exclusively matters for boosting national competitiveness. However, the link between education and productivity is not so straightforward in practice. The problem of skill mismatch and low skill substitutability has started to plague the region as the laissez-faire approach dominated labour market and education policy, particularly during the first stages of transition. The expectation was that the market would match workers and jobs in the new economy as soon as privatisation took place. Yet, this did not materialise due to labour market frictions, such as occupational and geographic mobility of workers (Roland, 2000). Furthermore, literature on skill matching in Eastern Europe acknowledges that the situation may be worse for women, but there are very few answers to why this may be the case (Bartlett, 2012).

Neither the VoC literature on Eastern Europe nor the Bohle & Greskovits (2012) influential typology, delve in detail into the implications of skill regimes (or their absence) for capitalist diversity in Eastern Europe. One point on educational systems

that does feature in work on capitalist diversity in Eastern Europe is that these countries have struggled to fully reform their educational systems. Bohle & Greskovits (2012), for example, argue that the absence of reform has been due to the scarce resources following pressures of international capital for subsidies, as well as EU-imposed tight budgetary constraints. Nölke & Vliegenthart (2009) point out that neither MNCs nor governments in Eastern European DMEs invest much into further qualifications of their workforce (p. 680).

In a PhD thesis, Martinaitis (2010) shows that Eastern European skill regimes, much like these countries' production regimes, diversified during post-socialist transition. The author focusses on EU-8 and identifies Slovenia, Slovakia and the Czech Republic as having specific skill regimes, while he argues that the Baltic countries have developed general skill regimes during transition. He finds the cases of Poland and Hungary ambiguous. This recognition of skill regime diversity in Eastern Europe calls for a deeper examination of institutions and the role of government in matching the educational profiles of the population with the type of production systems these countries have developed during capitalism.

Another important piece of evidence has emerged in a recent DPhil thesis by Tarlea (2015) which shows that the demand for, and the supply of, higher education in CEE has been driven by MNC demands for skill profiles, as they offer better wages than the rest of the economy. She argues that demand for education has led to the proliferation of private tertiary educational institutions in the region, without much government involvement in the shaping of these processes. This finding has strong implications for the compatibility between these countries' externally dependent production systems and their skill regimes.

Padure (2009) argues that educational reform in the region has been impeded by the lack of political will to dismantle teachers' unions. This argument suggests that resistance to educational reform has been a politically salient issue. It may also explain why governments in CEE were passive about education policy and why MNCs shaped the market for higher education in the region, as suggested by Tarlea (2015). On the other hand, this lens of analysis may also draw attention to the role of political factors in educational reform that took place in the Baltic, whose focus was on nation building and

the removal of Russian influence. This political agenda would have been able to generate public support for educational reform and expansion towards general skill regimes, as has been suggested by Bohle & Greskovits (2012).

2.4.3   Welfare state diversity

According to Szelenyi (2011), accounts of post-socialist welfare state transformation were mostly influenced by Janos Kornai's notion of the socialist state as a prematurely-born welfare state. Such a description implied that welfare provisions needed to be cut down and/or privatised during transition. Szelenyi (2011) further argues that this narrative has been rejected by a more recent study on post-socialist welfare state pathways by Cerami & Vanhuysse (2009), which offers a novel theoretical framework for conceptualising welfare state formation in the region. This edited volume sets out the different new institutionalist approaches to welfare state analysis and the insights they bring for the understanding of institutional change in Eastern Europe.

Much like the literature on capitalist diversity surveyed in the previous section, the focus of this book is on actors and intended and unintended consequences of their actions, rather than relationships between variables (Cerami & Vanhuysse, 2009, p.35). The volume identifies as important the historical development of welfare states in Eastern Europe before socialism, and the role of different factors that have shaped these trajectories over time, including the Habsburg, Russian and Ottoman empires. It focusses on explaining mechanisms that lead to specific institutional configurations and also argues that many parallel mechanisms affected institutional transformation in Eastern Europe and resulted in the shaping of the region's post-socialist institutions. As a result, it identifies sources of institutional continuity and path dependence.

Cerami & Vanhuysse's edited volume couples this historical institutional analysis with a rational choice institutional framework, which interprets the events that have affected the welfare state during transition. That part analyses how the end of socialism, in which welfare benefits were administered through production (as there was no unemployment or need for redistribution), led to an immediate need for political elites to adjust to the new circumstances. They adjusted by adapting emergency measures

such as unemployment benefits to maintain political stability, which were layered on top of the old systems and consequently led to hybrid welfare regimes.

This argument relies on the influential interpretation of abundant welfare payments in CEE by Vanhuysse (2006), who argues that this was a rational political strategy instead of irrational populism. Vanhuysse creates a novel rational choice analytical framework for the analysis of interdependency between economics and politics of the welfare state in the region. He shows that political stability, i.e. the absence of political turmoil, during the hardship of transition in CEE, was the result of a conscious 'divide and pacify' strategy of these countries' governments, which strategically used welfare payments such as unemployment benefits and pensions to divide and pacify the losers of transition. He further argues, as part of the Cerami & Vanhuysse (2009) volume, that the Baltic states, on the other hand, denied citizenship rights to Russians and created a salient political issue out of it, with the rational political aim of shifting class conflict onto an ethnic one.

Vanhuysse's rational choice framework, as well as further insights from the Cerami & Vanhuysse (2009), can lead to a plethora of insights relevant for this thesis. For one, it points to the relationship between welfare payments and FDI: political stability ensured via welfare payments has led to significant and stable FDI inflows. It also points to the instrumental value of welfare states in the region, which questions the sustainability of these countries' welfare state models in the longer run. On the other hand, they do not discuss the impact of these different welfare state development trajectories along gender lines, which remains a gap in the literature.

While the above-surveyed literature is against creating Eastern European welfare state typologies, because of its interest in the political and historical origins of welfare states, Lendvai (2009) creates a typology of welfare states in the region. Following Esping-Andersen (1990), Lendvai divides them into three welfare model types: the neoliberal welfare, the social corporatist and the more hybrid or incongruous model. Lendvai (2009) argues that four Eastern European countries have established the neoliberal welfare model: Estonia, Latvia, Lithuania and Slovakia, and that low social protection and high economic openness has resulted in high inequality and poverty rates. The Czech Republic and Slovenia established a social corporatist welfare model, according

to Lendvai, and both countries are therefore characterised by high levels of social protection and social expenditures. Finally, she categorises Hungary and Poland as establishing the hybrid model because they have combined high levels of social protection with high levels of economic openness. In light of this typology, it remains unclear why low social spending would have a positive effect on FLFP in the Baltic countries, but negative in Slovakia, while high social spending would have a negative effect on FLFP in the Czech Republic, but positive in Slovenia.

Welfare state literature on the region, as well as more broadly, needs to find a way to more successfully integrate those welfare policies that disproportionately impact women, and to acknowledge the growing importance of new social risks and social investment. Analyses of welfare states should also include education, which is now being increasingly acknowledged as an important component of national welfare.

2.4.4 Summary

The above survey of the growing CPE literature on capitalist diversity in Eastern Europe points to important institutional interdependencies that characterise the emerging political economies in the region. A link between an FDI-led production regime and political stability through the use of the welfare state has been proposed and so has the impact of FDI-led economic development on the formation of these countries' skill regimes.

While CPE literature on the development of capitalism in Eastern Europe surveyed in this chapter acknowledges existing capitalist diversity, it does not examine how these developments affected economic relations between the genders. Such conspicuous absence of gender as an analytical category in this literature indicates that future research should aim to improve our understanding of how inequality in its multiple forms is produced and reproduced in these emerging political economies. The key question that emerges from this literature, therefore, is how a reindustrialisation-driven trajectory of capitalist development vs the service driven one have affected FLFP in the region. The role of state policy in these processes is also not clear.

Therefore, the Eastern European context gives us a scenario of structural change which can offer further insights into the dynamics of FLFP and help us also to synthesise the dissipate findings from literature on consolidated market economies which was surveyed in the first two sections of this chapter. By building on these insights from literature and observing the process of structural change in post-socialist Eastern Europe, the associated institutional and policy developments and their impact on FLFP, this thesis develops a dynamic and comprehensive conceptual model, which can improve our understanding of these processes. I present this model in the next chapter.

Chapter 3.   A theoretical model of female labour force participation, industrial upgrading and service transition

In this chapter I present a theoretical model that accounts for the variation in female participation across Eastern European labour markets. The model constitutes the core contribution of this thesis and is informed by the economics and CPE literature surveyed in Chapter 2 as well as the axiomatic logic of CPE. The aim of this thesis is to integrate the different components of economic restructuring, and the institutions and state policies associated with it, in order to understand how they systematically affect FLFP in post-socialist transition. The model presented in this chapter accounts for the following processes: industrial upgrading, educational expansion towards general skills and growth of KIS, and posits causal relationships between them and FLFP. While all three of these processes have been shown to independently affect female labour market outcomes (see Chapter 2), so far there has been no attempt to examine the interlinkages between them in order to formulate one comprehensive theoretical account of how they can affect FLFP.

The model, which is depicted as a 4-quadrant diagram in Figure 3-1, illustrates the hypothesised relationships between these three variables and the extent of female participation in the labour market, which is the explanandum of this thesis. While this chapter focusses on presenting conceptual relationships between these variables, subsequent empirical chapters of this thesis focus on their operationalisation in order to test empirically the proposed theoretical model.

The proposed model is based on the dynamics of structural change in an economy and it posits how that dynamism can translate into different levels of female participation in the labour market. It is a relevant input for theorising institutional and structural change, which has become particularly relevant following critiques of CPE theoretical frameworks, such as the VoC model, for being too static.

Recent economic literature has begun to emphasise the complexity of interaction between demand and supply drivers of FLFP, as well as the important role of government policy and institutions in mediating these interactions (Gaddis & Klasen, 2014; Humphries & Sarasúa, 2012). These insights are also reflected in my theoretical model. In other words, my model posits that specific factors, such as education or economic growth, also have explanatory power. Yet, I move beyond simple notions of causality in trying to explain complex social phenomena such as FLFP. Finding conclusions such as 'education and economic growth matter for female employment' too simplistic, I go one step further in attempting to understand what kind of education and growth matter and in what ways they interact in order to produce specific labour market outcomes in Eastern Europe. Therefore, instead of only identifying which independent variables drive which trends, I supplement this approach with a thicker, theory-oriented explanation of how these independent variables affect one another.[10]

My approach builds on some of the most robust findings from economic research, such as that of Gaddis & Klasen (2014), who argue that secular economic trends cannot explain FLFP outcomes and policy has an important role to play. While they rule out stylised facts about the drivers of FLFP across the world, they do not suggest the ways in which policy matters. From a CPE perspective, policy can be seen as a product of a specific political and economic climate that needs to be understood in its own right. In the case of Eastern Europe, apart from the domestic actors, the institutional and policy environment is also strongly influenced by transnational actors such as the MNCs and the EU (Medve-Bálint, 2013). My theoretical framework accounts for these regional idiosyncrasies.

The theoretical model, its foundations and the mechanisms through which it operates are presented in the following three sections. In the second part of this chapter, testable hypotheses that stem from the model are identified and detailed guidelines on how these hypotheses will be tested empirically are presented.

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[10] My approach follows guidelines from Swedberg (2014) who offers advice on how to theorise in the social sciences.

3.1　Model background

The foundation of my theoretical framework is the hypothesis that the different trajectories of economic restructuring that Eastern European countries pursued during transition either encouraged or constrained female labour market opportunities.

This core hypothesis is primarily inspired by the work of Margarita Estevez-Abe on the gendering of the VoC framework (Estevez-Abe, 2006). While Estevez-Abe focusses on the role of skill regimes on occupational segregation in the western labour markets, more recent work discusses the expansion of the service sector and the knowledge economy, and the pivotal role this has had on female employment in western market economies (Nelson & Stephens, 2013; Wren, 2013; Thelen, 2014). I use these important insights from the analysis of western advanced market economies and combine them with the political economy features of post-socialist transition in order to conceptualise a theory on how capitalist development trajectories can translate into female labour market outcomes. These new components of my theoretical framework that draw on the Eastern European context are: i) Eastern Europe's dependence on foreign capital as a dominant driver of these countries' development trajectories, and ii) the dynamism of Eastern European political economies which have been characterised by rapid structural change. This latter consideration leads me to hypothesise that structural transformation of an economy may constrain or enable specific labour market outcomes.

The two main development trajectories that can be traced in the Eastern European countries dependent on FDI inflows have been one that is based on industrial upgrading and another that is based on the development of KIS. Predicated on the role the service sector has played in integrating large numbers of women into the labour markets of the western advanced market economies (Nelson & Stephens, 2013; Thelen, 2014), as well as empirical evidence on the defeminisation of manufacturing labour via industrial upgrading in Latin America (Tejani & Milberg, 2010), I hypothesise that those Eastern European countries that focussed on developing into knowledge-oriented service economies saw greater entry of women into their labour markets than those countries that pursued industrial upgrading. However, I also argue that such development

trajectories were not driven exclusively by market forces, but were also the result of specific policies that were pursued by governments in interaction with MNCs.

3.2   Relationships between the variables

This section brings together the proposed relationships between FLFP (ΔL), industrial upgrading (ΔK), educational expansion (ΔE) and KIS (ΔS). The theorised relationships are summarised into equations and then illustrated in the 4-quadrant diagram, which is presented in Figure 3-1 below.

The hypothesised relationships between the four variables can be expressed in the following four equations:

(1) $\Delta L = f_1(\Delta K, \bar{X})$

(2) $\Delta L = f_2(\Delta S, \bar{Y})$

(3) $\Delta E = g(\Delta K, \bar{Z})$

(4) $\Delta S = h(\Delta E, \bar{W})$

where $\bar{X}$, $\bar{Y}$, $\bar{Z}$ and $\bar{W}$ are the exogenous variables affecting these relationships (discussed below), while the other variables are as defined above.

In equation (1) FLFP is a function of industrial upgrading K. The relationship between industrial upgrading and FLFP is based on insights from Tejani & Milberg (2010) (surveyed in Chapter 2) and the history of occupational segregation within manufacturing in Eastern Europe during socialism (Lobodzinska, 1995). Following this literature, I hypothesise that FLFP and industrial upgrading are inversely related. The more industrial upgrading takes place, the fewer women participate in the labour market, ceteris paribus. This is because industrial upgrading has been shown to have a negative impact on female employment in manufacturing in Southeast Asia (Ghosh, 2001) and in Latin America (Tejani & Milberg, 2010). While female employment was high during socialism in light labour-intensive industrial sectors, I hypothesise that

those Eastern European countries that followed the industrial upgrading trajectory have dismantled a significant share of light female-labour oriented manufacturing along the way, which has led to the defeminisation of manufacturing labour. A second mechanism through which female manufacturing employees could have lost out from industrial upgrading is that women held many auxiliary non-production jobs in manufacturing companies and these positions could have been cut or outsourced in the process of privatisation and company restructuring (Lobodzinska,1995). Both these mechanisms could have been present at the same time and would have affected the relationship in the same direction.

It could also be plausible to hypothesise a positive relationship between FLFP and industrial upgrading, based on the 'nimble fingers' hypothesis (Elson & Pearson, 1981) and the vast amount of empirical work that has stemmed from it, particularly from Asia. Nevertheless, as Ghosh (2001) points out, proliferation of female employment in manufacturing across the developing world during the period 1980-1995 was dependent on relative inferiority of remuneration and working conditions for women. As soon as wages and conditions started to improve and the manufacturing became more complex, capital and skill intensive, women across Asia stopped benefiting from employment in these sectors. Therefore, given the initial levels of manufacturing complexity, skill intensity and income levels in Eastern Europe, which were higher than in East and Southeast Asia even during the early stages of transition, I posit that the type of industries that expanded via industrial upgrading in Eastern Europe were not the female labour intensive ones and that women lost out from these processes in the region. In other words, over a larger range of industrial upgrading, this relationship can be thought of as inverse U-shaped – women benefit from industrial upgrading in the beginning, until complexity and wages reach a level where defeminisation begins.

$\overline{X}$ contains other exogenous variables that affect the slope and the Y-intercept of the relationship between industrial upgrading and FLFP, so that a change in these exogenous variables can shift the curve and/or change the slope of the hypothesised relationship. This theoretical relationship between FLFP and industrial upgrading is determined by the extent of occupational segregation between the genders in industrial labour. A decrease in occupational segregation in manufacturing, the equivalent of having more female employees in those industrial sectors that are dominated by men,

would make this negative relationship between defeminisation of manufacturing and industrial upgrading more inelastic, so that L would be less sensitive to changes in K. Moreover, a country that has historically had relatively more women in manufacturing (regardless of the level of occupational segregation within manufacturing) would lose more female manufacturing labour as a result of industrial upgrading, ceteris paribus. This means that the Y-intercept would be smaller in those countries where fewer women work in manufacturing.

Female reservation wages, which are a function of family policy (maternity and childcare benefits) and partner's earnings, can also theoretically determine to what extent women are willing to work in manufacturing. Higher reservation wages would result in fewer female workers in manufacturing, ceteris paribus. I am assuming that the relationship between female employment and their reservation wages is stronger for low-skill workers in manufacturing than for the highly-skilled workers in KIS. Prasad (2003), for example, suggests that highly-skilled workers are less tolerant of prolonged unemployment because they stand to lose more human capital investment by being unemployed. Following this line of argument, we may postulate that an increase of K would lead to a smaller negative effect on L in those countries where low skill women have higher reservation wages, i.e. the relationship between the two variables would be less elastic.

Equation (2) depicts FLFP as a function of KIS, where the relationship between the two variables is positive. The hypothesised direction of this relationship is based on numerous evidence on how the knowledge economy and the expansion of high productivity service employment has boosted female employment across the western world (Rubery, 2009; Walby, 2011; Nelson & Stephens 2013; Thelen, 2014). The KIS include both private and public sector jobs, because social investment has been shown to affect the development of the knowledge economy (Wren, 2013; Thelen, 2014). Low skill services are not included in this equation (not even as a part of $\bar{X}$, as we will see below) because the focus of the most recent CPE literature has been on the emergence of the knowledge economy which, due to productivity growth in the service sector, the ICT revolution associated with it, and growing tertiary educational attainment, is generating the majority of new service employment (Wren, Fodor & Theodoropoulou, 2013). Furthermore, in Eastern Europe, a large share of low skill service jobs are part of

the informal economy[11] and are much more frequently performed by men (Packard, Koettl & Montenegro, 2012).[12]

$\overline{Y}$ contains the exogenous variables that affect the relationship between FLFP and KIS. The types of KIS jobs that are created determine the gender composition of KIS employment. According to Walby (2011), the more centred these jobs are on fixed capital and technology, the more masculine they are, while the more centred on human capital they are, the more gender balanced. In other words, the more these KIS jobs are focussed on workers' skills and the less productive they are, the more elastic is the relationship between KIS and FLFP. It is also important to point out that the less centred the jobs are on fixed capital and technology, the less they are well paid. Another distinction between KIS jobs and others is whether they are generated in the public (such as educational and health services) or private sector (such as IT, real estate or finance). Based on the findings by Ansell & Gingrich (2013), a larger share of public sector KIS jobs would have a stronger impact on the overall FLFP. We could also expect these public sector KIS jobs to be characterised by lower remuneration.

Equation (3) depicts educational expansion, defined as a shift away from industry or firm specific towards general skills, as a function of industrial upgrading and other exogenous variables $\overline{Z}$ that I discuss below. I hypothesise that the relationship between industrial upgrading and educational expansion is inverse so that the demand for specific skills in those Eastern European countries that have pursued industrial upgrading is higher than the demand for general skills and vice versa. This hypothesis is based on insights from the CPE literature on skill formation that is surveyed in Chapter 2. In this literature CEE countries are perceived as having a comparative advantage in the production of complex goods because of their skilled but cheap manufacturing labour (Nölke & Vliegenthart, 2009). Furthermore, because MNCs have been the main source of innovation in CEE where domestic innovative activity is low, empirical evidence from the region indicates that these severely fiscally constrained

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[11] According to Eurostat 2008 data, informal employment covers between 20-30% of the workforce in Eastern Europe (Packard, Koettl & Montenegro, 2012).
[12] Interestingly, this is a very different trend from the one observed in the developing countries where women constitute a large portion of the informal workforce in the low skill service economy.

governments[13] have not prioritised investment in general-skills oriented tertiary education nor in research and development (R&D) (Nölke & Vliegenthart, 2009).

On the other side of the spectrum, I hypothesise that government-driven expansion of general skills and tertiary education was an alternative development strategy to industrial upgrading and would have taken place in those countries that did not benefit from industrial upgrading. This argument is based on insights from Bohle & Greskovits (2012), who argue that the Baltic states pursued general skill educational expansion as an alternative to industrial upgrading.

Exogenous variables, influencing the relationship between industrial upgrading and educational expansion, and represented by $\bar{Y}$ in equation (3) are the following:

Fiscal constraints. The more fiscally constrained a country is, the less public investment in education takes place, ceteris paribus, so the Y-intercept of the relationship between K and E is lower. This could be linked to that country's level of GDP per capita, but it does not have to be, since different countries have different social and political pressures on public expenditure, irrespective of their income levels. Fiscal constraints have been particularly pertinent in Eastern Europe, due to the pressure of global tax competition to attract foreign capital as well as the constraint imposed by the process of EU integration (see Section 2.3 in Chapter 2 for a more detailed discussion of tax regimes in Eastern Europe).

Dependence on foreign capital for innovation. The more dependent the country is on foreign capital for innovation, the more elastic is the inverse relationship between K and E. This is because the country that is dependent on MNCs for innovation will focus on preserving that source of innovation rather than invest in general skills-oriented education and R&D, which is necessary for domestic innovation to take place. Furthermore, the MNCs are also keen to keep the taxes low, which fiscally constrain the host country and does not allow it to invest in educational expansion.

Institutional and political factors may also stall the ability of a country to reform and adapt its educational system to structural change. Such factors are the strength of

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[13] As already discussed in Chapter 2, these governments are fiscally constrained because of the substantial expenditure on subsidies in order to attract FDI and significant social and political pressure to compensate losers of transition, coupled with strict fiscal discipline imposed on them by the EU.

teachers' unions and their resistance to reform (Padure, 2009) as well as the institutional flexibility of a country's educational and training system. The flexibility of a country's training system depends on whether skills are acquired through firms and on-the-job training or through the public sector. According to Anderson & Hassel (2008), firm-based skill regimes, like the skill regime in Germany, have been slower to respond to the needs of the rising service economy than school-based training regimes, as seen in the Netherlands.

Equation (4) shows that KIS,[14] which include highly skilled service jobs in the public and the private sector, are a function of educational reform and parameter $\overline{W}$, which contains the exogenous variables discussed below. The proposed relationship is based on the following logic: educational expansion leads to more public and private sector KIS employment. In the public sector, we can expect that employment in educational institutions as well as a stronger social investment state is the result of a greater amount of public resources devoted to educational expansion. While a traditional welfare state relies on passive cash payments, the social investment state, though it is less expensive in terms of total expenditure, relies on more public employment to provide services that support educational expansion. We know from literature that public sector employment disproportionately benefits women (Anghel, Rica & Dolado, 2011; Ansell & Gingrich, 2013). Recent empirical evidence relating to private sector employment shows that public investment in educational expansion, social investment and R&D leads to the expansion of both public and private sector KIS jobs, while absence of investment produces only new low skill low wage service jobs (Nelson & Stephens, 2011; Nelson & Stephens, 2013; Thelen, 2014).

Mellander & Florida (2012) draw our attention to the possibility of reverse causality between these two variables by arguing that the existence of firms that require 'knowledge workers' could be driving skill formation in a country (p.4). Nevertheless, in the case of post-socialist Eastern Europe, Bohle & Greskovits (2012) emphasise initial

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[14] The following economic activity sectors are defined as KIS: i) high-tech knowledge-intensive services (e.g. programming, telecommunications, scientific research and development and consultancy), ii) knowledge-intensive market services excluding financial intermediation and high-tech services (such as transport, legal and accounting services, advertising and market research), iii) knowledge-intensive financial services and iv) other knowledge-intensive services (such as publishing, public administration, education and health) (NACE Rev.2 codes - 2-digit level between brackets). The complete list can be found in Appendix A.3.1.

government efforts to attract foreign investors – investment in educational expansion in the case of the Baltic states, and industrial subsidies to upgrade its industry in the case of CEE. Furthermore, Mellander & Florida (2012) conclude that this is a classic case of interaction between the demand for skills and their supply which can never be fully resolved theoretically or empirically. Therefore, they argue, the dynamics between educational supply and the knowledge economy should not be analysed as a chicken and egg question. It is a lot more important to understand how these two phenomena interact to produce public and private sector KIS jobs and how that translates into economic growth (p.4-5).

Given these insights, my model proposes a sequential relationship, where educational expansion leads to the expansion of KIS, which in turn positively affects FLFP (as specified in Equation 2). Nevertheless, in Chapter 6, I empirically test these relationships by treating educational expansion as an intervening variable that determines the extent to which KIS contribute to FLFP. I acknowledge the complex causality between these two variables, which is difficult to reduce to linear one-way relationships.

I have identified three exogenous variables represented by $\overline{W}$ that can affect the relationship between educational expansion and KIS. One is the level of a country's economic openness and its exposure to foreign investment. Educational expansion can translate into private sector KIS jobs to the extent that there is an international (and domestic) market that requires these skills. The more a country is integrated with the global economy and global knowledge supply chains, and the more tradable are the services it produces, the more educational expansion can translate into KIS jobs.

The second factor that shapes this relationship between E and S is investment in ICT, since it is a key tool through which knowledge can be managed inside organisations as well as in the market (Jalava & Pohjola, 2002) and a key reason for the growth of productivity in the service economy (Wren, Fodor & Theodoropoulou, 2013). The more a country invests in ICT, the more we can expect educational expansion towards general skills to translate into the expansion of KIS jobs.

The third factor is the financing structure of a country's system of higher education, as observed by Ansell & Gingrich (2013). A mass publicly provided tertiary education, such

in Scandinavia, can be expected to increase public service KIS jobs, while a partially private financing structure is expected to generate more jobs in the private KIS sectors, such as finance and real estate.

3.3 The causal mechanisms

The diagram presented in Figure 3-1 below depicts the discussed relationships between FLFP (ΔL), industrial upgrading (ΔK), educational expansion (ΔE) and KIS (ΔS). This is a stylised model so the magnitude of the depicted relationships is not important, only their direction.

The negative causal mechanism that the model depicts is as follows: Initially, while a country's competitive advantage lies in light, labour intensive manufacturing such as textiles, women benefit from manufacturing employment. Starting in the NE quadrant of Figure 3-1 a movement down the f_1 curve takes place and industrial upgrading increases from K_0 to K_1. This affects FLFP negatively so it decreases from L_0 to L_1. This event, ceteris paribus, produces an upward movement along the g curve, depicted in the SE quadrant, so that E_0 shifts to E_1. The way this shift should be interpreted is that educational reform towards general skills loses support and there is disproportionately more demand for vocational education and specific skills. This shift from E_0 to E_1 leads to an upward movement along the h curve so that KIS is reduced from S_0 to S_1.

The mechanism whereby there is a reduction in KIS is as follows: At any given level of educational attainment, there is a certain level of KIS. If a country wants to stimulate KIS, it has to invest more in educational expansion. However, as industrial upgrading takes place, there is both more demand for specific skills and fewer resources for educational expansion, so the development of the knowledge economy stalls while manufacturing jobs become relatively more attractive. This negative loop results in an even lower new equilibrium for *L*. Women do not react to these employment losses politically because collective action is very hard to organise for the unemployed, so women become even further socially marginalised.

Figure 3-1. Model of female labour force participation, industrial upgrading and service transition
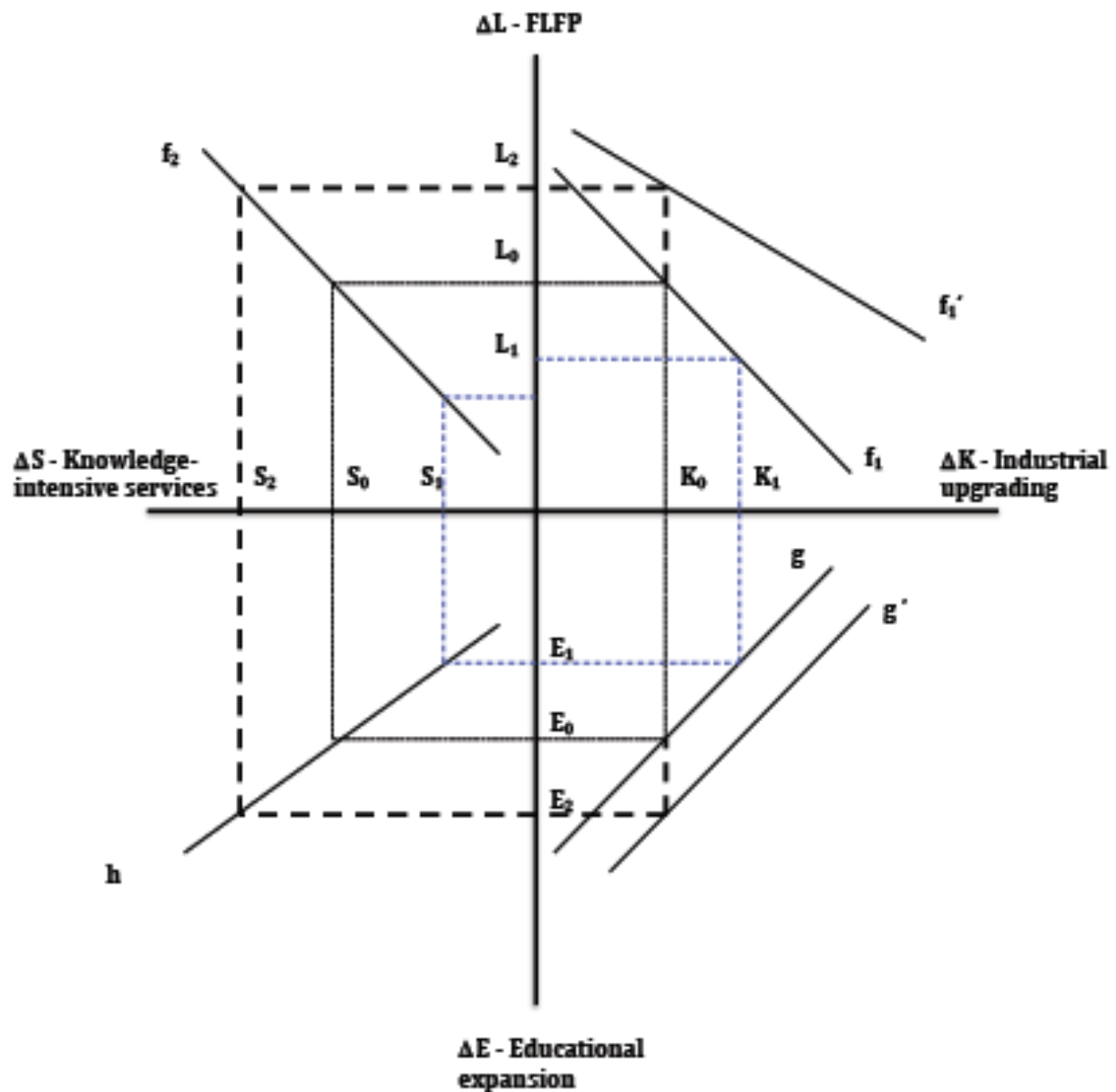
An additional question that arises when we trace this negative feedback loop is related to the notion that the more capital intensive and complex manufacturing becomes, the less it is labour intensive and the fewer jobs in manufacturing become available. This leads to even more pressure on the welfare state and even less money for educational expansion, which is not a sustainable development trajectory, even beyond its impact on women's employment opportunities (the sustainability of the development models

that have been observed in Eastern Europe is discussed in the next section of this chapter).

The positive causal mechanism operates as follows: Stagnation of industrial complexity (or absence of industrial upgrading) puts pressure on the country's economic growth model, so it starts with educational expansion to boost its economy. This is depicted as an outward shift of g to g' in the SE quadrant, which occurs due to the exogenous impact of new government spending on education. This shift results in E_0 increasing to E_2. This, in turn, increases the level of S_0 to S_2 as KIS expand which raises L_0 to L_2 as FLFP expands. Such expansion of FLFP results in the outwards shift of f_1 to f_1' because the relationship between FLFP and industrial upgrading is redefined once a larger share of those employed work in the service economy, since now at any level of industrial upgrading FLFP will be higher. f_1' is also less elastic because the link between women's position in the labour market and industrial upgrading is weakened, as the service economy expands and there are more employment opportunities outside manufacturing. Finally, since manufacturing has not been upgraded, low-skilled women continue to benefit from employment in light industry. In reality, any combination of these two scenarios may also take place.

These two stylised causal mechanisms, depicted in Figure 3-1, show how a self-reinforcing vicious or virtuous cycle of gender equality in labour market opportunities can develop in a country depending on whether its development trajectory is oriented towards industrial upgrading or KIS.

The two mechanisms are posited as mutually exclusive, following the axiomatic logic of CPE literature on capitalist diversity in Eastern Europe (Feldmann, 2006; Nölke & Vliegenthart, 2009; Bohle & Greskovits, 2012). I am assuming that a country that is following the path of industrial upgrading cannot concurrently pursue the development of the knowledge economy and vice versa. Institutional complementarities that support the development of one trajectory develop, which are further reinforced by the Eastern European post-socialist context of tight budgetary restraint and dependence on foreign capital, which reduces the agency of domestic actors and makes them particularly path dependent. Nevertheless, empirical evidence that I present in Chapters 6 and 7 will

offer additional insights on whether the 'special case' of combined industrial upgrading and expansion of the knowledge economy is possible in Eastern Europe.

3.4   Guidelines for testing the model's empirical validity

In order to test the theoretical model presented in this chapter, as well as the congruence of other theories on the socio-economic drivers of FLFP in the region, I first define a set of predictions in the form of hypotheses that I can test against the empirical data that I collect. Since a research hypothesis in a theory-oriented mode of explanation is equivalent to a theory, empirical testing of a hypothesis is equivalent to theory testing.

As the last two decades have seen intense debate over the relevance of the dominant neoclassical economic theories for explaining diversity in female labour force outcomes, feminist, institutional, welfarist and political economy accounts have emerged and offer more plausible explanations for the observed trends (McCall & Orloff, 2005). My approach therefore represents a comprehensive effort to understand which theories can be usefully applied in order to explain the observed trends in FLFP in the region.

3.4.1   The hypotheses

From the survey of literature in Chapter 2 and the theoretical model that I develop in this chapter, I isolate the following 21 testable hypotheses, of which the first 11 are based on the socio-economic and structural drivers of FLFP surveyed in Chapter 2, and the last 10 stem from my theoretical model presented in this chapter:

Hypothesis 1: *Higher FLFP rates are associated with lower gender gaps in LFP and vice versa.*

Hypothesis 2: *Unemployment rates are driving variation in FLFP.*

Hypothesis 3: *Differences in historical trends in FLFP during communism correspond to the divergence in trends observed during post-socialist transition.*

Hypothesis 4: *Variation in FLFP rates of the youngest working age cohort (15-24 years) is driving FLFP for all working age women.*

Hypothesis 5: *Variation in FLFP rates of the oldest working age cohort (55-64 years) is driving FLFP for all working age women.*

Hypothesis 6: The *level of economic development determines the level of FLFP.*

Hypothesis 7: *The more traditional attitudes towards women's work, the les women are economically active.*

Hypothesis 8: *Women's participation in the labour force grows as fertility rates decrease.*

Hypothesis 9: *Length of maternity leave determines the level of female economic activity.*

Hypothesis 10: *Better access to childcare leads to more economically active women.*

Hypothesis 11: *The greater the female educational attainment, the more women are economically active.*

Given that the aim of this thesis is to create a more complex account of causality between the variables that affect FLFP rates, rather than to rule out all of the above socio-economic and structural factors, I expect that some of the hypotheses iterated above will be confirmed while others will be rejected. This is because my model does not need to rule out specific factors, such as education or economic growth, as lacking explanatory power. Instead, it moves beyond conclusions such as 'education and economic growth matter for female employment' in attempting to understand the kind of education and growth that matter and the ways in which they are significant. This is because the literature on the political economy of FLFP and gender equality in the labour market emphasises the complexity of interaction between demand and supply drivers, as well as the role of government policy and institutional settings in mediating these interactions.

Because of this non-linearity and the focus on the interactions between the different components of my theoretical model, defining testable hypotheses that are based on my model is a vexed endeavour. The following hypotheses that will be tested quantitatively and qualitatively in Chapters 6 and 7, stem from my theoretical model:

Hypothesis 12: *Industrial upgrading leads to defeminisation of manufacturing.*

Hypothesis 13: *Industrial upgrading has a negative impact on FLFP.*

Hypothesis 14: *Industrial upgrading inhibits educational expansion.*

Hypothesis 15: *Growth of KIS services leads to higher FLFP rates.*

Hypothesis 16: *The higher the share of KIS employment in the economy, the higher the share of women in KIS.*

Hypothesis 17: *Growth of public sector employment leads to higher FLFP.*

Hypothesis 18: *Educational expansion amplifies the positive effect of KIS on FLFP.*

Hypothesis 19: *Industrial upgrading reduces the share of women in manufacturing by reducing the share of female labour intensive sectors in manufacturing.*

Hypothesis 20: *Female labour intensive sectors of manufacturing did not upgrade because of the political economy of outward processing trade (OPT).*

Hypothesis 21: *State investment in educational expansion was an intentional strategy of Baltic governments to boost the development of the knowledge economy.*

3.4.2 Empirical strategy

In this thesis I combine descriptive statistical analysis, econometrics and co-variational descriptive analysis of case studies, which results in a multi-method empirical strategy (first identified by Lieberman, 2005). Following King, Keohane & Verba (1994) and Hall (2006), my aim is to gather as much empirical evidence to support my theoretical model as possible. Because of the complexity of the proposed causal mechanism, the focus of

empirical testing in this thesis is not only on the successful operationalisation of individual theoretical concepts and components into variables of interest, but also a thick description of what a manifestation of a theory means empirically. In order to achieve this outcome, I nest my qualitative findings into the wider quantitative ones.

I first create a database that contains a number of economic indicators for Eastern Europe following which I use statistical analysis to test the first 11 hypotheses specified in this chapter. While I am able to rule out some of the hypotheses through descriptive analysis only, I test the macroeconomic hypotheses on the drivers of FLFP by conducting an econometric analysis on the entire population of 13 Eastern European countries that are the focus of this thesis (11 Eastern European current EU member states and two candidate countries, FYR Macedonia and Serbia).

I then test the theoretical propositions (hypotheses 12-21) that stem from my model using both econometrics and qualitative co-variational analysis. While my statistical analysis covers the entire population of 13 Eastern European countries, I focus my qualitative analysis on two regions – CEE and the Baltic.

I base my case selection on the following criteria: Since I am interested in a theory-driven mode of explanation, the process of case selection should also be theory driven. According to Blatter & Blume (2008), a case is crucial if it provides strong evidence undermining the dominant theory and supporting an alternative theory. These two regions indeed do that. Therefore, it is the knowledge of the theoretical discussions on the causes of the phenomenon of interest that is the essential ingredient for systematic process analysis rather than the detailed knowledge of the empirical cases. In addition, CEE and the Baltic contain some of the most economically and institutionally developed countries in the region. According to *European Bank for Reconstruction and Development (EBRD) Transition Indicators*, these countries have completed their transitions to capitalism and their institutions correspond to those of fully functioning market economies. This is another reason why I investigate the cogs and wheels of transition and its impact on female labour on them.

My qualitative observations include co-variance between my statistical indicators of interest, but they also include an analysis of the policies and processes that constitute part of the suggested causal mechanism. In order to do that, I use development

strategies from these countries' governments and international organisations analysing developments in the region, such as the OECD, World Bank and the EU. I also rely on thick description from secondary sources that have analysed the region. As argued by Sen (1980), selection of which information to include and which to leave out is an extremely important part of any research, including a descriptive analysis, and it should primarily be driven by theory. In other words, we cannot explain everything so we have to focus on those observations that will help us to learn more about the phenomenon of interest, using theory to guide us.

PART II: THEORY TESTING

Chapter 4.   Female labour force participation trends in Eastern Europe

This chapter presents statistical indicators on the labour market status of women in post-socialist Eastern Europe and demonstrates that there is enough variation in the dependent variable across both time and space to merit closer examination. Apart from FLFP as the main explanandum of this thesis, in this chapter I also analyse the following components of FLFP: the gender gap in labour force participation[15] (GGAP), female employment and unemployment rates and their respective gender gaps ($GGAP_e$ and $GGAP_u$ respectively), and FLFP by age groups – female youth (aged 15-24), prime age women (aged 25-54) and older women (aged 55-64) – and their respective gender gaps.

Additionally, EU and country level strategic plans and European Commission (EC) assessments of member states' labour markets are also consulted in order to determine what constitutes low vs high female labour market performance in the EU. Reference to EU indicators and targets introduces greater objectivity because it provides a benchmark against which I can identify those Eastern European countries that are struggling with low FLFP vs those where female integration into the labour force has been considered a success in the context of EU labour markets.

I assess the extent to which these various components of FLFP are driving the differences in overall FLFP rates across Eastern Europe. Towards this end, this chapter is organised around five hypotheses about the relationships between FLFP and its components, which are then tested using descriptive statistical analysis. The chapter starts with the comparison between FLFP and GGAP of the working age population, with the hypothesis that FLFP and GGAP are inversely correlated so that lower FLFP is associated with higher GGAP and vice versa. A confirmation of this hypothesis would indicate that low FLFP does not merely reflect weaker overall labour market performance, but that it is indeed indicative of higher gender inequality. The second hypothesis is that variation in unemployment rates is driving cross-country variation in FLFP trends. This is an important question because the theoretical model proposed in Chapter 3 assumes that FLFP is driven by employment rates, as it explains different

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[15] The FLFP relative to male labour force participation (MLFP).

FLFP outcomes with the variation in job opportunities that stem from economic restructuring. The third hypothesis focusses on the path dependence argument – it posits that differences in historical FLFP trends during communism have determined FLFP rates during transition. The final two hypotheses suggest that cross-country variation in FLFP for the entire population of working age women (15-64) is driven by: i) cross-country variation in LFP of young women (15-24), and ii) cross-country variation in LFP of older women (55-64).

4.1 Variable definitions and data sources

The key dependent variable for this thesis is FLFP of the working age population (15-64), which is a standardised statistical indicator used in labour market research. Labour market data for the period after 1997 were obtained from Eurostat, the statistical office of the EU, which compiles Labour Force Survey (LFS) statistics,[16] while the labour market data covering the entire period from 1990-2010 were sourced from the International Labour Organization (ILO) Key Indicators of the Labour Market (KILM) database.[17] Historical data on FLFP before the collapse of communism were obtained from the ILO LABORSTA database[18]. Since they are only available for the entire population of women above 15 years of age, they are compared with the FLFP of the same age cohort of economically active women during transition. The labour force, also known as the 'economically active population', comprises employed and unemployed persons, while persons who do not participate in the labour force are referred to as 'inactive'. Figure 4-1 provides a summary of these labour market indicators.

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[16] The LFS is a country level micro-survey of a representative sample of households. All LFS statistics and indicators are based on ILO definitions and concepts.

[17] The series includes both nationally reported and imputed data. It is this series of harmonised estimates that serve as the basis of the ILO's world and regional aggregates of the labour force participation rate reported in the *Global Employment Trends* series and made available in the KILM 7th edition software. Eurostat LFS-based data for Eastern Europe is available only from 1997 onwards.

[18] The LABORSTA is an ILO database on labour statistics.

Figure 4-1. Labour market status of the working age population

Working age population (15-64)

Economically active (labour force) | Economically inactive

Employed (formal and informal) | Unemployed

Wage and salaried workers | Employers | Own-account Workers | Unpaid family workers
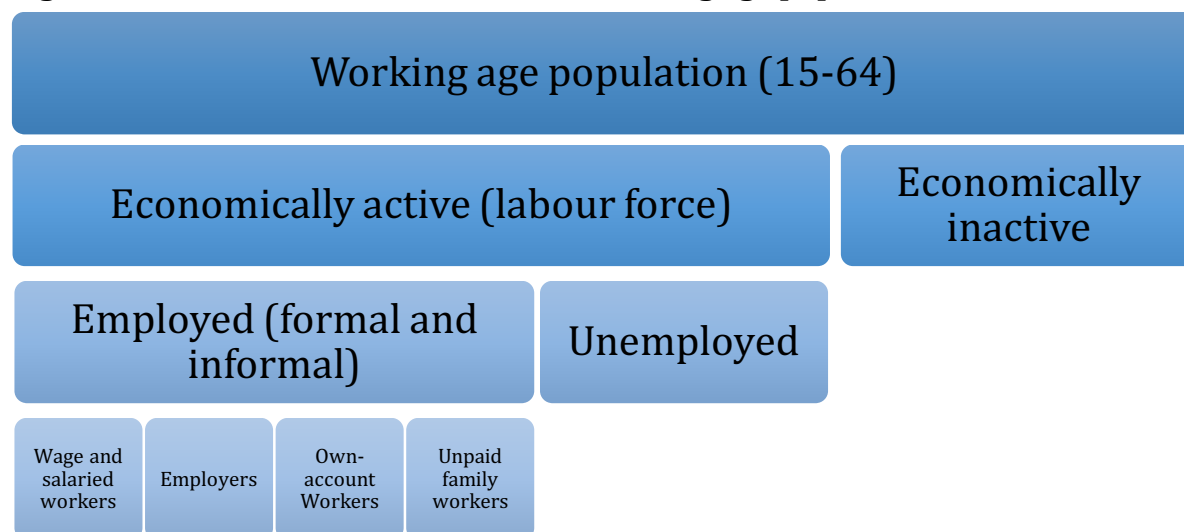
Source: Adapted from Martins & Takeuchi (2013).
Note: The economically inactive population includes students, retired workers, discouraged workers, sick or disabled persons, those caring for family members, and so on.

The LFS indicators are based on the self-declared labour market status of individuals, regardless of whether this status is formal or informal (e.g. people registered as unemployed but working informally would be classified as employed). Such a definition of economic activity allows us to remove the measurement bias that can be found in official unemployment statistics, where people who otherwise work might have an incentive to work informally while being registered as unemployed and receiving public funds. Therefore, employed persons include unpaid family members, the self-employed and those employed in the informal sector of the economy, while unemployed persons refer only to those persons actively seeking work. Each of these labour market categories is also available disaggregated by gender and by other demographic characteristics.

Apart from LFP indicators, I also examine the relative contribution of unemployment[19] and employment rates[20] to the observed trends. As shown in Chapter 2, academic literature has focussed on FLFP as the preferred indicator for labour market status of women. This is because FLFP is a more suitable indicator for analyses over longer time periods because, unlike employment and unemployment rates, it is not as susceptible to

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[19] Unemployment rate is calculated by dividing the number of unemployed individuals by all individuals currently in the labour force.
[20] Employment rate, also known as employment-to-population ratio, represents the share of the population that has a job.

business cycles. On the other hand, policy documents, including EU strategies such as *Europe 2020*, focus on employment rate targets, which the member states are expected to achieve.

Furthermore, the theoretical model, which is the backbone of this thesis, posits that the observed differences in FLFP are the result of variation in women's employment levels. The variations are determined by the countries' differing economic restructuring trajectories. In order to strengthen the argument that female employment is the key driver of cross-country variation in FLFP, this thesis needs to rule out the possibility that variation in unemployment rates is driving these trends. Namely, if some countries in my sample are shown to have high female unemployment levels while others do not, one could conclude that the cross-country variation in FLFP primarily stems from these differences in unemployment.

The thesis analyses the above indicators for 13 Eastern European countries that include 11 EU member states[21] and two candidate countries, FYR Macedonia and Serbia.[22] Labour market data on Eastern Europe, disaggregated by gender only, are available for most countries from 1990 onwards, while the more disaggregated data (by age, educational attainment and sector of activity) are available from 1997. It is also worth noting that Eastern European statistical systems were subject to numerous changes in order to harmonise their surveys with the EU throughout the 1990s. By 2000, current Eastern European member states which were candidate countries at the time,[23] had harmonised their statistical methodologies and reporting requirements with the EU, so labour force data from 2000 can be considered fully compatible with EU standards (European Commission, 2004). The SEE countries lagged behind the Eastern member states that joined the EU in 2004, but by 2000, with the end of wars in former Yugoslavia, all countries in the region had shown considerable effort to harmonise their statistics and policy targets with the EU.

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[21] These include Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

[22] Due to data availability and comparability constraints, particularly for the more nuanced labour market indicators, I do not extend the analysis to other Eastern European countries.

[23] Baltic countries: Estonia, Latvia and Lithuania; Central and Eastern European countries: Czech Republic, Hungary, Poland and Slovakia, as well as Slovenia.

Finally, a couple of issues determine the end year of this analysis. Firstly, the Great Recession, which started in 2008, had a significant impact on Eastern European labour markets. Therefore, it was advisable to end the analysis in 2008 in order to dissociate the impact of the crisis on these countries' labour markets from the process of transitional economic restructuring. Changes in FLFP are barely visible between 2008 and 2010, the first two years of the crisis (see Graphs A-1 and A-2 in Appendix A4). In its early stages, the crisis led to churning between employment and unemployment categories, as it forced movement from employment to unemployment for some, because they lost their jobs and vice versa for others, because they were forced to take jobs at lower wages (see Graphs A-5 and A-6 in Appendix A4). It was only later in the crisis that FLFP was affected as in some countries the long-term unemployed moved into inactivity while in others the economically inactive were forced to seek any kind of job opportunities once they exhausted their coping mechanisms.

As shown in the sections below, sharp changes in employment and unemployment rates, which affected some Eastern European countries, did not affect FLFP levels until later into the Great Recession so some of the FLFP analyses can be conducted up to 2010, when the impact of the crisis on this indicator became noticeable. The second reason why it is advisable to interrupt the analysis in 2008 is the break in the series of employment data by sector, which are essential for testing the empirical validity of my theoretical model in Chapters 6 and 7. This break in the series occurred because Eurostat applied a different classification of sectors of activity from 2007 onwards.[24] For these two reasons, the empirical analyses presented in this, and the following three chapters, mostly end with 2008.[25]

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[24] The NACE Rev. 2 classification as discussed in greater detail in Chapter 6.
[25] With the exception of some econometric analysis in Chapter 5 which include a longer time frame. The robustness of those results is verified by excluding some of the problematic years from both the beginning and end of the period.

4.2 The relationship between female labour force participation and the gender gap in labour force participation in post-socialist Eastern Europe

The following hypothesis is tested in this section:

H1: *Higher FLFP rates are associated with lower gender gaps in LFP and vice versa.*

Graph 4-1 shows that the higher the FLFP in 2008 the lower the GGAP. These data indicate that men in countries with low FLFP have much better access to the labour market than women and that low FLFP does not merely reflect low labour market opportunities for both genders. In the opposite direction, this trend also indicates substantially less labour market disadvantage for women in those countries where more women are economically active.

It is a stylised fact in labour economics that women enter into the labour market in greater numbers in those countries where overall employment is higher. As new opportunities arise, there are not enough unemployed men to fill them so a greater number of women get activated. However, political economy literature tells us that some labour markets can be more or less female friendly, regardless of the overall economic activity levels in a country. For example, while the correlation between FLFP and the gender gap in LFP is -0.83 at 1% significance level in 2008 for all 13 countries this thesis analyses (and -0.78 for the entire period of observation), there is no significant relationship between the two variables within Central and Eastern Europe (Czech Republic, Hungary, Poland and Slovakia). The Czech Republic and Slovakia have both a higher GGAP as well as higher FLFP than Poland and Hungary. In other words, in countries that have struggled with integrating women into the labour market, the rift between male and female labour market opportunities is even wider where overall FLFP is higher, and vice versa. This indicates that greater absorption of women into labour markets that are characterised by higher LFP rates does not occur automatically.

Graph 4-1. FLFP (15-64) vs GGAP (15-64) in 2008
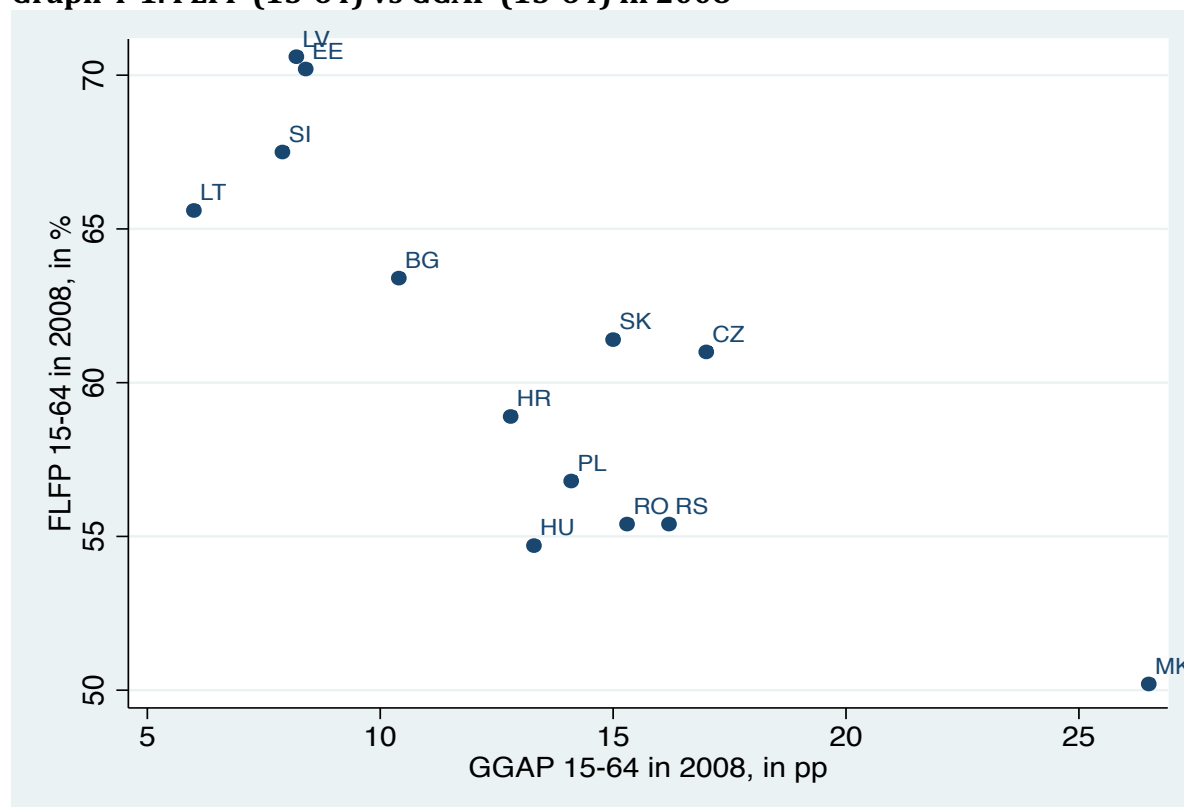
Source: Eurostat.
Notes: 1) Gender gaps are defined as positive if they disadvantage women in comparison to men, and negative if men are disadvantaged. Convergence of the gender gap towards zero represents gender equality within the sphere a particular indicator measures. 2) Data is not shown for FYR Macedonia because it is a significant outlier.

Furthermore, in some Eastern European countries women's labour market opportunities worsened vis-à-vis men's during the 2000s, while in others their opportunities improved relative to men's. Graph 4-2 illustrates gender gap changes over time. Some of the countries with high gaps saw growth of their gender gaps over time (the Czech Republic, Slovakia, Poland and Romania), which indicates that female labour market disadvantages have grown in these countries during the 2000s. [26] The LFS data shows that this change came from the growth of the gender gap in employment, i.e. in these countries men benefited from disproportionately more employment opportunities than women throughout the 2000s.

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[26] I look at the change in levels between 2000 and 2008 because, as explained in Chapter 1 as well as in the previous section of this chapter, those countries where FLFP rates grew during the 2000s were at their lowest FLFP levels in 2000, while some countries rates continued to drop throughout the first decade of the 21st century. The main interest of this thesis, therefore, is to understand the factors that led to some countries being more or less successful in integrating women into their labour markets during the 2000s.

Other countries with high gender gaps in LFP, such as Hungary, Croatia and Serbia, saw them drop during the same period. Labour force data indicates that this improvement of the female position must have come from the relative worsening of male labour market opportunities, as FLFP did not grow significantly during this period. Finally, the Baltic countries, which had rather low GGAPs saw their even further reduction during the same period, while Bulgaria and Slovenia saw little change in their GGAPs over time.

Graph 4-2. GGAP (15-64) in 2008 vs change in GGAP (15-64) between 2000 and 2008
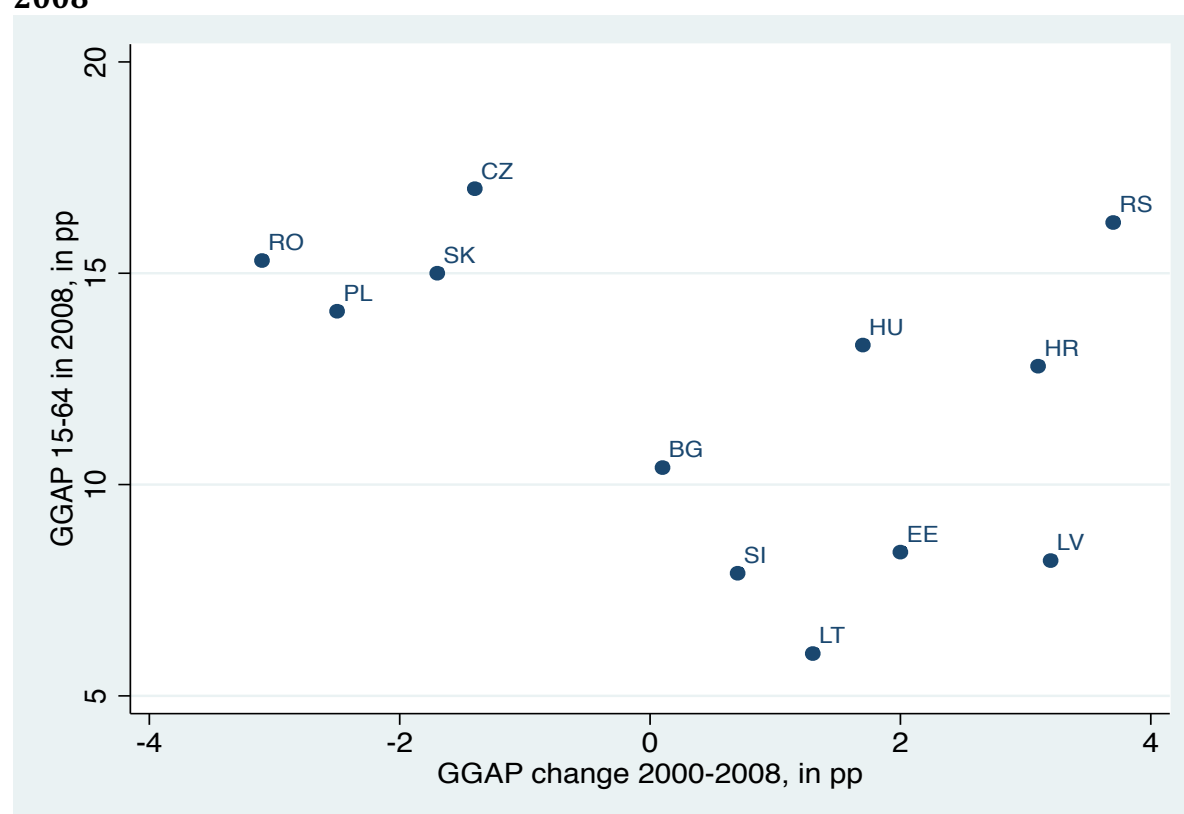
Source: Eurostat.
Notes: 1) Gender gaps are defined as positive if they disadvantage women in comparison to men, and negative if men are disadvantaged. A negative change on the x-axis represents the worsening of the GGAP, while a positive change represents an improvement for gender equality in the labour market. 2) Data is not shown for FYR Macedonia because it is a strong outlier, with the GGAP in 2008 at around 34 percentage points (pp).

Based on this analysis, I conclude that the variation in FLFP across the region is not simply a mirror image of general labour market trends and that explaining this statistically observed divergence in female labour market performance represents a viable research project. I am not able to fully confirm H1 because the variation between FLFP and GGAP is not fully negatively correlated in CEE and the Baltic, which are the core countries where I focus in the qualitative part of my empirical analysis (Chapter 7).

This is why I analyse both FLFP and GGAP as dependent variables in the core part of my empirical analysis.

4.3 Female unemployment and employment trends in post-socialist Eastern Europe

In this section, I test the following hypothesis:

H2: *Unemployment rates are driving variation in FLFP.*

This section surveys data on both unemployment and employment, in order to determine the extent to which each of them is influencing FLFP. I first offer a general overview of unemployment and employment rates in the focus countries, followed by a more in-depth analysis of the changes in these variables during the 2000s. Based on my analysis, I reject the null hypothesis that the variation in unemployment rates can explain the variation in FLFP. Because the analysis shows that employment trends are driving most of the variation in FLFP, I supplement this descriptive statistical analysis with an overview of EU strategic documents which provide a benchmark for high and low levels of female employment in the member states.

With the exception of FYR Macedonia and Serbia, there was no significant variance in female unemployment rates across the analysed countries in 2008, with the highest rate of 11% and the lowest of 4.7% in Romania (Graph 4-3). The variation is even smaller when the Baltic countries with high FLFP are compared to CEE countries with substantially lower FLFP rates. Furthermore, gender gaps in unemployment ($GGAP_u$) were very low in the entire region in 2008, ranging from -2 percentage points (pp) in Romania to positive 3.9 pp in Serbia (Graph 4-3).

Given the much greater variation in both employment levels and $GGAP_e$ between the genders in 2008 (Graph 4-4) than in unemployment and $GGAP_u$ (Graph 4-3), I argue that levels of female employment in 2008 define most of the variation in FLFP rates in the region at the end of the period of observation. This is also the year when the variation in FLFP rates across the region is the highest.

Graph 4-3. Female unemployment and GGAP$_u$ in 2008
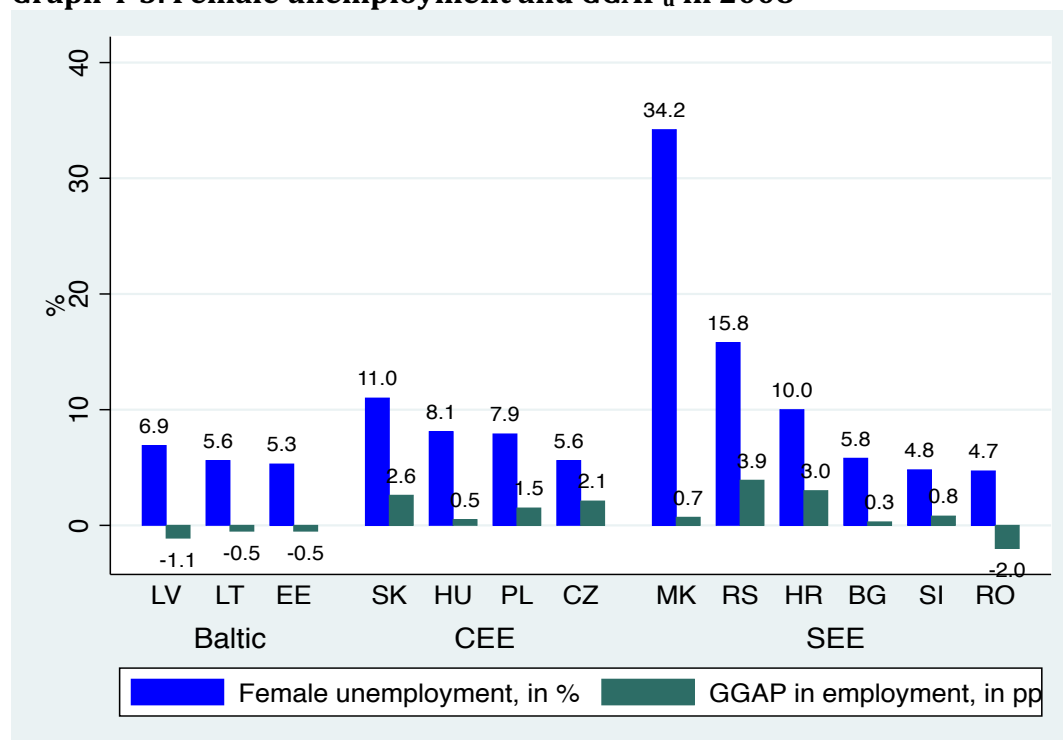
Source: Eurostat.
Note: Gender gaps are defined as positive if they disadvantage women in comparison to men, and negative if men are disadvantaged. Convergence of the gender gap towards zero represents gender equality within the sphere a particular indicator measures.

Graph 4-4. Female employment and GGAP$_e$ in 2008
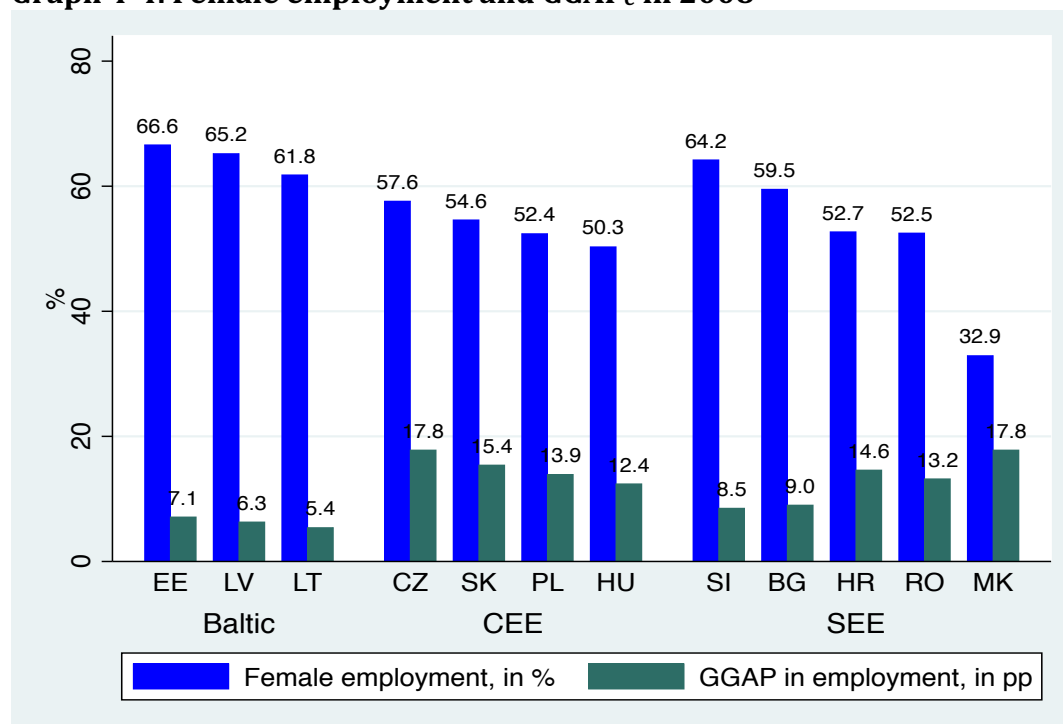
Source: Eurostat.
Note: Gender gaps are defined as positive if they disadvantage women in comparison to men, and negative if men are disadvantaged. Convergence of the gender gap towards zero represents gender equality within the sphere a particular indicator measures.

When it comes to changes over time, female unemployment rates in CEE and the Baltic dropped to single digit figures by 2008, with the exception of Slovakia, where they also declined during the 2000s to 11% in 2008. Female unemployment also dropped in SEE during the same period, but it remained at particularly high levels in FYR Macedonia in 2008 (34.2%), followed by the relatively high female unemployment rate in Serbia (15.8%).

The significant decreases in female unemployment rates during the 2000s could have translated into higher female employment in some countries and higher female inactivity in others. The total impact of these decreases on FLFP depended on whether the reductions in female unemployment were more than compensated with concurrent increases in female employment or not. A more detailed analysis of data during the 2000s reveals that the higher the female unemployment rate in a country in 2000, the bigger its drop by 2008 (see Graph 4-5).

In countries that concurrently showed stagnant female employment rates, these drops in unemployment represented discouraged female workers who gave up their attempts to get jobs and moved into inactivity. These countries would have also witnessed drops in FLFP. Most notably, Poland saw a 10.2pp drop in female unemployment during the observed period (18.1% to 7.9%), while its female employment grew by 3.5pp (48.9% to 52.4%). Since the pool of employed is commonly larger than that of the unemployed, this churning of labour market status among Polish women resulted in a 2.5pp overall drop in FLFP between 2000 and 2008 and a concurrent rise in female inactivity.

In contrast to this trend observed in Poland, Latvia, for example, saw a 6.5pp drop in female unemployment during the same period (13.4% to 6.9%). Female employment in Latvia concurrently grew by 11.6pp (53.8 to 65.4%) and its FLFP consequently grew by 8.8pp (61.8% in 2000 to 70.6% in 2008). The data presented in these graphs illustrate a range of scenarios and substantial variety in these trends.

Furthermore, since FLFP was slightly declining in the Czech Republic and Slovakia during the 2000s, the steep drops in female unemployment imply that women in these two countries were withdrawing from the labour market into inactivity. They have also done so much more than men, since the $GGAP_e$ in the Czech Republic in 2008 is as high as the gap in FYR Macedonia, and they are closely followed by Slovakia.

Graph 4-5. Female unemployment in 2000 vs change in female unemployment between 2000 and 2008 (left panel) Female employment in 2008 vs change in female employment between 2000 and 2008 (right panel)
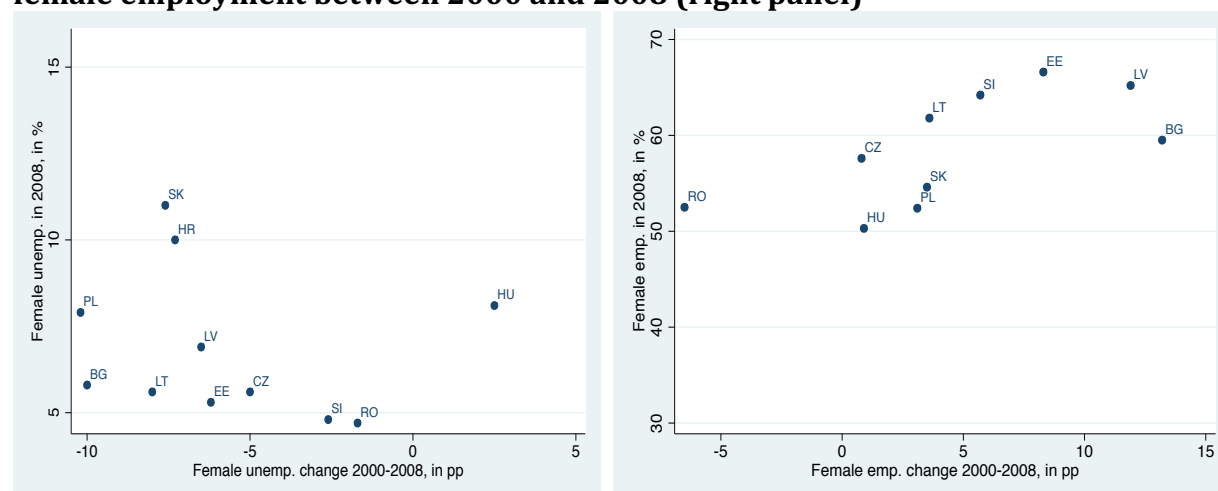
Source: Own calculations from Eurostat data.
Note: 1) Female unemployment data for 2000 is missing for Serbia, while Macedonian female unemployment rate of 34% is an outlier that did not fit into the graph. 2) Female employment data for 2000 is missing for Croatia, FYR Macedonia and Serbia.

Hungary is a strong outlier in the observed group of countries, since both unemployment and employment went up during the observed period, so FLFP went up as well, albeit little and from a very low baseline. Women may have been entering the Hungarian labour force due to economic pressures to obtain a job rather than because their labour market opportunities increased. In fact, male unemployment in Hungary also increased in the same period, due to the fiscal crisis and austerity politics during the mid 2000s, which may have led to greater pressure for women's economic activation to compensate the loss of male earnings. When it comes to SEE, employment grew everywhere except Romania, where it decreased (see Graph 4-5).

Table 4-1 offers a stylised summary of these trends which shows that most countries experienced decline in female unemployment rates between 2000 and 2008, while their FLFP increases during the period of observation can be attributed to growth of female employment which was greater than their unemployment declines.

This pattern of employment driving growth of FLFP in some countries and its decline in others that stems from the data is also acknowledged in a wide range of EC reports and country reform strategies, which were produced after 2010 to prepare the countries for the implementation of *Europe 2020*. Specifically, low female participation in the labour market was identified as a core challenge in the Czech Republic, Hungary, Poland,

Romania and Slovakia (European Commission 2014b, 2014d, 2014g, 2014h; Official Journal, 2011). Reports on the Baltic countries, Bulgaria and Slovenia, do not identify low FLFP or low female employment as an issue (European Commission 2014a, 2014c, 2014e, 2014f, 2014j). The reports are not available for Croatia, FYR Macedonia and Serbia. Croatia only joined the EU in 2013, while the other two countries are candidates so they do not have the requirement to report to the EC on their progress vis-à-vis *Europe 2020* targets. These countries' governments, nonetheless, have produced national employment strategies with the aim of harmonising their labour market policy targets with those of the EU and these strategies have consistently underlined low FLFP as a major challenge for both of them (Government of Serbia, 2010; World Bank & European Training Foundation, 2008).

Table 4-1. Summary of female unemployment, female employment and FLFP changes between 2000 and 2008 and FLFP level in 2008 (based on EC reports)

Country	Female unemployment	Female employment	FLFP	FLFP level
Bulgaria	-	+	+	high
Croatia	-	+	+	low
Czech Republic	-	+	-	low
Estonia	-	+	+	high
Hungary	+	+	+	low
Latvia	-	+	+	high
Lithuania	-	+	-	high
FYR Macedonia	-	+	+	low
Poland	-	+	-	low
Romania	-	-	-	low
Serbia	-	+	+	low
Slovakia	-	+	-	low
Slovenia	-	+	+	high

Source: Author's adaptation of Eurostat data and EC reports.

Figure 4-2 shows a map of female employment across Europe in 2008, at the onset of the Great Recession. While the more recent Eurostat indicators focus on the population aged between 20-64 instead of 15-64 (due to almost universal access to secondary education and low employment among teenagers), many Eastern European countries did not start publishing labour market statistics for this age cohort until late 2000s. Because of these issues with harmonisation of statistical indicators, this thesis relies on a broad range of labour market indicators, while ensuring that all cross-country comparisons are conducted using the same indicators across the board.

Figure 4-2. Female employment rate 20-64 (%), 2008

Legend

24.9 - 55.2	55.2 - 62.5	62.5 - 68.5
68.5 - 73.1	73.1 - 80.4	Not available

Minimum value:24.9 Maximum value:80.4
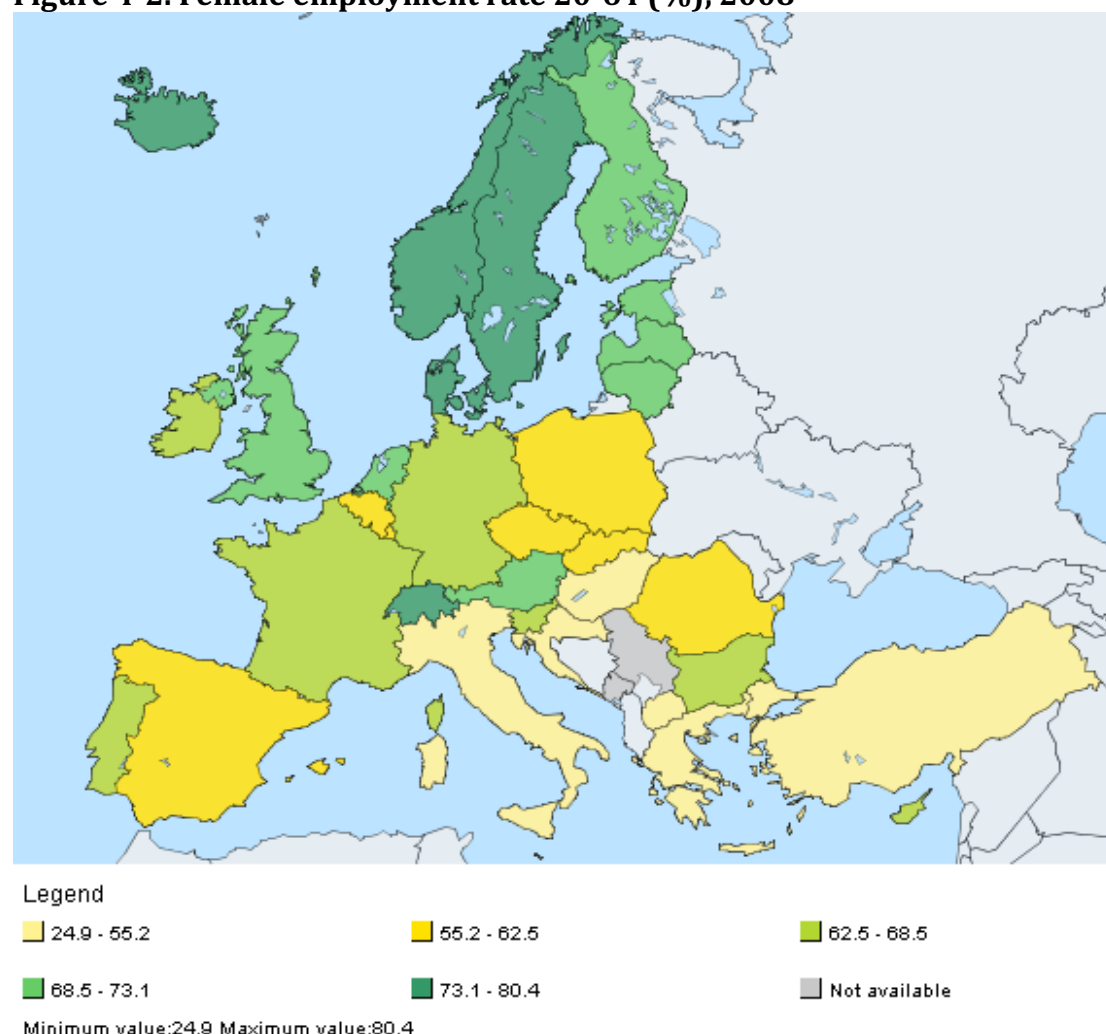
Source: Eurostat.

Figure 4-2 indicates that the level of female employment in the Baltic countries was high in 2008 and within the range of that found in Austria, Finland and the UK. Slovenia and Bulgaria followed closely, with their female employment rates being within the same range as in France and Germany, while CEE countries, and in particular Hungary, lagged behind. Hungary's range was at the level of South Eastern European EU neighbouring states: Croatia, Serbia and Macedonia.

Furthermore, female labour market opportunities have been high on the EU policy agenda ever since the launch of the *Lisbon Strategy* in 2000. *Europe 2020* requires the EU member states, EC and the European Council to produce regular reports on the progress of *Europe 2020* goals, with employment being a high priority.

The EC identified as laggards those EU countries where the female employment rate (20-64) was below 60% as well as those countries where the gap between male and female employment was above the EU average at the time (European Commission, 2010). Because most of the EU countries saw a general employment slump since the onset of the Great Recession in 2008, I can apply the same threshold to 2008 data. In fact, due to the stronger labour market performance in 2008 than in 2010, this is a rather strict threshold to apply to 2008 data and countries that fell behind in 2008 can be considered as significant laggards even during economically prosperous times. For example, the EU-27 average gender gap in employment (20-64) in 2008 was 15.1pp, declining to 12.8pp in 2010, because of the disproportionate negative impact on male employment during the early years of the crisis. The EU-27 average female employment rate (20-64) dropped slightly from 62.8% in 2008 to 62.3% in 2010.

Eastern European countries in which female employment rate (20-64), was below 60%, the EU-defined threshold, were the following: FYR Macedonia (36.2%), Hungary (54.8%), Croatia (57%), Poland (57.3%) and Romania (57.3%).[27] Slovakia had barely crossed the threshold in 2008 with its female employment being at 60.3%, and the Czech Republic did not perform much better at the rate of 62.5%. In contrast, at a substantial 72.9%, Estonia had the highest level of female employment in the region in 2008.

When it comes to the gender gap in employment rates (20-64), the following Eastern European countries had a gap higher than the EU-27 average in 2008: Croatia (15.9pp), Poland (15.7pp), Slovakia (17.1pp), Czech Republic (19.5pp) and FYR Macedonia (20pp).[28] The lowest gap of 6.9pp in the region in 2008 was found in Lithuania.

While some countries have performed more poorly on one indicator of female labour market opportunities and some on the other, it is clear that the Baltic states, Bulgaria and Slovenia, are characterised by superior performance in the sphere of female economic activation in comparison to CEE and most SEE states that are part of this

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[27] Ranked from lowest to highest. While employment data for the age cohort 20-64 were not available for Serbia in 2008, since its level for the population cohort 15-64 was 55.4%, it is plausible to assume that Serbia was also below this EU threshold.

[28] Ranked from lowest to highest. While employment data for the age cohort 20-64 were not available for Serbia in 2008, since its employment gap for the population cohort 15-64 was 16.2pp, it is plausible to assume that Serbia was also above the EU threshold of 15.1pp.

analysis. It is also additionally striking that these post-socialist laggards, that have a strong legacy of female employment during socialism, have been performing worse than most Mediterranean EU member states that have historically suffered from low economic activation of women.

In conclusion, the above analysis rejects H2, which posits that variation in FLFP is predominantly driven by the variation in unemployment rates. The analysis shows that the variation is primarily driven by variation in female employment and that the exceptionally high female unemployment rates during the early stages of transition in the region in some cases translated into inactivity while in others it converted into new employment opportunities for women.

4.4 Path dependence of female labour force participation from socialism

The third hypothesis this chapter addresses is the following:

H3: *Differences in historical trends in FLFP during communism correspond to the divergence in trends observed during post-socialist transition.*

As discussed in the introductory chapter of this thesis, Eastern European countries under communism were characterised by higher levels of FLFP than the capitalist economies that were at the same or higher levels of economic development (Chase, 1995; World Bank, 2011; Graph A-8 in Appendix A4 for a regional comparison). This was the case due to the strong insistence of communist regimes on female work and the professed equal treatment of men and women in the labour market (Lobodzinska, 1995, p. 23). Then, while FLFP started to pick up in the rest of the world in the last decades of the 20th century with the collapse of communism, women started to flow out of the transitional countries' labour markets. In some of these countries women remain poorly represented in the labour market to this day while in others women have been successfully reintegrated.

According to the ILO LABORSTA database, in 1980 Czechoslovakia, Poland and Hungary had relatively high rates of women's labour force participation, especially in comparison to capitalist economies. Czechoslovakia had a FLFP rate of 60.8% for the female population 15+, while Poland followed closely behind with 58.7%. The rate in Hungary was 50.2%. These rates were either maintained or slightly reduced by 1990. The first available data for the Baltic countries is from 1989 for FLFP for women aged 15+: Lithuania stood at 60.2%, Latvia at 64.1% and Estonia at 64.6% (Graph 4-6).

According to Graph 4-6, FLFP recovered almost to the levels they had before the collapse of communism in Bulgaria, Estonia and Latvia. In Lithuania trends appear to have remained almost stable throughout the period of observation. Slovenia saw growth of FLFP during transition, which is explainable by the fact that Yugoslavia did not force its population into employment so FLFP was at lower levels during socialism than in other socialist countries. Finally, FLFP continued to decline throughout transition in the Czech Republic, Slovakia and Poland, while slight improvement was observed in Hungary during the 2000s, albeit at lower levels of FLFP than in the rest of the region.

Graph 4-6. FLFP (15+), 1980-2008
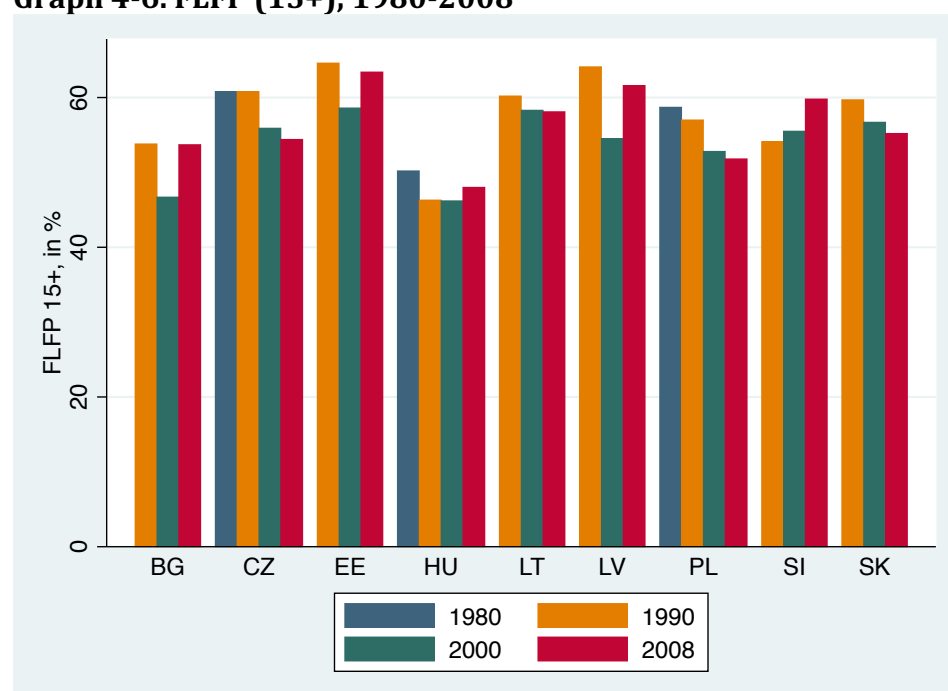
Source: ILO LABORSTA database.
Note: Percentage of women over the age of 15 who reported themselves economically active. There are no comparable data for the entire period for working age women only (15-64). 2) 1990 data on the Baltic countries refers to 1989, because 1990 data are not available. 3) ILO data are not available for the period before the end of communism for Croatia, FYR Macedonia, Romania and Serbia.

Apart from the secondary literature that is underlining high FLFP under communism, the path dependence argument contains further flaws. For example, the similar levels of FLFP in the Czech Republic and Slovakia throughout transition could be attributed to these countries common Czechoslovakian heritage. Nonetheless, analyses of the structure of their FLFP rates, like the one presented in the previous section of this chapter, show that Slovakia has had substantially higher female unemployment and lower female employment than the Czech Republic. Further analyses in the next three chapters will reveal differences in the sectoral structure of these countries female labour force. This indicates that their similar FLFP rates are accidental, since their structure is entirely different.

Furthermore, accepting a path dependence argument implies that neither policy nor economic structure, both of which have changed substantially since the fall of communism, can affect women's labour market opportunities. A vast literature surveyed in Chapter 2 indicates that both are very important drivers of women's economic opportunities. In fact, while it may not always be clear which policies affect women nor the nature of their impact, we have witnessed such major shifts in women's labour market status during the past century, that it would be difficult to argue that FLFP is 'sticky' in the long run despite secular and policy changes. Additionally, in the next chapter, the hypothesis that differences in family values and attitudes are driving cross-country variation in Eastern Europe is rejected, which provides further evidence that path dependence is not a compelling explanans for the observed variation in FLFP during transition.

In rejecting path dependence, I concur with Amartya Sen's explanation when asked why he underplayed the historical heritage in describing Kerala's success in gender equality:

> [T]o put great emphasis on historical luck (in having a 'matrilineal tradition' of property rights over centuries) may well be unduly discouraging for what can be done here and now. That is one reason for highlighting state policy, as you rightly say I do, but state policy can be concerned not only with education and other measures of women's empowerment, but also with reforming ownership and inheritance rights in favor of women, which too can enhance the agency and power of women. I should perhaps mention in this context, that when India became

independent in 1947, in the newly formed state of Kerala (based mainly on the ground of a shared language, Malayalam), the bulk of the population came from the two 'native states' outside the British empire (Travancore and Cochin), but another bit came from the old province of Madras. Malabar – from British India – was immensely backward socially in comparison with Travancore and Cochin, including in the role of women. But a uniform state policy, with particular emphasis on helping Malabar to 'catch up', has made, by now, the different parts of Kerala nearly indistinguishable from each other in terms of social development. To rely too heavily on the luck of having a "favorable history" can be unduly pessimistic. (Sen et al., 2003, p.325)

In conclusion, I reject H3 that the cross-country variation in FLFP rates is a mere reflection of variation in those countries' FLFP rates during communism because there is substantial theoretical and empirical ground for the rejection of this hypothesis.

4.5   Demographic structure of economically active women in post-socialist Eastern Europe

The following two hypotheses are examined in this section:

H4: *Variation in FLFP rates of the youngest working age cohort (15-24 years) is driving FLFP for all working age women.*

H5: *Variation in FLFP rates of the oldest working age cohort (55-64 years) is driving FLFP for all working age women.*

Working age populations whose age spans from 15-64 years consist of different age cohorts. The three age cohorts that are most commonly differentiated and whose labour market outcomes are typically analysed separately are: youth (15-24), prime age workers (25-54) and older workers (55-64). Youth activity rates are usually substantially lower than for the rest of the working age population, because many of those aged 15-24 are in education and are therefore not economically active. In fact,

Eurostat has recently started defining the working age population as 20-64 years of age due to the now almost universal access to secondary education across the EU.[29]

I am interested in the influence of female youth economic activity on FLFP because youth inactivity is one of the most widespread phenomena across the world today. If low FLFP rates can be explained by low economic activity of young women, policy implications are different than if the problem of low FLFP is spread out more evenly across the entire working age female population. While policies that tackle youth inactivity and unemployment focus on reducing the number of the so-called NEETs (those not in education, employment or training), employability of the older cohorts of women is determined by a multi-pronged approach, which should also include family policy.

Another salient issue in the labour market literature is the decreasing LFP of older workers. This is an issue that has both a supply and a demand side to it. Older workers are more likely to have obsolete skills, which makes them less appealing to employers. They are also more likely to be discriminated against in the labour market and early retirement is often used as a counter-cyclical measure by some governments. This was the case with Hungary, for example, which pursued an early retirement policy in order to pacify the jobless population during the early stages of transition (Vanhuysse, 2006). While the retirement age for women in the 13 Eastern European countries of focus for this thesis was around 60 years of age towards the end of the 2000s, they are incrementally increasing this threshold to equalise women's retirement age with men's over the next decade.

Although the literature does not identify differences across demographic cohorts as important drivers of FLFP, demographic trends are an implicit consideration in discussions on labour market trends. The higher presence of both young and older women in those job markets where women work more is to be expected because the vibrant labour markets with increased job opportunities are supposed to be more inclusive. On the other hand, LFP and employment of the prime age population (25-54) is commonly used as the measure of labour market health. Furthermore, the low labour

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[29] I do not use this indicator because I am interested in a longer time period for which only data for the 15-64 age cohort are available.

market activity of prime age women is often associated with the inability of women to balance family and work responsibilities. While the role of policies that influence the work-life balance in Eastern Europe is examined in Chapter 5 of this thesis, this particular analysis of the demographic structure of the economically active women will help me to understand which parts of the female demographic are most affected by the overall low FLFP in some of the countries from the sample.

The correlations between the LFP of the entire working age population of women on one hand and the young and older women on the other are examined in Graph 4-7. With a coefficient of 0.7 at 1% statistical significance, FLFP (15-64) was relatively highly correlated with youth FLFP in 2008 (Graph 4-7, left panel).[30] Nevertheless, as seen from the graph, the Baltic countries are predominantly driving this relationship. A number of countries in our sample have a similar range of youth FLFP across a rather significant span of FLFP (15-64).

Graph 4-7. FLFP (15-64) vs FLFP (15-24) (left panel) and vs FLFP (55-64) (right panel) in 2008
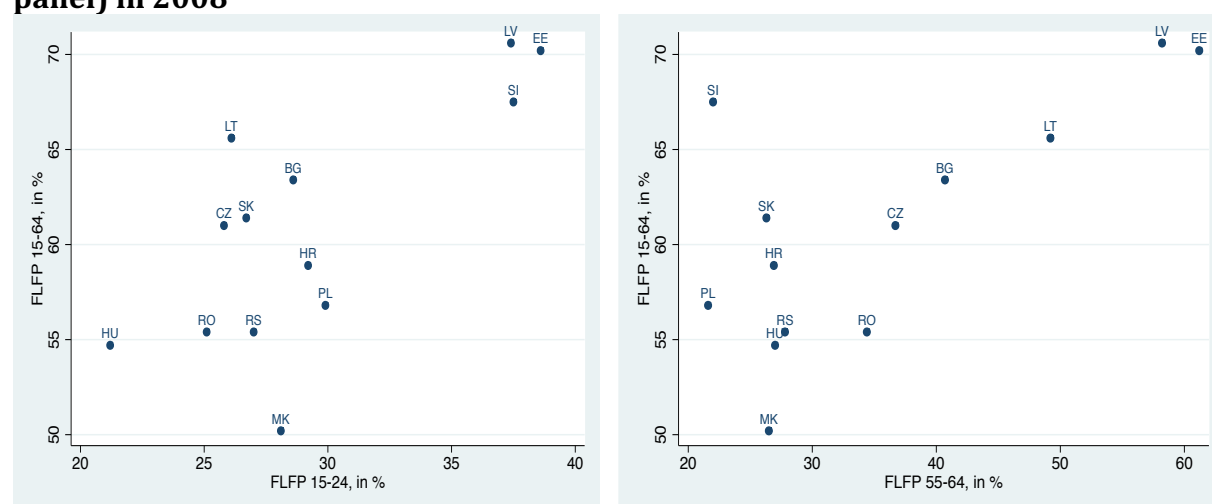
Source: Eurostat.

The correlation coefficient between FLFP (55-64) and FLFP (15-64) was 0.73 in 2008, at 1% statistical significance. Slovenia is a strong outlier in this relationship with older women, while the rest of the countries fit well into the strongly positive correlation between the two variables (see Graph 4-7, right panel). Employment and

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[30] The data are shown for 2008 because this is when the FLFP differences between the countries were the highest throughout the period of observation.

unemployment data disaggregated by age indicate that most of the older women are in fact in employment rather than unemployed.

While this first level of analysis indicates that LFP of older women is driving more of the FLFP variation than the LFP of the young women, these trends may be even better understood if FLFP rates are compared by age groups in 2008, which are shown in Graph 4-8. The FLFP of prime age women (25-54) in the Baltic countries is higher than in CEE, but it is highest of all countries in Slovenia. On the other hand, FLFP of older women in the Baltic is much higher than in CEE as well as in most of SEE (with the exception of the Czech Republic which has a relatively high FLFP for older women). The data also show higher FLFP among youth in Slovenia, Estonia and Latvia, though not in Lithuania, in comparison to FLFP of youth in CEE and the rest of SEE. Nonetheless, since the cohort of prime age women is 60% of the working age population, while the young and the older women make up about 20% of the working age population each (see Graph A-9 in Appendix A4), differences between LFP rates of prime age women contribute to the overall FLFP trends three times more than either of the other two cohorts.

Graph 4-8. FLFP by age group, 2008

Source: Eurostat.

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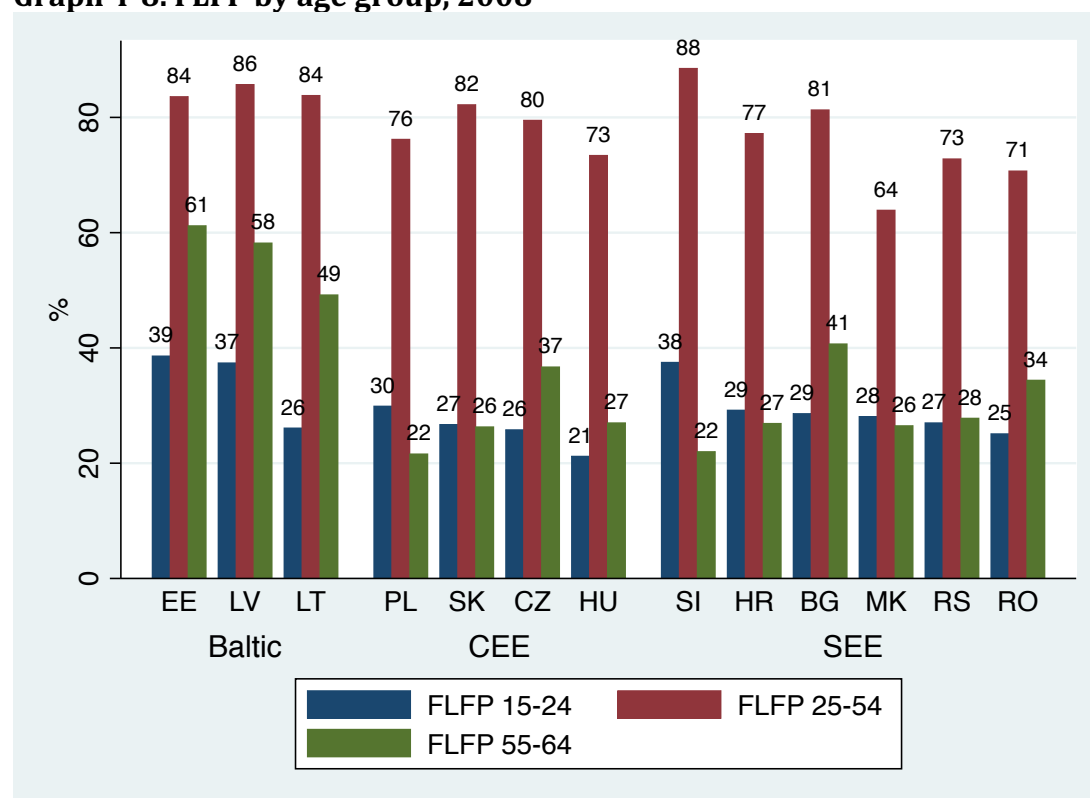
The cross-country differences between LFP of young and older women shown in Graph 4-8 are around three times smaller in terms of their contribution to total difference in FLFP than the differences between prime age women. In other words, a three-point gap between prime age women's FLFP makes an equivalent contribution to the total difference in FLFP as a 9-point gap between the FLFP of the older or of the young women. For example, a 22pp difference in FLFP (55-64) between Lithuania and Hungary is the equivalent of a 7pp difference in FLFP of prime age women in these two countries. However, their actual difference in FLFP (25-54) is 11pp, which means that the difference in FLFP of prime age women is more pronounced between these two countries than the difference between the older women.

In the case of SEE, almost entire variation in FLFP across the countries in 2008 comes from variation in prime age women. In Bulgaria and Romania, FLFP of older women is also somewhat higher than in the former Yugoslav countries. Finally, gender gaps among the young are very similar across all 13 countries except in FYR Macedonia, so they are not driving the gaps I observe in the general population (see Graph A-10 in Appendix A4).

Graph 4-9. FLFP (15-24) in CEE and Baltic (left panel) and SEE (right panel), 1990-2010
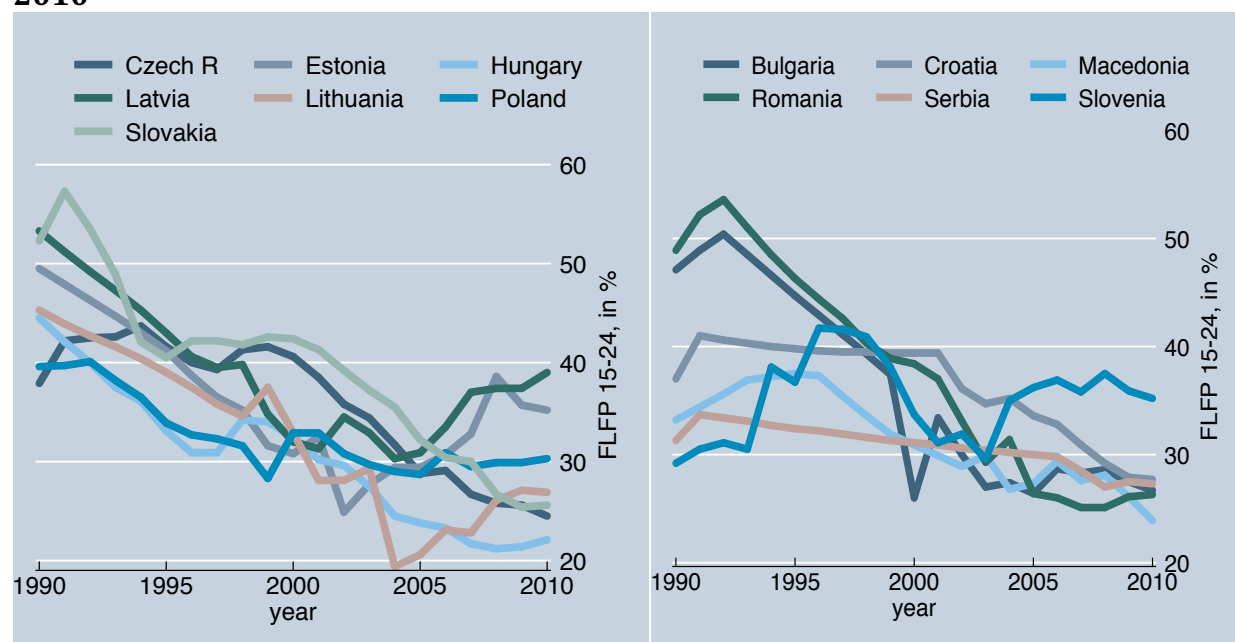
Source: Eurostat.
Note: The range of values on the Y-axis is not identical in the two graphs. This is because equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

When it comes to trends over time, FLFP of young women has declined significantly across the entire region during the observed period 1990-2010 (Graph 4-9). The only three countries where a slight increase in the rates can be observed from 2005 onwards are Estonia, Latvia and Slovenia.

The FLFP of older women (55-64) has increased more in the Baltic over the years than was the case in CEE (Graph 4-10, left panel). Furthermore, LFP of older women has grown substantially in Bulgaria, while it has grown at a slower rate in the rest of SEE (except for Romania, where it has fallen).

Nevertheless, although the share of older women in total employment has grown most significantly in the Baltic countries, there has also been a sharp increase in activation of older women in the Czech Republic, and even in Hungary, which boasts very low total female economic participation. At the same time, the lowest share of older women in total FLFP can be found in Slovenia, which generally has high levels of female FLFP. Therefore, it seems that variations in LFP of older women can only explain a small fraction of the diversity in FLFP observed across these countries.

Graph 4-10. FLFP (55-64) in CEE and Baltic (left panel) and SEE (right panel), 1990-2010
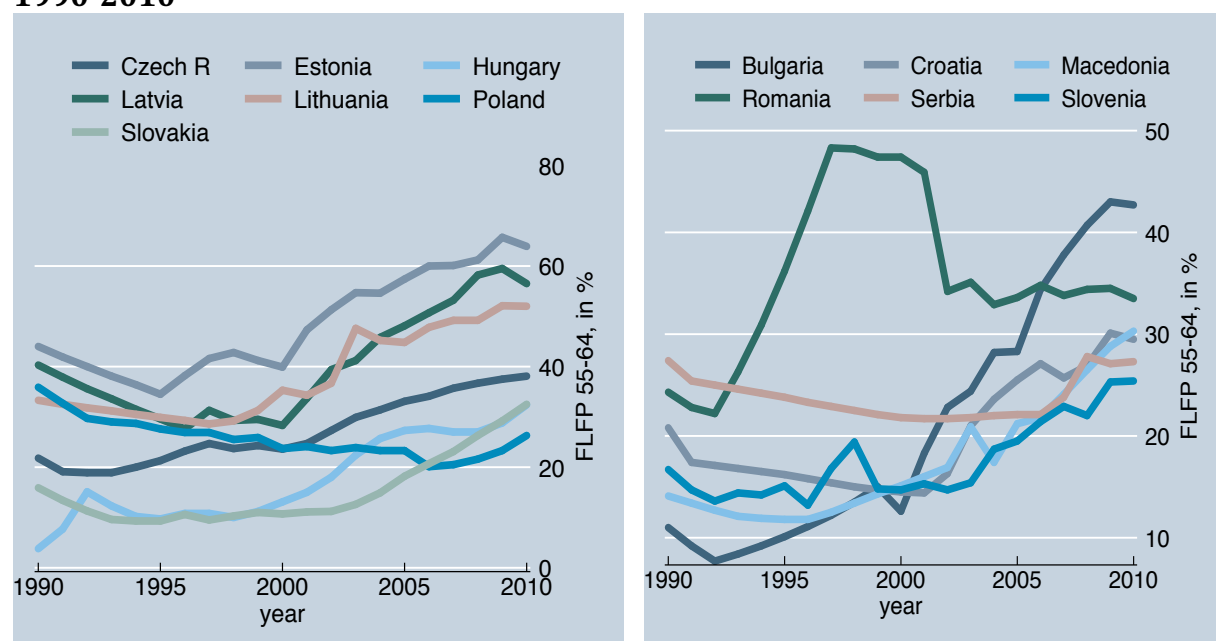
Source: Eurostat.
Note: The range of values on the Y-axis is not identical on the two graphs. This is because equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

In conclusion, due to the small shares of young and older women in total FLFP and employment, FLFP of prime age women is certainly the main driver of sub-regional differences in FLFP in Eastern Europe. On the other hand, LFP of older women has certainly contributed to the overall variation in FLFP rates. Since this variation in older women's LFP is driven by their employment, rather than unemployment, I conclude that countries with higher FLFP of older women have been better at integrating all working age women into their labour markets.

The empirical finding that a larger share of older women work in countries where the overall FLFP is higher fits well with my argument that those countries that pursued a social investment approach to welfare provision were more successful at ensuring a larger number of women were economically active in all age cohorts. These countries reformed their educational sectors with the aim of transforming themselves into knowledge economies. They can be categorised as social investment states, which have sought to strengthen their population's labour market characteristics by equipping them with adequate skills to make them more competitive and thus more employable. This contrasts with the traditional role that the welfare state has had in some of the other countries in my sample. The traditional welfare state, which aims to protect people from the market forces through unemployment benefits and other types of safety nets, has in fact led to early retirement and a reduction in the overall presence of women in the labour market. Thus this section has provided evidence to reject H4 and to partially accept H5.

4.6   Summary

This chapter analysed the structure of the dependent variable, which is the focus of this thesis – FLFP. It analysed five hypotheses in order to improve our understanding of the structure of FLFP. The first two sections analysed how FLFP relates to male labour force trends and female unemployment and employment rates. I partially rejected the hypothesis that FLFP rates are associated with gender gaps in LFP, which led me to conclude that I will use both FLFP and GGAP as alternative dependent variables in the

subsequent empirical chapters. I then rejected the hypothesis that differences in unemployment rates were driving FLFP rates in post-socialist Eastern Europe.

The flip side of this analysis is that employment rates were driving FLFP in the region, which provides further support to my theoretical model, which posits that FLFP rates in Eastern Europe have been determined by structural changes in employment opportunities. In the subsequent two sections I rejected the hypotheses that historical path dependence on communism can explain the variation in FLFP and that FLFP of youth has driven the overall variation in FLFP. Finally, I partially rejected the hypothesis that overall FLFP rates are driven by LFP of older women by concluding that some of the observed variation is indeed driven by it, although there has been no variation in female retirement age across the region during the 2000s.

Chapter 5. Analysing socio-economic and policy drivers of female labour force participation in Eastern Europe

A number of socio-economic variables that were identified in the literature survey in Chapter 2 could have driven FLFP trends during post-socialist transition in Eastern Europe. An empirical analysis of these hypothetical drivers and their interactions with FLFP as the dependent variable is presented in this chapter. These relationships are examined across both time and space, with years and countries as the basic levels of analysis. Econometric models are estimated when there is enough temporal and spatial variation in the independent variable, while some of the relationships are examined solely through descriptive statistical analysis.

In the six sub-sections that follow, I analyse the impact of the following factors on FLFP in Eastern Europe: economic development, attitudes towards women's work, fertility rates, duration of maternity leave, access to childcare and female educational attainment. I identified these factors as the most salient, based on the economic literature I surveyed in Chapter 2.

This analysis is conducted in the context where recent literature has begun to cast doubt on the automatic effect of socio-economic variables on such complex phenomena as FLFP. As I show in Chapter 2, both Humphries & Sarasúa (2012) and Gaddis & Klasen (2014), question the U-shaped hypothesis of FLFP through economic development and argue that economic development does not have an automatic effect on female labour market opportunities. Fernández (2013) argues that cultural beliefs about women's work and FLPF are in fact co-determined by wages and job opportunities. Furthermore, Billari & Kohler (2004) point towards a changing relationship between fertility and female work in Europe, as fertility at lower numbers of births per woman stops being an impediment to female economic activation. When it comes to work-life reconciliation policies, McCall & Orloff (2005) remind us that earlier feminist efforts to link social policy to female employment levels are being increasingly challenged by the growing CPE emphasis on competitive demands in the new economy as the drivers of female employment (p.160). Finally, while there is still substantial support in the literature for the human capital theory, which suggests that those, including women, who have

invested more into education are more likely to work. The CPE literature on skill formation now tends to suggest that the relationship between education and (female) employment is mediated by the types of skills gained in different educational systems and the demand by different occupations and sectors of the economy (see Martinaitis, 2010 for overview of literature).

While the literature cited above has cast some doubt on the conventional wisdom about the drivers of FLFP in advanced market economies, in this chapter I examine these stylised facts in the context of 13 Eastern European countries which are the focus of this thesis. Such a comprehensive analysis is required because, to the best of my knowledge, these variables and their impact on FLFP have never been scrutinised. My expectation is simple: the socio-economic variables examined in this chapter will not sufficiently explain the variety in FLFP trends across the region. These negative findings will lead onto the empirical testing of my theoretical model in the subsequent chapters, as an alternative explanation that focusses on the role of economic restructuring and demand for female labour during post-socialist transition.

5.1   Economic development

Following literature surveyed in Chapter 2 on the impact of economic development on FLFP, I formulate the following broad hypothesis, which I test econometrically:

H6: The *level of economic development determines the level of FLFP.*

After the initial fall in national outputs during the 1990s, which was more pronounced in some Eastern European countries than in others, we have observed high economic growth and moderate economic development in most of these countries, particularly during the 2000s. As shown in Graph 5-1, Bulgaria and Romania lagged behind the rest of Eastern Europe in terms of economic development (proxied by GDP per capita), while economic development in FYR Macedonia and Serbia stagnated throughout the 1990s and 2000s.

Graph 5-1. Economic development by country, 1990-2010
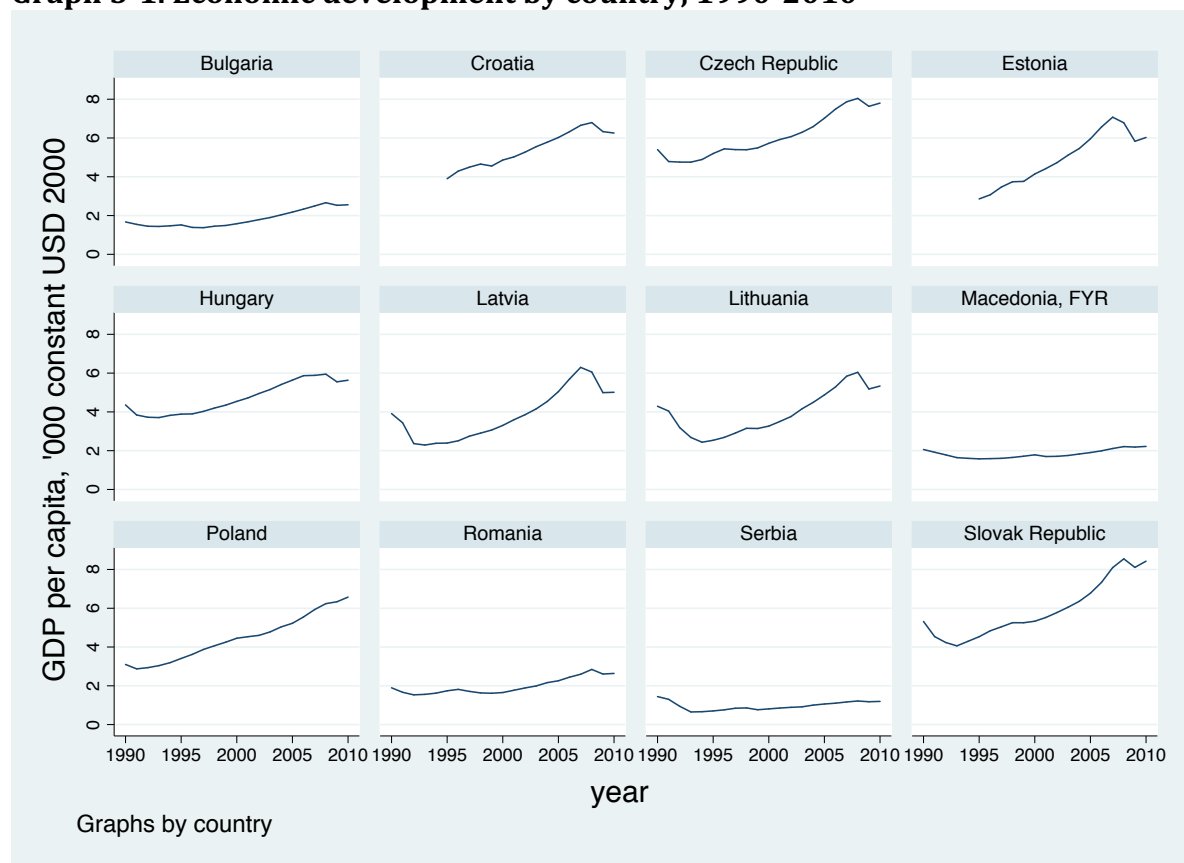
Source: World Development Indicators, The World Bank.
Note: The figure does not contain GDP per capita growth in Slovenia, because its GDP per capita, both at the beginning and at the end of the observed period, is higher than in the rest of the countries in the region (USD7,200 was the country's lowest value, reached in 1992, while USD12,700 was its highest, reached in 2010). The GDP per capita growth in Slovenia for the period 1990-2010 is shown in Graph A-11 in Appendix A5.

The macro relationship between female economic participation and economic development in Eastern Europe is particularly interesting for analysis because post-socialist countries should have followed a different path from that suggested by Goldin's U-shaped curve (Goldin, 1995). Due to the strong insistence of communist regimes on female labour participation in industry, female work in manufacturing was not stigmatised, so these countries moved from highly agricultural societies into highly industrialised ones, during which period female participation in the formal economy grew substantially. In addition, a sectoral bias towards overdevelopment of heavy industry and underdevelopment of services was present in all eastern economies during communism, independent of their level of economic development, because "following Marx, services were viewed as unproductive" (Roland, 2000, p.6). After the collapse of communism the service sector expanded drastically, which should

theoretically have favoured female employment even more than employment in industry.

Due to the low availability and limited comparability of labour market data in Eastern European countries prior to 1990, this analysis focusses on the period of post-socialist transition and covers the period 1990-2010.[31] Given this period of analysis, the expected theoretical direction of the relationship between economic development and FLFP is not clear. On one hand, some countries experienced de-development[32] during the early 1990s, when we would have expected FLFP to fall. This would point to a positive relationship between the two variables – as GDP per capita falls, so does FLFP. Furthermore, the fact that the service sector expanded in all Eastern European countries during transition also points to a theoretically positive relationship between economic development and FLFP, since expansion of the service economy is expected to benefit female employment. On the other hand, extensive transitional restructuring and massive employment losses in industry during transition could have also reduced female, along with male, employment in industry, which was substantial at the onset of transition.[33] These structural shifts and their implications for female employment are explored in greater detail in my theoretical model in Chapter 3, and in Chapters 6 and 7 where the model's empirical validity is tested. Yet, this discussion serves to underline why I expect to reject the simple hypothesis that Eastern European countries' FLFP rates reflect these countries' different levels of economic development.

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[31] This thesis focusses on the period until the onset of the Great Recession in 2008, as discussed in Chapter 4. The additional two years of observations do not alter the results of the econometric analysis.

[32] The term *de-development* was coined in the context of Eastern European transition by Meurs & Ranasinghe (2003).

[33] While female, as well as male, employment during communism was obligatory across Eastern Europe except in the former Yugoslavia, theoretically we might have expected that some people would have chosen to leave the labour market with the onset of transition. On the other hand, there were strong economic reasons why, in practice, people would not have chosen voluntary unemployment during the early stages of transition. First of all, because of full employment during communism, all benefits apart from old age pensions were claimed through employment and meagre unemployment-related benefits were established only following pressure from growing numbers of the unemployed. Moreover, decline in national outputs during the early stages of transition, which was then followed by economic restructuring, created scores of involuntarily unemployed individuals and strong economic incentive to stay in any kind of employment. Therefore, rather than personal choice, the structure of the economy and job type determined whether they were going to become unemployed.

5.1.1 Data and variables

In order to test H6, I compiled a balanced TSCS data set covering my sample of 13 Eastern European countries[34] for the period 1990-2010.

My dependent variable, which was already introduced in Chapter 4, is *FLFP of the working age population* (hereinafter referred to as FLFP 15-64) from the ILO KILM database.[35] The data presented in the ILO Yearbooks on the economically active population have been drawn from the latest population censuses or labour force sample surveys.[36]

In addition, following the work on the Kuznets curve of gender equality by Eastin & Prakash (2013), I use the GGAP of the working age population (15-64) as an alternative dependent variable.[37] With a coefficient of -0.79, which is statistically significant at 1%, its correlation with FLFP (15-64) is high. Nevertheless, as I discuss in Chapter 4, these two variables are not negatively correlated in CEE and the Baltic, which are the core focus countries in the qualitative part of my empirical analysis, so I include GGAP as the alternative specification of my dependent variable.

My independent variable is *Economic development*, measured as GDP per capita in constant US dollars (2000) and obtained from the World Bank's World Development Indicators database. While PPP-adjusted GDP per capita is a commonly-used indicator for analysing the impact of economic development on employment outcomes (Gaddis & Klasen, 2014), this data for Eastern Europe is extremely noisy which would lead to imprecise econometric estimates (as argued by Wooldridge, 2010). Since I am testing for the presence of a curve, consistent with the literature on Goldin and Kuznets, I also include the quadratic specification of GDP per capita. Furthermore, inclusion of the

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[34] Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, FYR Macedonia, Poland, Romania, Serbia, Slovakia and Slovenia. These countries are introduced in Chapter 1.

[35] The series includes both nationally reported and imputed data. It is this series of harmonised estimates that serve as the basis of the ILO's world and regional aggregates of the labour force participation rate reported in the *Global Employment Trends* series and made available in the KILM 7th edition software. Eurostat LFS-based data for Eastern Europe is available only from 1997 onwards.

[36] In order to improve the robustness of my model, I considered using the prime age cohort of economically active women as a second dependent variable,FLFP (25-54), as part of the sensitivity analysis. Nevertheless FLFP (15-64) is highly correlated with FLFP of prime (25-54), with the correlation coefficient of 0.96, and a preliminary econometric analysis with FLFP (25-54) does not produce significantly different results (Table A-3 in Appendix A5).

[37] The GGAP is calculated as the difference between male labour force participation (MLFP) and FLFP.

linear term only would have resulted in the misspecification of the model, according to the results of the F-test that I conducted in STATA.

While economic development may be correlated with other macroeconomic variables, such as economic growth or exports levels, which may affect my dependent variable estimates, I am interested in examining the reduced form of relationship between the two variables, following Gaddis & Klasen (2014). Therefore, I do not include any control variables in my model. First of all, a preliminary analysis with economic growth as a control variable, which is supposed to control for the fluctuations in short-term business cycles, does not impact the results of my analysis. I also do not need to 'defend' the significance of the relationship by showing that it is not driven by omitted variables, because the focus of my analysis is to report negative findings and reject the null hypothesis, rather than to accept it. In other words, my aim is to show that economic development is not a significant driver of FLFP trends in Eastern Europe, even when the model is estimated with that variable only. Moreover, some of the other potential drivers of the relationship, such as fertility rates or female educational attainment, are examined in separate sections of this chapter.

Finally, summary statistics on the dependent and independent variables as well as the statistical correlations between the variables are presented in Tables A-1 and A-2 in Appendix A5.

5.1.2 Method

The econometric analysis conducted here is based on a TSCS dataset. Having a TSCS dataset allows me to control for differences in variables such as culture, which vary across countries but not through time, as well as variables that change over time but not across countries. In other words, I am able to account for heterogeneity of individual countries as well as time periods. Using a TSCS dataset, instead of cross-country or time series data only, greatly increases the variability of data in comparison to only a temporal or spatial analysis. It is the most appropriate way to simultaneously examine both the temporal and spatial component of the impact of GDP per capita (as a proxy for

economic development) on FLFP. My database covers 13 countries over 21 years; it is strongly balanced and yields 263 data points.[38]

In order to study the relationship between FLFP and economic development in Eastern Europe, I estimate several specifications of the following econometric model, commonly used in the literature on the U-shaped curve of FLFP through economic development.

$$FLFP_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 GDP^2_{it} + \mu_{it} \tag{1}$$

$$GGAP_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 GDP^2_{it} + \mu_{it} \tag{2}$$

where $FLFP_{it}$ is a measure of FLFP in country i in year t and $GGAP_{it}$ is a measure of the gender gap in labour force participation in country i in year t (as the alternative dependent variable). The GDP_{it} is a measure of economic development in country i in year t, GDP^2_{it} represents its squared form, μ_{it} is an error term and the betas are the parameters to be estimated. When using FE estimates, a δ_t term, which represents time-specific FE, is also added to the equations.

There is no consensus on what constitutes the best approach to analysing macroeconomic TSCS datasets. As Gaddis & Klasen (2014) point out, earlier work on the U-shaped impact of economic development on FLFP relied largely on ordinary least square (OLS) estimations on pooled samples of TSCS data (Cagatay & Ozler, 1995). In OLS-based estimations parameter identification is based on cross-sectional variation, which means that data on FLFP from countries at different income levels are used to make conclusions about this relationship within a single country over time. On the other hand, application of a FE estimation technique allows for country-specific intercepts and identifies relationships exclusively on over-time variation within countries. Therefore, when using FE, we assume that something within an individual country may impact or bias the predictor or outcome variables and we control for that.

Since this thesis, in the spirit of the comparative political economy literature, is interested in both the spatial and temporal aspect of FLFP in Eastern Europe after 1990, I apply both of these econometric approaches and compare their results. As I mentioned above, the benefit of the OLS estimator is that is allows for simultaneous cross-country

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[38] Instead of the maximum 273 because GDP per capita data for Croatia and Slovenia are missing for the period 1990-1994.

and over-time analysis, while the FE estimator focusses on average changes over time within countries in the sample.

I first apply the pooled OLS estimator, which I need to adjust because it could produce seriously biased coefficients because of the non-randomness of the error term. The key assumptions of the OLS are that errors for a particular unit (country in this case) at one time are unrelated to that unit's errors at another time and that errors for one unit are unrelated to errors for another unit. In other words, error terms are assumed to be randomly distributed and independent, so that there is no spatial or temporal correlation between them. These are highly implausible assumptions for this particular TSCS dataset because a country's labour market conditions at one time are most certainly correlated to its conditions at another time. Furthermore, many of these countries' economies are linked, and even groups of countries may have correlated error terms vis-à-vis other groups of countries.

The OLS estimator also assumes homoscedasticity, that errors have the same variance over time. However, it is clear from the dataset that the variation in FLFP rates was lower during the early stages of transition, while it increased as the transition progressed and as the countries pursued different development trajectories. This points to the presence of heteroskedasticity, the variability is unequal over time. Furthermore, the STATA heteroskedasticity test shows that the null hypothesis of homoscedasticity is rejected (p-value is significant at 5% for FLFP (15-64) and at 1% for GGAP (15-64)).

In order to address some of these issues, including the cross-sectional dependence between my units which are unaccounted,[39] I run the OLS estimates with panel-corrected standard errors (PCSE), following an influential article by Beck & Katz (1995) on how to analyse TSCS datasets. According to them, PCSE OLS produce more realistic estimates because of their larger standard errors. If the coefficients remain significant when applying this method, the results can be treated as sufficiently robust.

I then analyse the data using the FE estimator. Gaddis & Klasen (2014), argue that it is a more appropriate estimation technique to examine the feminisation U hypothesis because it focusses on changes within individual countries over time. Furthermore, to

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[39] This means that I am accounting for the possibility of a commonly-omitted variable, which swings my error terms for certain groups of countries in the same direction and makes them correlated.

confirm that my selection of the FE estimator is appropriate, I run a Hausman test in STATA. The Hausman test checks whether the error terms are correlated with the regressors, with the null hypothesis being that they are not. The Hausman test rejects the null hypothesis and therefore calls for the application of the FE estimator on my dataset.[40]

5.1.3 Results

I commence my discussion with the results from the regressions where FLFP (15-64) is the dependent variable, following which the results from the regressions with GGAP (15-64) as the dependent variable are shown.

Results from the PCSE OLS, the least biased and the most robust OLS estimator,[41] as well as from the FE estimator are shown in Table 5-1. As I explained previously, PCSE OLS regressions account for both the temporal and spatial variety, while FE estimators account for changes within countries over time. Both models are first estimated for all 13 countries. They are then estimated without Slovenia (SI), because it is a strong outlier at the top end of the GDP per capita distribution, and without FYR Macedonia (MK) and Serbia (RS) as strong outliers at the bottom end of the GDP per capita distribution. Finally, both models are estimated without all three of these countries. Because of the questionable quality of LFS data during the 1990s, I also conduct the analysis for the time period 2000-2010 only. The results of this analysis are shown in Table A-3 in Appendix A5.

Firstly, I discuss the results from the first two columns in Table 5-1. In model 1, which is a PCSE OLS estimate that includes all 13 countries, both the linear coefficient β_1 and the squared coefficient β_2 of GDP per capita, significant at 1%. Furthermore, the coefficients have the opposite signs, with β being positive and γ negative. This indicates that the model predicts the trajectory of FLFP through economic development in Eastern Europe as the inverse U shape – economic development boosts FLFP up to a certain

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[40] The alternative to this specification would be a random effects estimator, which would be applied in the case of confirmation of the null hypothesis.
[41] Coefficients in PCSE remain the same as in the basic OLS, but the standard errors and t-statistics are higher.

point, following which FLFP starts to go down. This prediction is based on evidence from various countries at different income levels. However, when we run the regression with the FE estimator in order to analyse the relationship within individual countries over time, we obtain the opposite direction of the relationship, with a negative β_1 and a positive β_2, both also significant at 1%. This indicates a U-shaped relationship between economic development and FLFP within the countries in our sample. These seemingly contradictory findings can be better understood if the coefficients are presented visually.

Table 5-1. Economic development and FLFP (15-64): econometric estimates

	All countries		Without SI		Without MK & RS		Without MK, RS & SI	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	PCSE	**FE**	**PCSE**	**FE**	**PCSE**	**FE**	**PCSE**	**FE**
GDP pc	1.840	-1.619	4.174	-0.746	-1.047	-1.781	-0.770	-1.236
	(11.87)***	(4.28)***	(14.78)***	(1.02)	(4.08)***	(4.51)***	(1.31)	(1.56)
GDP pc2	-0.088	0.140	-0.382	0.044	0.093	0.150	0.068	0.089
	(6.84)***	(5.26)***	(10.96)***	(0.63)	(5.46)***	(5.41)***	(1.15)	(1.17)
_cons	54.576	63.657	51.119	62.019	64.413	66.266	63.838	65.367
	(115.37)***	(61.06)***	(97.64)***	(40.01)***	(77.21)***	(55.11)***	(48.41)***	(35.56)***
R2	0.14	0.11	0.16	0.02	0.04	0.13	0.01	0.03
N	263	263	242	242	221	221	200	200

* p<0.1; ** p<0.05; *** p<0.01

Note: The analysed data covers the period 1990-2010.

In order to present the coefficients for country dummies that stem from the fixed effect estimations and compare them to my PCSE OLS estimate visually, I run the FE estimates using the least squares dummy variable model (LSDV). This is an alternative method to run the FE regression, producing identical results, but allowing the generation of specific coefficients for each country, which can then be presented visually. Country-level estimates are illustrated in Graph 5-2 along with the fitted values plot from the OLS PCSE regression (model 1 from Table 5-1), while the same coefficients with the fitted values plot from the FE regression (model 2 from Table 5-1) are shown in Graph 5-3.

Graph 5-2. Predicted values of FLFP (15-64): FE using LSDV with fitted values from the OLS regression
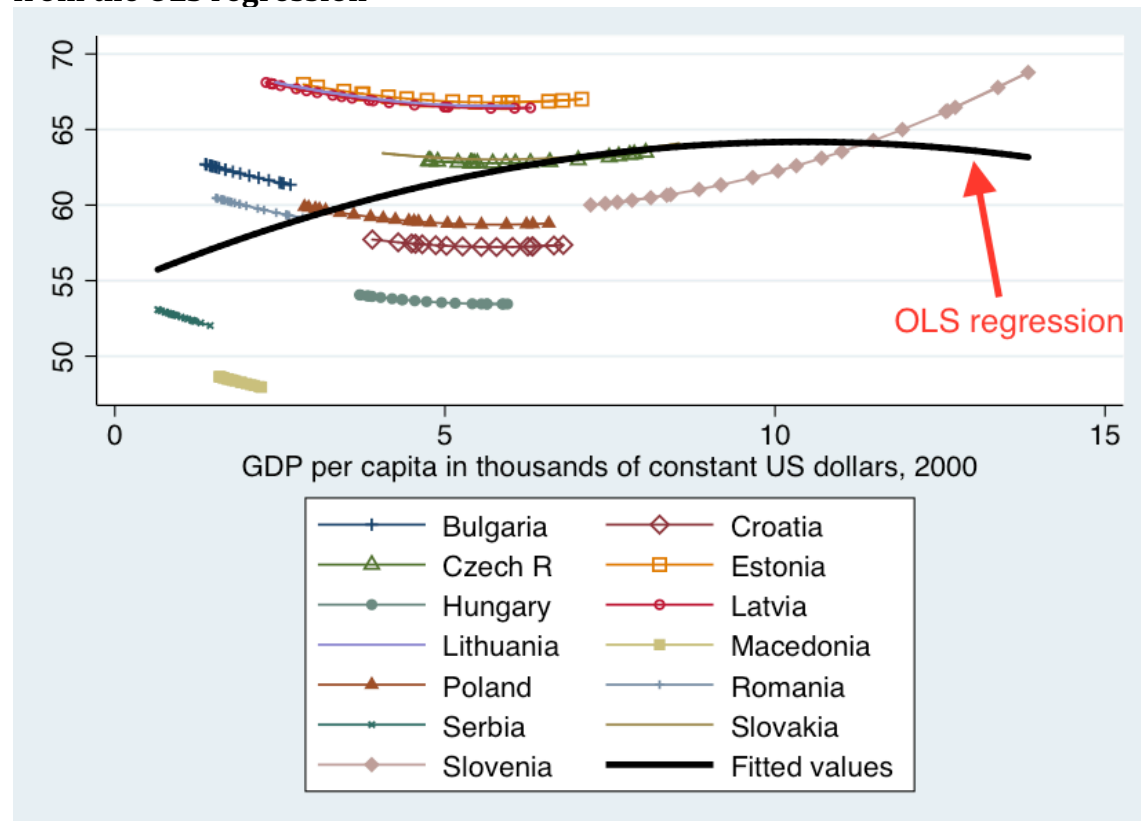
Graph 5-3. Predicted values of FLFP (15-64): FE using LSDV with average FE estimates as fitted values
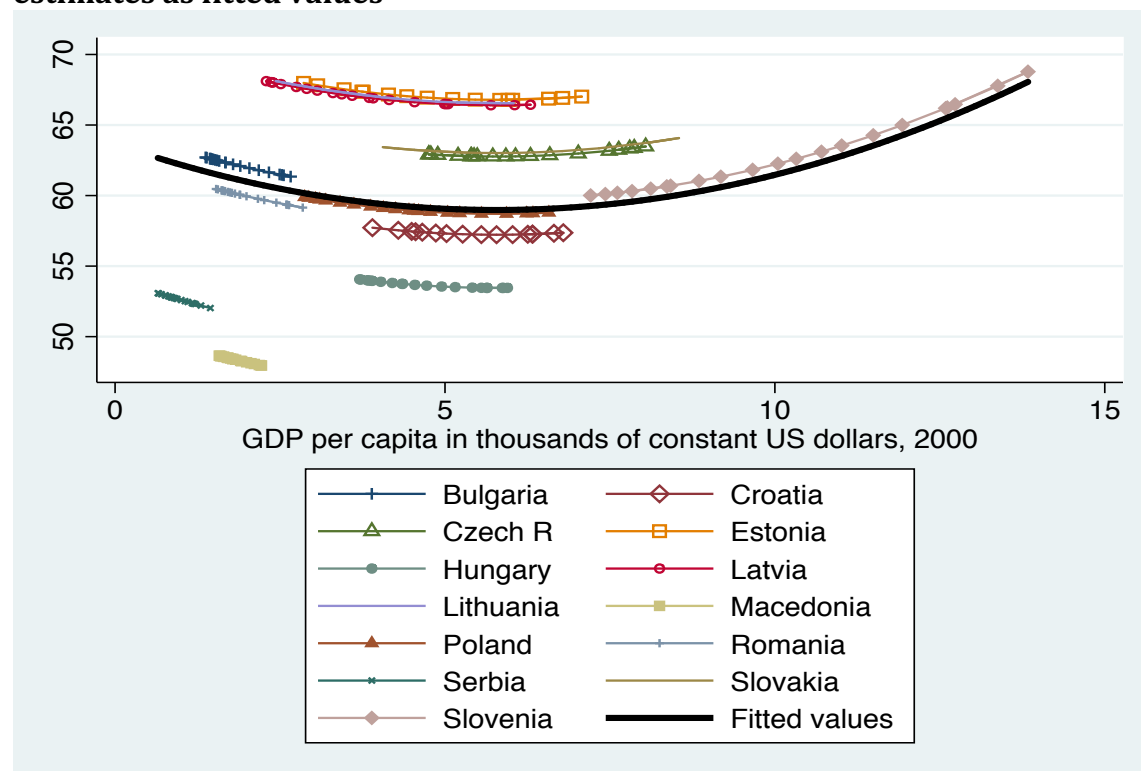
Graph 5-2 illustrates why the PCSE OLS regression produced a positive linear term β. When we account for both within country and across country variation in our sample, the fitted values trend line slopes upward, until the predicted values for the Czech Republic, Slovakia and particularly Slovenia start driving the trend downward from the relatively higher predicted values for the Baltic countries (Estonia, Latvia and Lithuania). The graph also indicates that values for FYR Macedonia and Serbia are pulling the trend downward at the lower end of the GDP per capita spectrum, which makes the upward portion of the trend line steeper. In Graph 5-3, on the other hand, a slight U shape can be observed within individual countries, with the quadratic term that pushes the trends upwards mostly being determined by Slovenia. In other words, the upward sloping portion of the U shape is based on very few observations which gain significance because of the inclusion of the squared term for GDP, which exaggerates their effect.

Therefore, Slovenia, FYR Macedonia and Serbia can be considered as outliers at the high and low ends of the distribution of the independent variable. I therefore re-estimate the regressions without these three countries, and show the coefficients in models 3-8 in Table 5-1.

When I exclude Slovenia from the sample, both the positive linear β coefficient and the negative quadratic β_2 coefficient in the PCSE OLS become larger (see model 3 in Table 5-1). This is exactly what one could predict merely by observing Table 5-1. By removing the Slovenian data, we would observe a steeper upward sloping OLS regression line as well as a steeper drop from the values that are predicted for the Baltic countries to those that are predicted for the Czech Republic and Slovakia. The FE regression, on the other hand, loses all significance when we exclude Slovenia, which confirms my earlier argument that a few data values are exaggerating country level effects because of the inclusion of the quadratic term.

When FYR Macedonia and Serbia are excluded from the sample, both coefficients change signs in the PCSE OLS regression, so that the relationship becomes U-shaped, and thus resembles the within country FE estimates (the exclusion of these two countries does not substantially affect FE estimates). The exclusion of all three outlier countries leads to the complete loss of significance for both the linear and the quadratic

coefficient (see models 7 and 8 in Table 5-1). These changes in the dynamics of predicted values could have been expected by a simple visual analysis of data in Graph 5-2 and Graph 5-3. Finally, when I exclude the first 10 years of transition from the database and specify the same model for the period 2000-2010, the FE estimator loses all significance even when all 13 countries are included in the sample (see Table A-3 in Appendix A5). This indicates that the U shape that was significant for the entire time period is driven by slumps in FLFP during the early stages of transition which occurred in all Eastern European countries.

In summary, the significant coefficients for the relationship between economic development and FLFP in Eastern Europe between 1990-2010 shown in Table 5-1 are driven by outlier SEE countries: Slovenia as the outlier at the top of the data distribution, and FYR Macedonia and Serbia at its bottom. This finding, coupled with the low R-squared values in the estimates, leads me to conclude that economic development on its own is not a sufficient explicans for the diversity in FLFP across Eastern Europe.

Additionally, the FE estimator reveals significant country level effects. By adding the dummy for each country we are estimating the pure effect of GDP per capita and we are controlling for the unobserved country-level heterogeneity. In other words, each dummy is absorbing the effects particular to each country. These large and significant differences between the individual countries that my model reveals, and which are illustrated by the higher or lower than average predicted values for some of the countries (see Graph 5-2 and Graph 5-3), indicate that there is something unobserved about the countries themselves, other than economic development, that is driving their levels of FLFP.

Specifically, the results with individual country effects indicate that the three Baltic countries display substantially higher coefficients than those predicted by the model. Slovakia and the Czech Republic follow, because their individual country level effects are also above the averages predicted by the model. On the other hand, Hungary, FYR Macedonia and Serbia country level effects predict significantly lower coefficients than the average. These results call for the unpacking of these country dummies in order to better understand what aspects of these individual countries' characteristics is driving FLFP trends in the region. These findings are in line with my theoretical model, which I

test in the subsequent chapters, and which proposes that these countries' specific trajectories of capitalist development are important drivers of their FLFP rates.

Table 5-2 shows results from the same regressions when GGAP (15-64) replaces FLFP (15-64)as the dependent variable. Both the PCSE OLS and the FE estimator produce similar coefficients when the entire sample of 13 countries is analysed. The coefficients indicate that the relationship between economic development and GGAP in Eastern Europe is defined by a slight U-shaped curve.

Table 5-2. Economic development and GGAP (15-64): econometric estimates

	All countries		Without SI		Without RS & MK		Without RS, MK & SI	
	(1) PCSE	(2) FE	(3) PCSE	(4) FE	(5) PCSE	(6) FE	(7) PCSE	(8) FE
GDP pc	-1.448	-1.315	-3.773	-2.227	1.248	-1.310	0.810	-2.276
	(11.75)***	(5.17)***	(6.99)***	(4.46)***	(3.81)***	(5.16)***	(1.16)	(4.41)***
GDP pc^2	0.062	0.059	0.375	0.154	-0.106	0.059	-0.037	0158
	(6.72)***	(3.30)***	(5.52)***	(3.18) ***	(4.32)***	(3.29)***	(0.48)	(3.17)***
_cons	18.324	17.828	21.577	19.724	9.070	16.570	9.619	18.638
	(65.67)***	(25.41)***	(26.55)***	(18.56)***	(11.01)***	(21.43)***	(7.75)***	(15.53)***
R^2	0.16	0.15	0.16	0.16	0.09	0.17	0.06	0.19
N	263	263	242	242	221	221	200	200

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: The analysed data covers the period 1990-2010.

Graph 5-4 depicts the fitted values based on the coefficients from model 2. Coefficients from the PCSE OLS regression in model 1 are very similar to those in model 2 so I do not depict the models in separate graphs like I did for FLFP. When I exclude Slovenia from the sample, the U-shaped relationship is strengthened. Nonetheless, when FYR Macedonia and Serbia, which have substantially higher GGAPs than other countries in the region, are excluded from the sample, both coefficients change signs in the PCSE OLS model and an inverse U-shaped relationship is traced between economic development and GGAP. At the level of individual countries, the relationship is preserved as U-shaped (model 6). Finally, when all three countries which represent outliers in terms of their GDP per capita levels are removed from the sample (FYR Macedonia, Serbia and Slovenia), the relationships across and within countries lose significance.

Graph 5-4. Predicted values of GGAP (15-64): FE using LSDV with average FE estimates as fitted values
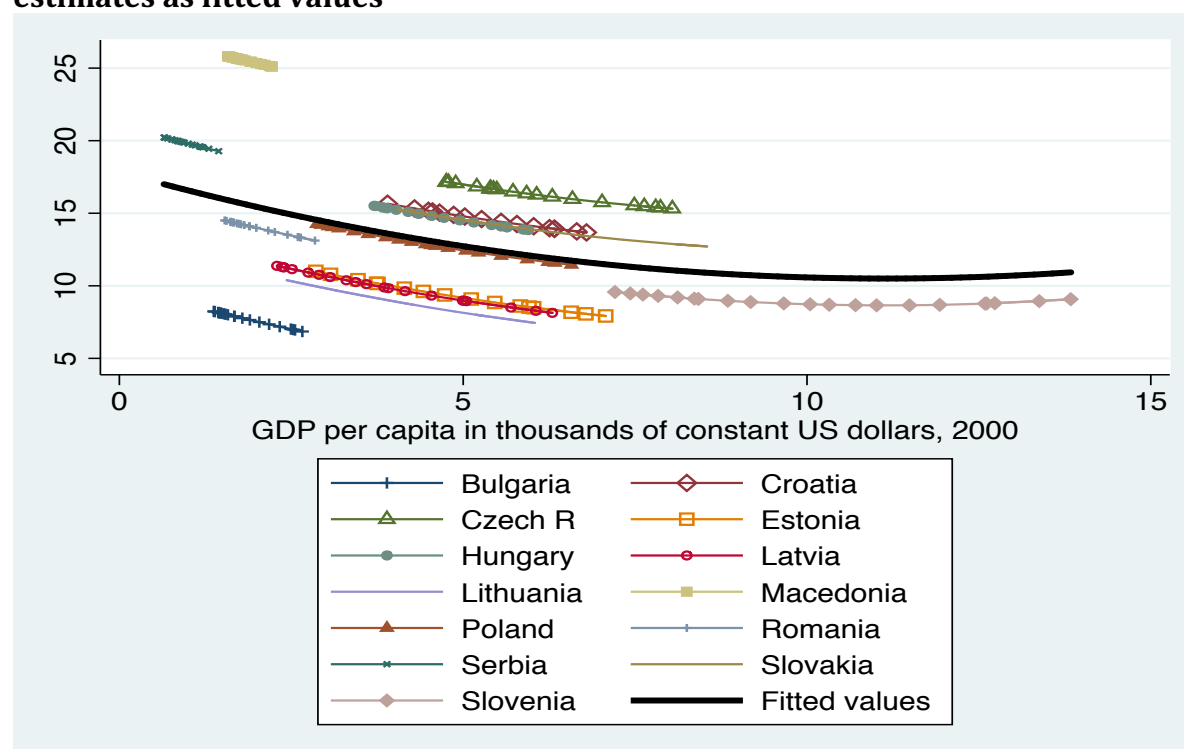
Graph 5-4 also depicts the extent to which the different countries depart from the average effect predicted by model 2. Apart from FYR Macedonia, which is a very strong outlier in terms of GGAP, countries where the predicted GGAP is much higher than the average predicted by the model are Serbia, the Czech Republic and Hungary. At the opposite end of the spectrum, we can observe a significantly lower predicted GGAP in comparison to the average for Bulgaria, followed by the Baltic countries.

Finally, my analysis of the data for the period 2000-2010 only indicates that the FE model loses all significance, even when I analyse the entire sample of 13 countries. On the other hand, the OLS estimates preserve the significance of the U-shaped relationship between economic development and GGAP (see Table A-4 in Appendix A5).

As in the case of FLFP, the relationship between GGAP and economic development is driven by three outlier countries: FYR Macedonia, Serbia and Slovenia. Therefore, in this section I have shown that there is not much evidence to support the hypothesis that economic development levels can explain the variation in FLFP rates, nor GGAPs within or across Eastern European countries. I also identify substantial heterogeneity at the level of individual countries, as well as groups of countries. These findings confirm the

long-held view among feminists and political economists that economic development does not automatically incorporate women into the labour force. The question that follows is whether specific policies can be more successful. The next sections of this chapter address that question.

5.2   Attitudes towards women's work

I examine the following hypothesis on attitudes towards women's work in this section:

H7: *The more traditional attitudes towards women's work, the les women are economically active.*

Cultural norms and attitudes towards women and their role in the private vs the public sphere are believed to have an impact on the extent of female economic activation. However, Fernández (2013) argues that gender norms and FLFP are in fact co-determined by wage levels and job opportunities. Schnepf (2006), the only relevant study of Eastern Europe of which I am aware, finds the region more traditional on average than the OECD group of countries.

While disentangling the complicated relationship between family values and FLFP would require an entire research project of its own, I briefly analyse data from the 2008 4th wave of the European Values Survey (EVS) using individual-level logit regressions and cluster analysis.[42] The EVS strives to provide insights into the attitudes, values and opinions of citizens all over Europe in order to improve our understanding of how Europeans think about life, family, work, religion, politics and society.

In order to test H7, I chose the following two questions from the EVS that I deem to be the most relevant for assessing both men's and women's attitudes towards women's work and reconciliation of work with childbearing responsibilities:

i)   Can a working mother have a warm relationship with her children? (Family: Question 48A).

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[42] The previous wave is from 1999 and does not contain the data for the countries in my sample.

ii)   Is being a housewife as fulfilling as a paid job? (Family: Question 48D).

The 2008 EVS sample that I use for the logit regression analysis consists of the 13 countries that are the focus of this thesis. The two questions were answered by 18,084 individuals across the 13 countries and the sample is weighted so that it is representative at country level. I code those individuals that 'strongly agree' or 'agree' with the two statements as 1, and those that 'strongly disagree' or 'disagree' as 0. I then run separate individual-level logits on these two answers. In addition to country and regional dummies (Baltic countries vs CEE vs SEE), I control for age (and its square), sex, marital status, labour market status and the level of education and I also cluster the observations at country level. The purpose of these logit regressions is to assess whether there are significant regional differences in individual attitudes towards women's work in the Baltic vs CEE vs SEE, that could explain the different performance of the three regions in terms of FLFP.

The results of the logit regressions on both questions (Q48A and Q48D) show that regional dummies are significant (see Table A-5 in Appendix 5). This indicates that there are significant differences in attitudes towards women's work across the three regions. In order to test the robustness of these regional dummies and examine whether these differences are any more different than an alternative clustering of the countries in my sample, I also create placebo regions[43] and replace the regional dummies with this alternative specification. The results of the logit regressions show that these placebo regional dummies are also significant for both questions (see Table A-6 in Appendix 5). Such a result indicates that differences in attitudes towards women's work between the Baltic, CEE and SEE are no more different than for some random alternative clustering of the countries into regions. I therefore conclude that there is no regional clustering of attitudes towards female work between the Baltic, CEE and SEE.

Following the logit regressions, I also conduct a country level cluster analysis on the 2008 EVS data for the 13 countries in my sample. This is an alternative empirical strategy, a descriptive technique to determine which of the 13 countries are most and least similar in terms of their average values on attitudes towards women's work. The

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[43] Placebo region 1: Czech Republic, Hungary, Estonia and Serbia; Placebo region 2: Croatia, Latvia, Macedonia, Poland and Slovakia; Placebo region 3: Bulgaria, Lithuania, Romania and Slovenia.

analysis is based on the principle of minimum dissimilarity between two cases so that the nearest neighbour is identified for each country (the so-called analysis of single linkages).

The results of cluster analysis on the two questions are presented via dendrograms, which are displayed in Graph 5-5 and Graph 5-6 below.

Graph 5-5. Working mother can have a warm relationship with her children (Family: Q48A)
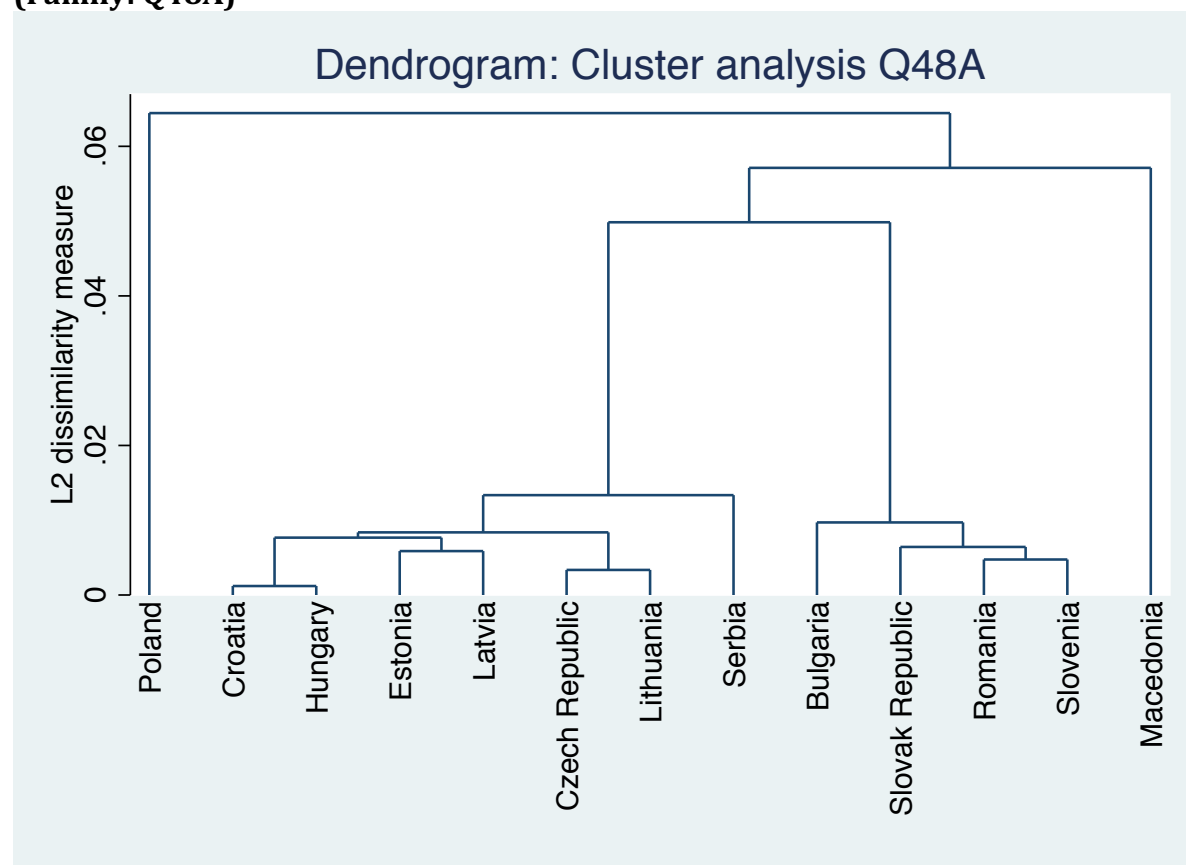
Source: European Values Survey, 2008.

The longer the vertical lines in the dendrogram (the higher the dissimilarity measure on the y-axis), the more dissimilar are the countries. The dendrogram in Graph 5-5 indicates that FYR Macedonia and Poland are outliers, not part of any cluster, when it comes to their population's attitudes on whether a working mother can have a warm relationship with her children. Based on the clustering of the rest of the countries in Graph 5-5, I conclude that the differences in values between the countries cannot be associated with the countries' levels of FLFP. Hungary and Estonia, for example, have very similar values and belong to the same cluster, while they are extremely dissimilar in terms of FLFP.

A similar conclusion can be drawn from the dendrogram in Graph 5-6. Lithuania is an outlier when it comes to its population's attitude on whether being a housewife is as fulfilling as a paid job. Moreover, the three clusters of countries that crystallise do not indicate any regional clusterings that could be associated with these countries' FLFP levels.

Graph 5-6. Being a housewife is as fulfilling as a paid job (Family: Q48D)
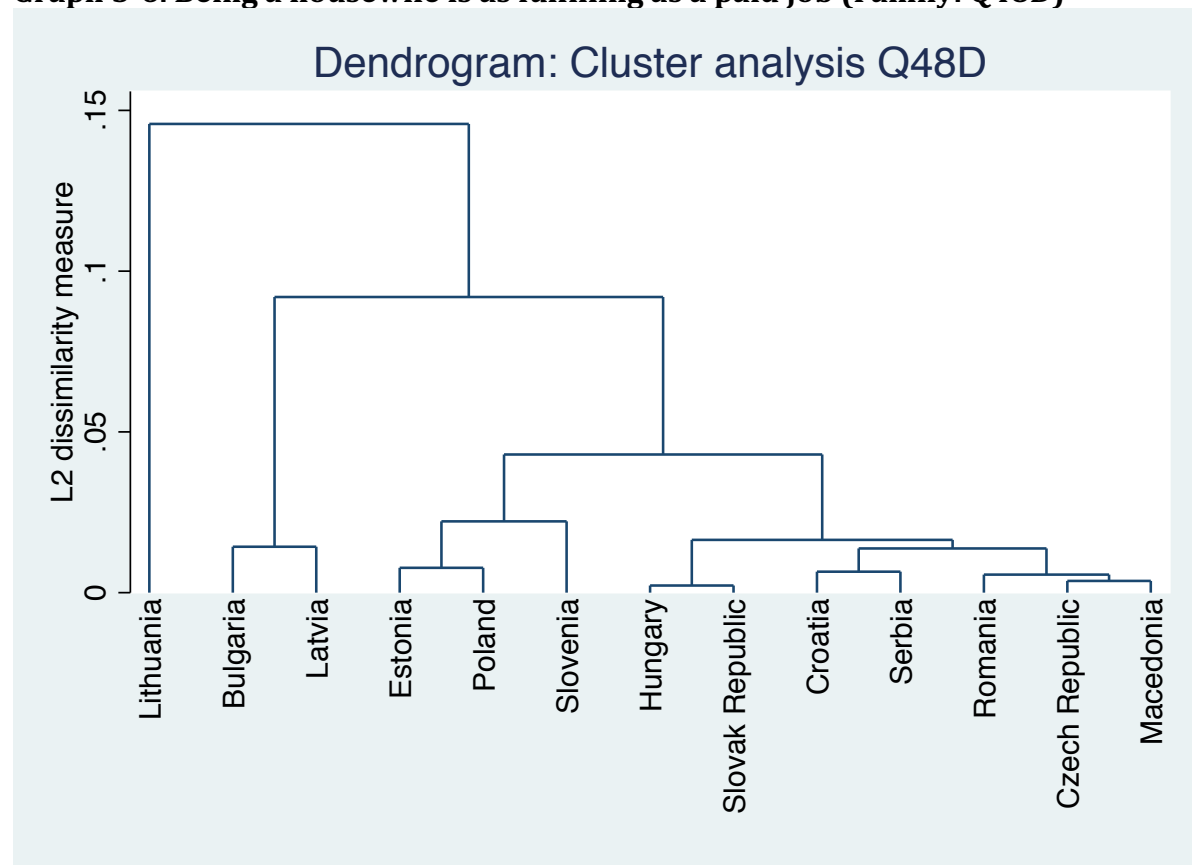
Source: European Values Survey, 2008.

In conclusion, the regression and cluster analyses of the 2008 EVS data show that the differences in attitudes towards women's work are not grouped according to the regions or groups of countries that have been more or less successful in integrating women into the labour market during transition. Following these findings, I reject H7.

5.3   Fertility rates

The hypothesis that I test in this section is the following:

H8: *Women's participation in the labour force grows as fertility rates decrease.*

Historically, economic literature has posited an inverse relationship between fertility and family size on one hand and economic activation of women on the other. However more recent studies have started to question whether this stylised fact still holds and substantial conflicting empirical evidence has emerged. Panopoulou & Tsakloglou (1999), for example, find no significant relationship between fertility and FLFP using cross-sectional data from 1992 for a sample of 68 countries (13 developed and 55 developing).

Billari & Kohler (2004) argue that fertility is changing its relationship with FLFP in Europe. They cite several studies that have found that the relationship between the two variables has switched from a negative to a positive one in OECD countries during the mid-1980s and early 1990s (Ahn & Mira, 2002; Brewster & Rindfuss, 2000; Esping-Andersen, 1999). A recent IMF paper also finds that more regular female employment is associated with higher fertility (Kinoshita & Guo, 2015). On the other hand, Gaddis & Klasen (2014) cite studies by Bloom et al. (2009) and Angrist & Evans (1998) which provide evidence for the inverse relationship between fertility and FLFP in the developed countries (Gaddis & Klasen, 2014, p.676). Therefore, the answer to this question has depended on the type of data (time-series, cross-country or panel) and the type of statistical analysis being conducted. This points to the complexity of understanding linkages between fertility and female economic activation and calls for further 'thick theory' accounts of this relationship.

Accounting for diversity in FLFP outcomes in Eastern Europe is interesting because a substantial drop in fertility rates, measured as the number of births per woman, took place in the whole of Eastern Europe during the 1990s. This slump was followed by a partial recovery during the 2000s, except in FYR Macedonia and Serbia, where fertility rates continued to decline (see Graph 5-7). Towards the end of the second decade of transition, most of the countries converged to around 1.5 births per woman, so the

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range of values across the countries at the end of the period of observation is rather limited. The data also show that Estonia is leading the way in terms of fertility in 2008, while it was also the country with the highest FLFP at the time.

Graph 5-7. Fertility rate in CEE and Baltic (left panel) and SEE (right panel), 1990-2010
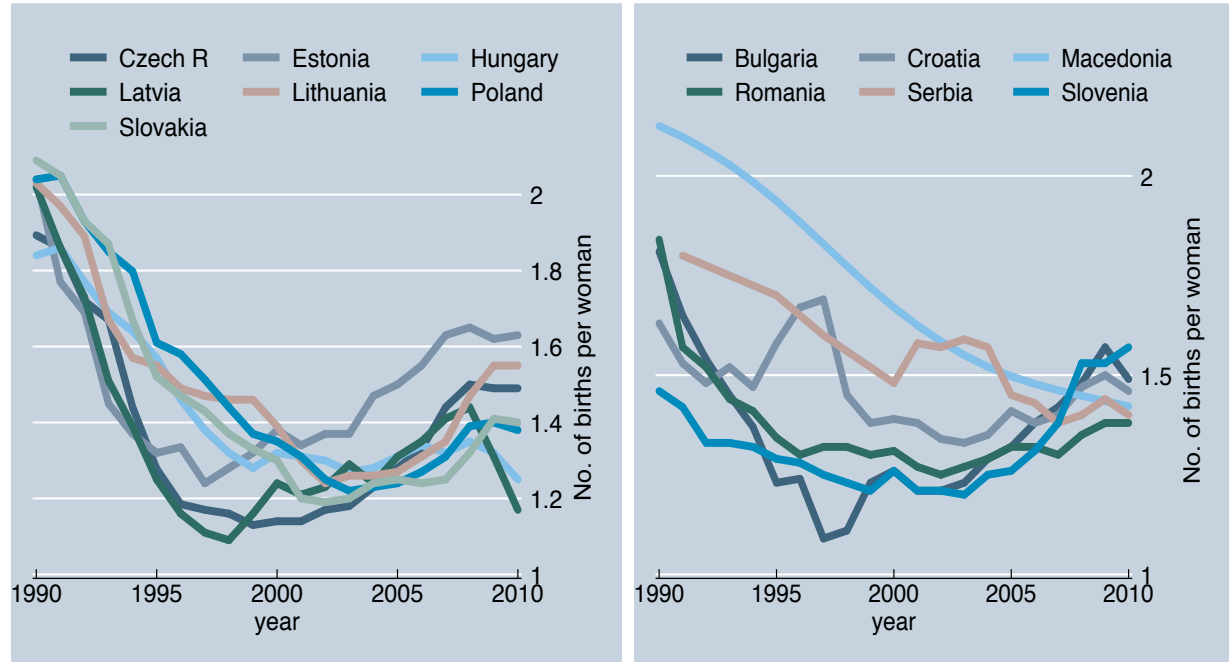
Source: UN Statistics.
Note: Births per woman is a standard measure of fertility.

In order to test H8, I use the data on the number of births per woman, obtained from UN Statistics, for 13 Eastern European countries during the period 1990-2010. I estimate the following econometric model:

$$\text{FLFP}_{it} = \beta_1 + \beta_1 \text{FERTIL}_{it} + \beta_3 X'_{it} + \mu_{it} \tag{1}$$

where FLFP_{it} is a measure of FLFP in country i in year t and FERTIL_{it} is a measure of fertility in country i in year t. X'_{it} is the vector of control variables, μ_{it} represents an error term, while the betas are the parameters to be estimated. When using the FE estimator, a δ_t term, which represents time-specific fixed effects, is also added to the equation.

I include GDP per capita and its squared term as control variables. I do not include infant mortality rates, even though it can sometimes be encountered as a control variable in studies on fertility, because it is a variable that is more relevant for developing countries.

I apply the same econometric estimation techniques that I used to analyse the relationship between economic development and FLFP in the previous section – PCSE OLS and the FE estimator. The results of the econometric estimates are shown in Table 5-3. Because FYR Macedonia and Serbia are the only two countries where fertility was falling throughout the period of analysis, I also run the same models without these two countries (models 3 and 4).[44] Finally, models 5 and 6 show the results for the period 2000-2010 only for the entire sample of countries, as this is considered the period during which the labour force statistics were fully reliable.

Results of the regression analyses, which are presented in Table 5-3, indicate either a positive significant or an insignificant effect of the fertility rate on FLFP, depending on the specification of the model. Both estimation techniques yield positive coefficients, which are significant at 1% when FYR Macedonia and Serbia are excluded from the sample. Nevertheless, when I exclude the first period of transition, during which both FLFP and fertility declined due to the negative shock of transition, the relationship between fertility and FLFP becomes insignificant.

Table 5-3. Fertility rate and FLFP (15-64): econometric estimates

	All countries 1990-2010		Without RS & MK 1990-2010		All countries 2000-2010	
	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
Fertility rate	-1.052	4.641	5.606	6.134	-0.989	3.043
	(0.53)	(6.31)***	(5.74)***	(7.90)***	(0.27)	(1.39)
GDP pc	1.448	-1.069	-1.031	-1.058	2.069	0.256
	(7.27)***	(2.95)***	(3.65)***	(2.95)***	(7.98)***	(0.45)
GDP pc²	-0.063	0.109	0.096	0.110	-0.084	0.012
	(4.62)***	(4.35)***	(4.95)***	(4.41)***	(4.51)***	(0.33)
_cons	57.322	55.653	56.303	55.285	53.904	54.267
	(18.75)***	(33.54)***	(29.32)***	(31.67)***	(9.62)***	(19.20)***
R^2	0.11	0.24	0.09	0.33	0.30	0.09
N	256	256	221	221	143	143

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Even if I keep the full period of analysis, there is no plausible theoretical mechanism through which fertility growth could boost FLFP, as the theoretical expectation is that of

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[44] In the previous section I showed that three outlier countries, FYR Macedonia, Serbia and Slovenia, drove the relationship between economic development and FLFP. As a result I also conduct the analysis of fertility without these countries, because GDP per capita acts as the control variable. The coefficients for the fertility rate remain positive and significant in that analysis.

a negative relationship. On the other hand, there is a clear case for reverse causality during the period of the 1990s – greater uncertainty and deteriorating living conditions during the early stages of transition could have resulted in fewer children being born. In light of this evidence, I reject H8.

5.4   Length of maternity leave

In this section I test the following hypothesis:

H9: *Length of maternity leave determines the level of female economic activity.*

Theoretically, social policy that supports female employment, such as maternity leave, can affect women's employment both positively and negatively. The fact that women can take longer maternity leave to care for their children might encourage more women to work, but it may also increase employers' discrimination against them, since employing women becomes costlier. The effect that prevails empirically may depend on a myriad of other factors, including, as I argue in my theoretical model, the structure of demand for female labour in an economy.

The question of duration of maternity leave and its impact on women's economic opportunities has most frequently been analysed at the level of individual countries. For example, Schönberg & Ludsteck (2007) show that several changes in maternity leave legislation in Germany since the 1970s have had a short-term effect on delaying women's return to work which has led to a reduction in their wages. Nevertheless, they found no evidence that longer maternity leave reduced the supply of female labour in the longer run. Evidence from cross-country studies also points to the negative effect of longer maternity leave on women's wages, but not on their supply of labour (Ruhm, 1996). In fact, 'mother-friendly' policies are shown to have the opposite effect – they enable women to become more economically active (Mandel & Semyonov, 2005).

When it comes to EU policy, ILO's Maternity Leave Convention (Convention 183), for which all EU member states are the signatories, states that the legal minimum for maternity leave is 14 weeks. Specifically ILO's Recommendation 191, which is based on

the Maternity Leave Convention from year 2000, states that the duration of maternity leave should be increased from 14 to 18 weeks (Schulze & Gergoric, 2015, p.47). Furthermore, the EU's current growth strategy *Europe 2020* recognises maternity leave as a policy that can boost female employment by improving women's ability to reconcile work with family responsibilities.

On the other hand, under socialism, Eastern European women had very generous maternity leave and childcare benefits which supported their participation in the labour force (Brainerd, 2000). Eastern European countries have had much longer maternity leave than the ILO prescribed minimum throughout transition probably due to path dependence from that period. The average maternity leave in the Eastern European EU member states in 2014 was 27 weeks, which was 4 weeks more than the EU average and 6.6 weeks longer than maternity leave in non-Eastern European countries (Schulze & Gergoric, 2015). While this study is recent, the duration of maternity leave has not changed during the 2000s in most Eastern European countries.[45]

Even though the EU recognises the need for improved work-family reconciliation policy, including the duration of maternity leave, this 'over-generosity' of maternity leave in Eastern Europe has been seen by policy makers in the region as the reason for low FLFP in their countries, as discussed in country reports to the EC. Nevertheless, there is little empirical evidence to support the argument that maternity leave duration is the primary culprit for low FLFP.

Graph 5-8 shows the relationship between FLFP (15-64) and maternity leave duration in 2004.[46] Since there have been almost no changes in the duration of the leave during the period of observation, the first two decades of transition, we can only analyse cross-country differences in the duration of maternity leave in comparison to the variation in FLFP (15-64). In fact, statistical correlation between the two variables in 2004 is negative and significant at 5%, but it becomes insignificant when we exclude the outlier

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[45] In fact, it was only since 2010 that the duration of maternity leave has been substantially increased in Bulgaria (from 19 to 58.6 weeks) and in Poland (from 16 to 52 weeks), while it has been drastically reduced in Croatia (from 58.6 to 14 weeks).

[46] The 2009 data for maternity leave duration (the next available year in the ILO database) for the Czech Republic and Poland are missing. However, other sources indicate that there was no change in the leave's duration in these two countries between 2004 and 2009. The Polish law changed in 2013 when the duration of maternity leave was drastically increased. There has not been a similar policy implemented in the Czech Republic.

countries Croatia, FYR Macedonia and Serbia, whose maternity leave was significantly longer than the rest of the countries at the time.[47] I reject H9 because I do not find evidence that shorter or longer maternity leave is consistently associated with higher FLFP.

Graph 5-8. FLFP (15-64) vs duration of maternity leave, 2004
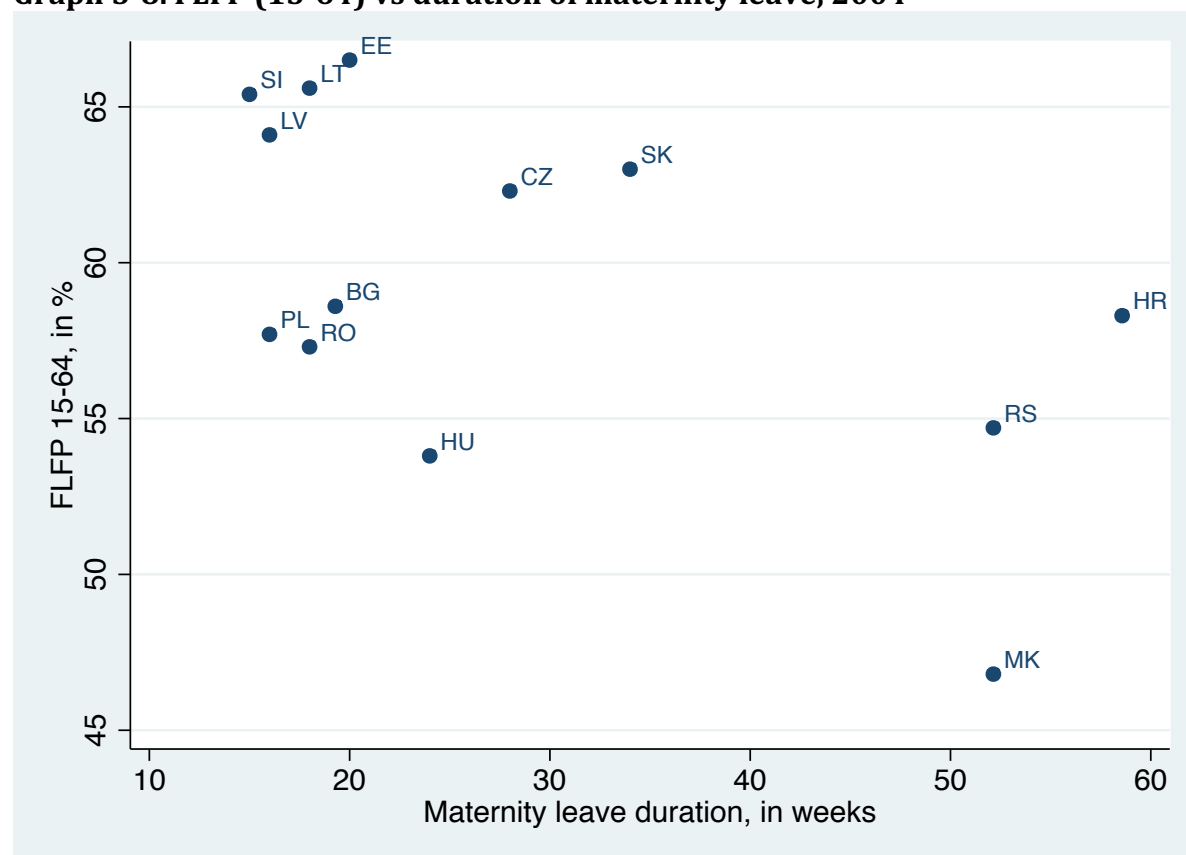
Source: Eurostat and Working Conditions Laws Database, TRAVAIL legal databases, ILO.
Note: Data for Croatia, FYR Macedonia and Serbia are obtained directly from these countries' legislative documents. They are not available from the ILO database.

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[47] Results are also insignificant when maternity leave duration is compared to FLFP and GGAP (15-64) of prime age women (25-54) without the three outlier countries.

5.5   Access to childcare and part-time work

In this section I examine the following hypothesis:

H10: *Better access to childcare leads to more economically active women.*

While it has become a stylised fact that improving access to childcare is a prerequisite for increasing women's economic activation, Mills et al. (2014) argue that the relationship between FLFP and spending on childcare presents "a considerable puzzle" and that the causal mechanisms between these two variables have not yet been fully uncovered (p.42). The report particularly emphasises Eastern European countries "where the level of childcare usage, enrolment and public investment is actually very low", even though some of them have very high FLFP rates (p.42). While Mills et al. (2014) attribute these trends to the socialist legacy of high FLFP in the region, I reject this path dependent explanation in Chapter 4 of this thesis and in fact argue that the structure of these countries' economies and demand for female labour have a lot more explanatory power when it comes to high FLFP in some Eastern European countries.

In this section, I analyse data on childcare access in order to see whether greater access to childcare is indeed associated with higher economic activation of women. Operationalising a measure of access to childcare is a complex endeavour, because there are a number of indicators that capture its different aspects. Child enrolment in formal care is measured separately for 0-3 years olds vs pre-primary school children. Expenditures on childcare as a share of GDP are another variable which is not necessarily correlated with enrolment numbers, as pointed out by Mills et al. (2014). Access to informal childcare should also be taken into consideration due to the important role of extended family in providing childcare. Finally, none of these indicators measure demand for childcare or even shortage of childcare facilities, which is the actual essence of access to childcare.

I focus on cross-country differences in access to childcare and juxtapose these data to the countries' respective FLFP rates because there is not enough data available to examine variation within individual countries over time. Data on children in formal care, disaggregated by 0-3 year olds vs 3-6 year olds, are available from Eurostat for the

period 2005-2008. Data from the OECD Family Database on public expenditures on child care and early education as a percentage of GDP in 2007 are presented in Mills et al. (2014). They also present data on informal childcare from a Eurostat database, which I use to supplement my findings.

Graph 5-9. FLFP (15-64) vs children not in formal care, 0-3 years (left panel) and 3-6 years (right panel), period average 2005-2008
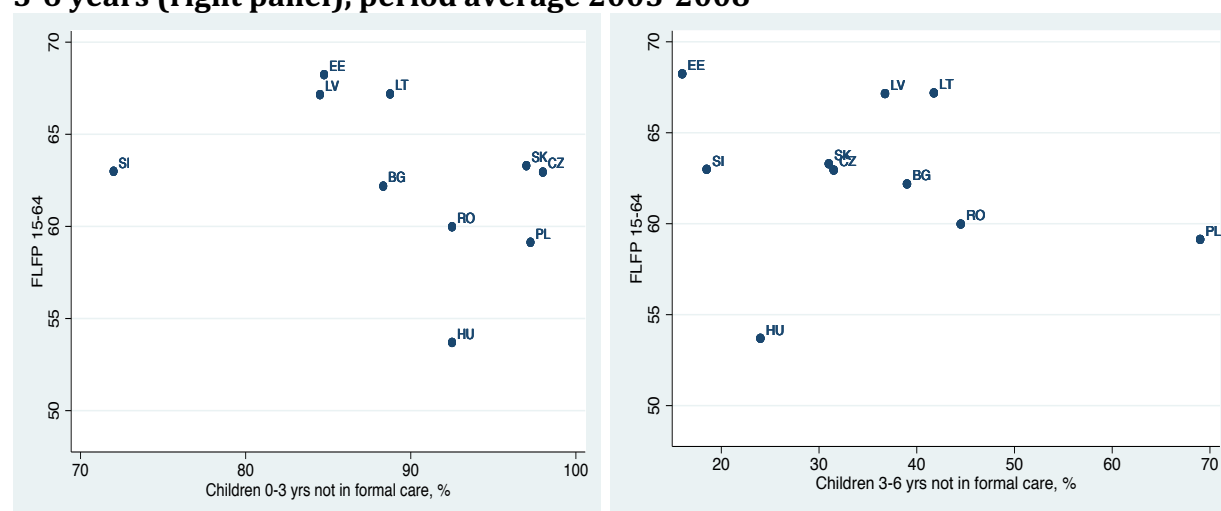
Source: Eurostat.
Note: All available countries and years.

Graph 5-9 shows the share of children who were not enrolled in formal care facilities during the period 2005-2008. While a negative correlation between FLFP and the share of children who are not in formal care can be observed, especially for the younger cohort of children (left panel), it is almost self-evident that countries where more women work would use formal childcare to a greater extent. Furthermore, according to Mills et al. (2014), none of the Eastern European EU member states have reached the Barcelona target of having 33% of children in formal care. The Barcelona targets were set by the EC in 2002 with the goal to remove barriers to FLFP in the EU. Slovenia had made most progress by 2010, while Estonia also moved ahead when it came to the 3-6 year olds, but not when it came to the youngest cohort of children (0-3 years).

Furthermore, according to the data from the OECD Family Database for 2007, shown in Mills et al. (2014, p.26), the share of public expenditure on childcare and early education services as a share of GDP per capita was the lowest in Estonia and Poland. These two countries were at opposite ends of the variation in FLFP rates in Eastern

Europe.[48] Furthermore, both countries spent their entire budget on pre-primary education services only. The highest spenders on the other hand were Bulgaria and Romania, countries that also have had very different FLFP trajectories throughout transition. The Mills et al. (2014) study therefore does not find any relationship between spending on childcare and FLFP in Eastern Europe. According to the indicator of the percentage of children in informal childcare (Mills et al., 2014, p.28), which was sourced from Eurostat, Romania had the highest portion of children in informal childcare in 2007, followed by Slovenia and the Czech Republic. Latvia and Lithuania, countries with some of the highest FLFP rates in Eastern Europe, were, on the other hand, among those with the lowest share of children in informal childcare, possibly because of their higher instance of economically active older women which are not able to act as grandmothers (as I show in Chapter 4). Finally, while Estonia has one of the highest FLFP rates in the EU, EC recommendations regarding Estonia's implementation of *Europe 2020*, emphasise access to childcare as a particular problem (European Commission 2014c; Official Journal, 2014c).

According to Tang & Cousins (2005), part-time work is not prevalent in Eastern Europe and childcare is not associated with flexible working arrangements. They show that the desire for a secure job is still prevalent in the region with part-time work being an individual employment strategy for those with a disability or in retirement, for example, rather than a means of reconciliation between work and family responsibilities (p.536). Eurostat data shown in Graph 5-10 confirm this argument. I find no significant correlation between the portion of women in part-time employment and FLFP (15-64) or between the portion of women in part-time employment and GGAP (15-64). Furthermore, while part-time employment makes up a small portion of total employment in the entire sample of countries, it could be slightly higher in the Baltic countries simply because part-time employment and flexible working arrangements are more feasible in the service economy that is prevalent there, than in manufacturing, which is more prevalent in CEE.

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[48] Estonia and Poland have continued to be at opposite ends of the variation in FLFP rates in Eastern Europe.

Graph 5-10. FLFP (15-64) vs female part-time employment, period average 2003-2008
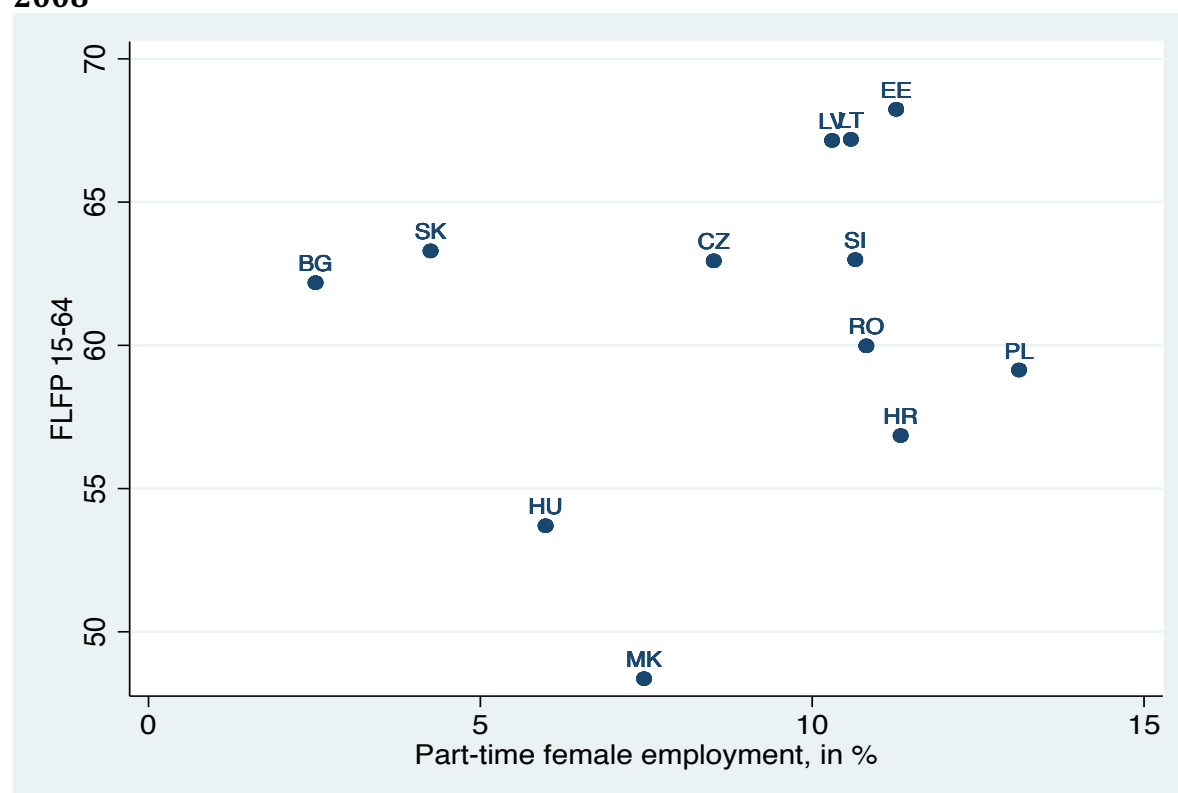
Note: Female part-time employment as percentage of total female employment. Data is shown as a period average 2003-2008 because it is the only available data.

It is important to keep in mind that the relationship between FLFP and access to childcare is a strong candidate for reverse causality, because it is entirely plausible that countries where more women work, the services are used to a greater extent. Employed women could also be more politically active and demand better work-family reconciliation policies. Therefore, in light of the evidence I presented in this section, I reject H10.

In conclusion, working out the causality with fertility, family policy such as duration of maternity leave and availability of formal childcare is a complicated endeavour, as can be seen from the literature review and the empirical analysis presented in this chapter. While a finding that longer maternity leave is associated with lower FLFP may support the conservative argument that social welfare creates disincentives to work, this argument is in conflict with the growing body of evidence, including that presented in this chapter. The evidence indicates that female entry into the labour force in fact boosts fertility in upper-middle and high-income countries. Also, it has become clear that Say's law did not apply in the case of Eastern Europe and its transition to

capitalism. Abundant labour supply did not automatically create demand for that labour. By extension, I argue that creating better childcare facilities may free up some women for the labour force, but they will not become employed if jobs are not available to them and if their skills are not in demand. Following these insights, findings in this chapter which focus on the issue of work-life reconciliation and its relationship with female economic activity could contribute to a more extensive version of my model. When women with the right skills for their economy have opportunities to work, family policy also serves to support their entry into the labour force.

5.6   Female educational attainment

In this section I test the following hypothesis:

H11: *The greater the female educational attainment, the more women are economically active.*

Women's increased entry into the labour force during the second half of the 20th century has been credited to their growing educational attainment (Goldin, 1995). The theoretical model that is proposed in this thesis also recognises the role of education in improving women's entry into the labour force. However, it moves away from the human capital theory and focusses on the type of education and skills gained through the educational system, using the general vs specific skills theoretical framework from the comparative political economy literature. In this section, I analyse the data on educational attainment in Eastern Europe, and in particular female educational attainment, in order to test the above-stated hypothesis that more female educational attainment is associated with higher FLFP. I then use the findings from this section as inputs for the quantitative and qualitative empirical testing of my theoretical model, which I present in Chapters 6 and 7.

Eurostat groups educational attainment into three categories, following the International Standard Classification of Education (ISCED) 1997[49] classification: i) pre-primary, primary and lower secondary education (levels 0, 1 and 2); ii) upper secondary and post-secondary non-tertiary education (levels 3 and 4), and iii) first and second stage tertiary education (levels 5 and 6). The data for most countries in my sample are available from 2000 onwards.

Graph 5-11. Women (15-64) with tertiary education (in %), 2008
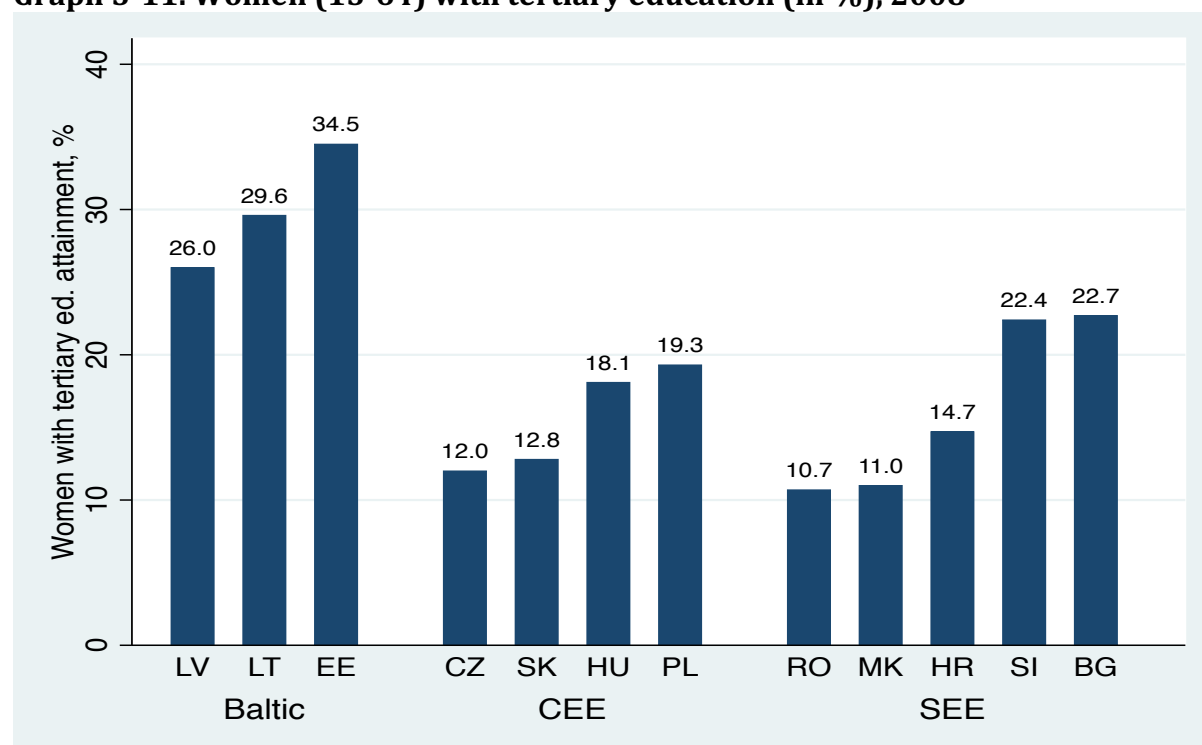
Source: Eurostat.
Note: Data is not available for Serbia.

Eastern European countries differ significantly in terms of educational outcomes of their populations, especially when it comes to tertiary education. Graph 5-11 shows the share of women (15-64) with tertiary education in 2008. Estonia led the way with 34.5% of its working age women having a tertiary qualification. Latvia and Lithuania also stand out in comparison to CEE, while Slovenia and Bulgaria had slightly better outcomes in 2008 than Hungary and Poland. Slovakia and the Czech Republic had a surprisingly low share of women with tertiary education in their populations in 2008, given their level of economic development. They were only 1-2 percentage points better

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[49] The ISCED is a statistical framework for organising information on education maintained by UNESCO. It is a member of the international family of economic and social classifications of the United Nations. ISCED 1997 is the second version of this classification.

off than FYR Macedonia and Romania, countries which are at significantly lower levels of economic development. Croatia was doing slightly better than Slovakia and the Czech Republic, while the data are not available for Serbia.

When it comes to changes over time, Graph 5-12 indicates that progress has been made in all countries except Croatia (right panel). Baltic countries saw the steepest increases in tertiary educational attainment for women, although their rates of women's tertiary educational attainment were higher than in other countries even in 2000.

Graph 5-12. Share of women with tertiary education in CEE and Baltic (left panel) and SEE (right panel), 2000-2008
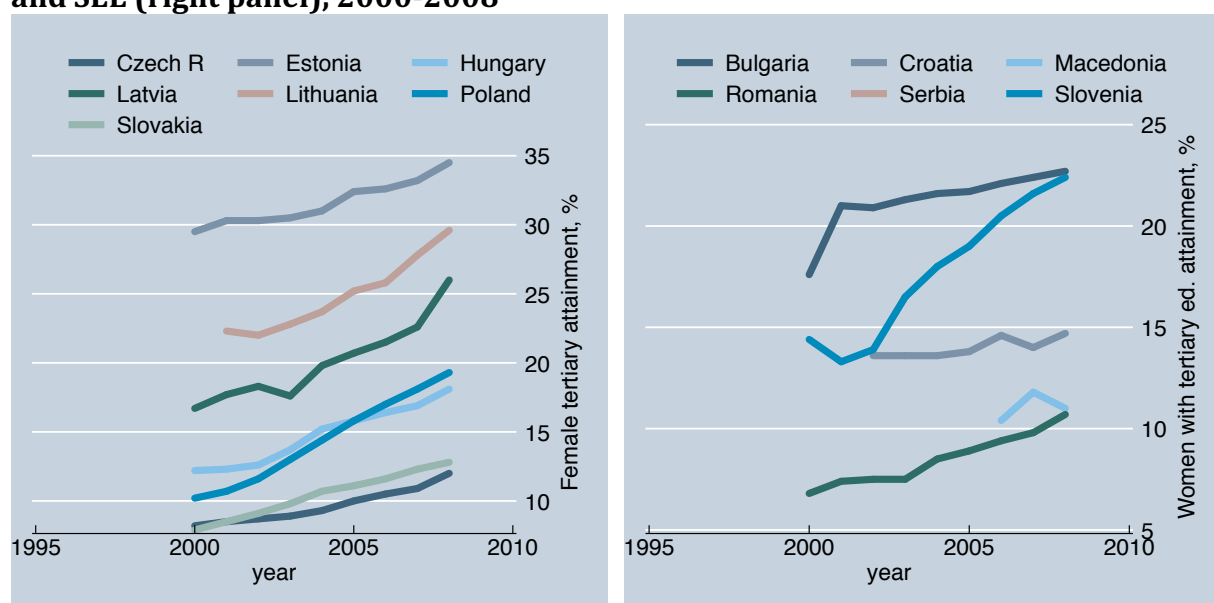
Source: Eurostat.
Note: Data is not available for Serbia for the entire period of observation.

Furthermore, gender gaps in tertiary education in 2008 favoured women in most of the countries I analyse, while they were almost non-existent in Slovakia, the Czech Republic, Romania and FYR Macedonia. In Baltic countries, particularly Estonia, the balance strongly favoured women.

Graph 5-13. Gender gap (15-64) in tertiary education (in %), 2008
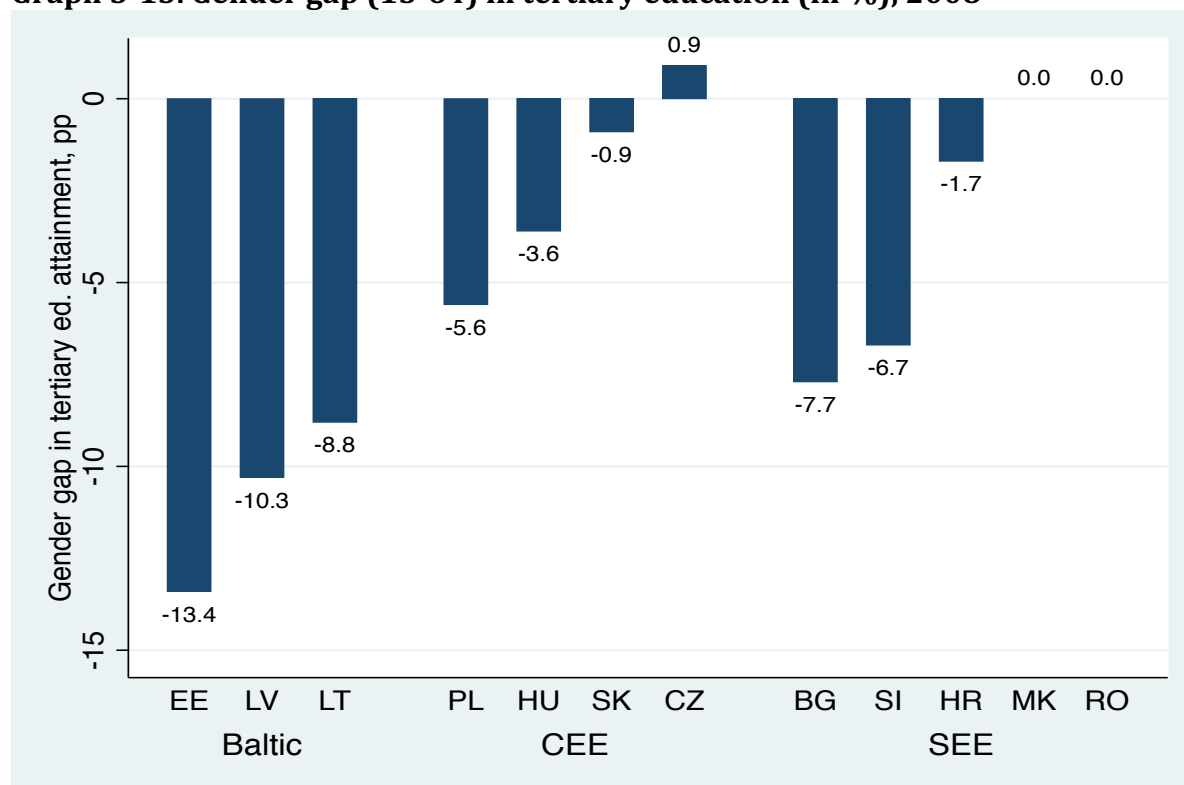
Source: Eurostat.
Note: Data is not available for Serbia.

Nevertheless, these trends in tertiary educational attainment are not fully compatible with female economic activity trends in the region, although it is an empirical and theoretical maxim that women with tertiary education are a lot more likely to work. While the Baltic countries have surpassed the rest of the region in terms of female educational outcomes, as well as FLFP rates, the cases of Hungary and Poland, which have significantly higher shares of women with tertiary education, are puzzling since their FLFP is well below those in Slovakia and the Czech Republic. This positive correlation between female tertiary education and FLFP seems to be more pertinent in SEE, since Bulgaria and Slovenia lead the way in both.

A more detailed analysis of FLFP by educational attainment is shown in Graph 5-14. Since the largest portion of women in these countries has secondary education, FLFP for women with secondary education is the most important in terms of their contribution to total FLFP levels. Significant variety can be seen within this cohort, with Hungary, Poland and Romania falling significantly behind other countries. Although there are substantial discrepancies in levels of education of women with primary school attainment only, their share in total population and employment is very low, so they do

not significantly affect the overall trends. It is surprising to see such low FLFP of women with primary education in Poland, given that country's large agricultural sector.

Graph 5-14. FLFP (15-64) rates by educational attainment, in 2008
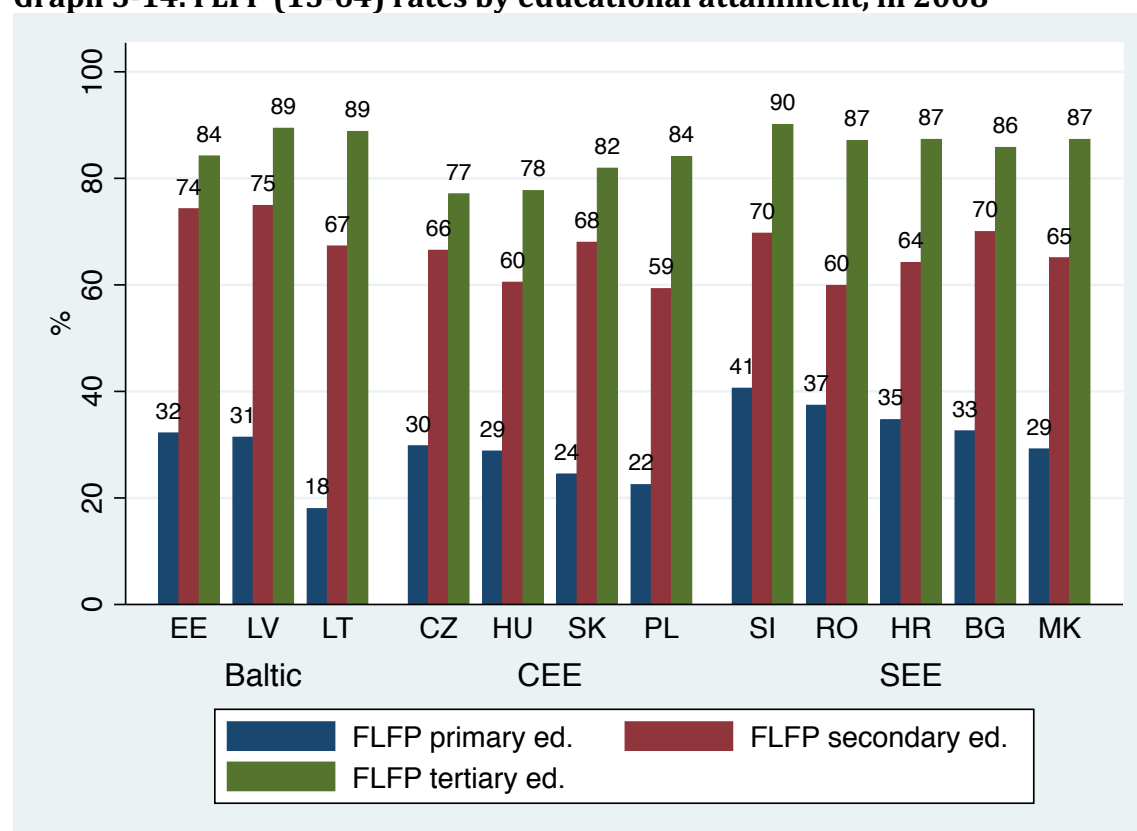
Source: Eurostat.
Note: Data is not available for Serbia.

It is particularly interesting to note the significant variety in FLFP rates of the most educated women across the region because women with tertiary education are a lot more likely to supply their labour to the market as inactivity depletes their human capital. While the rates in Latvia, Lithuania and Slovenia stand at almost 90 percent, they are the lowest in the Czech Republic and Hungary at 77 and 78 percent respectively. This difference in FLFP rates is further amplified when we consider that in those countries where FLFP rates for women with tertiary education are higher, there are significantly more women that have tertiary education in the first place. Finally, all the SEE countries, except FYR Macedonia, have relatively high FLFP rates for women with tertiary education, but even in FYR Macedonia, the portion of women with tertiary education that are economically active is higher than in CEE.

When it comes to gender gaps in LFP by educational attainment, Graph 5-15 shows the Czech Republic and Hungary as having the highest LFP gaps between men and women

with tertiary education. When it comes to secondary education, Hungary leads the way with a 26pp GGAP. The FYR Macedonia is an outlier with an exceptionally high GGAP for individuals with primary education, while its GGAP for other educational attainment cohorts are moderate.

Graph 5-15. GGAP (15-64) by educational attainment, in 2008
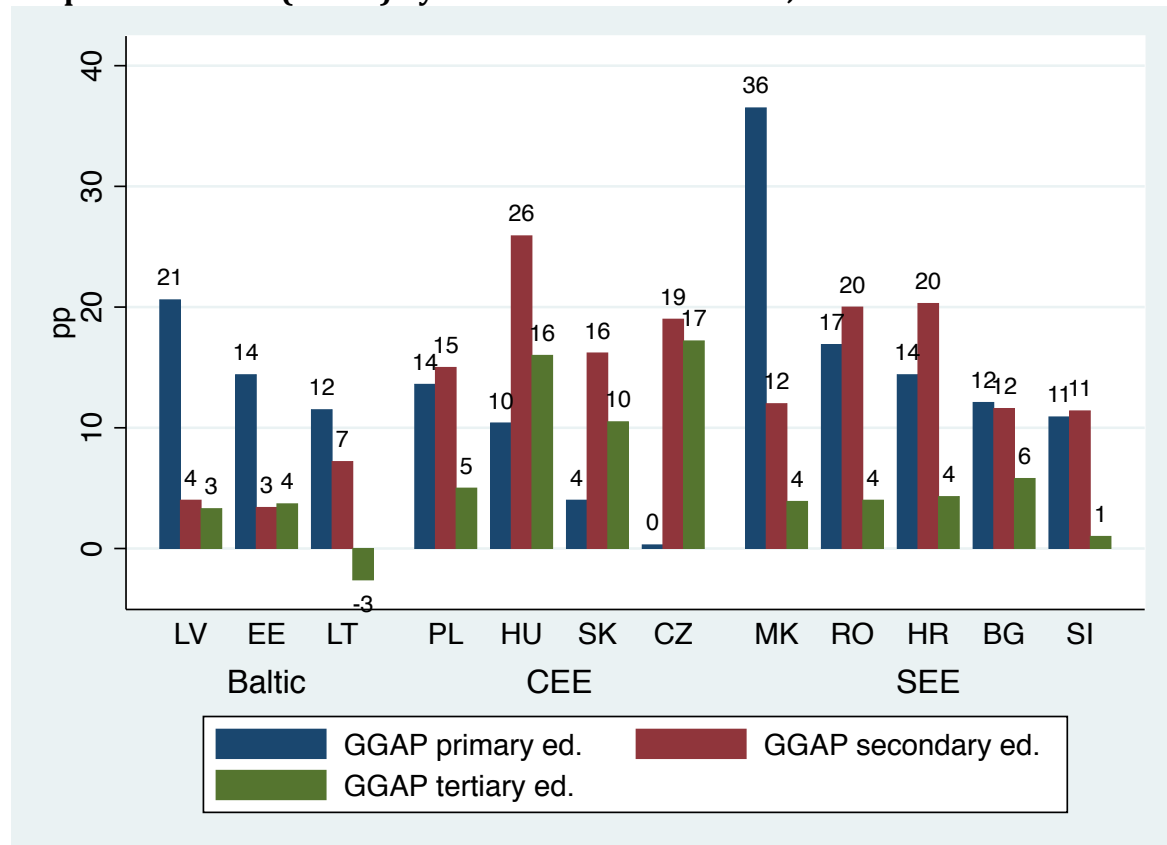
Source: Eurostat.
Note: Data is not available for Serbia.

In summary, I find a strong link between female tertiary educational attainment and FLFP, with the Baltic countries, Slovenia and Bulgaria, leading the way in terms of their female educational attainment levels, while CEE countries in particular are lagging behind. Nevertheless, apart from the higher levels of educational attainment, I also detect the presence of underutilised women who have tertiary education and who are not economically active in CEE, particularly in Hungary and the Czech Republic. In other words, differences in the educational attainment of women cannot in their own right account for the diversity in FLFP outcomes across these countries. The evidence leads me to only partially confirm H11. This insight is also important for the argument from my theoretical model, which posits that it is not just the quantity of education that matters for FLFP, but the way in which this quantity of education translates into job

generation in knowledge-intensive services. I return to this point in the next two chapters when I test the empirical validity of my theoretical model.

5.7 Summary

In this chapter I analysed to what extent some of the hypothetical drivers of FLFP commonly found in the macroeconomic literature affected FLFP trends in Eastern Europe during transition to capitalism. Using econometric analysis, I ruled out the possibility that economic development (proxied by GDP per capita) automatically determined the extent of female participation in the labour markets in the region. Furthermore, when analysing the data from the EVS, I did not find any substantial differences in attitudes towards women's work across the region that could have accounted for the observed variation in FLFP rates.

I then moved on to the topic of work-life reconciliation and showed econometrically that fertility rates had a positive effect on FLFP. Using descriptive statistics I found a negative relationship between the duration of maternity leave and FLFP while I did not find compelling evidence that greater access to childcare has a positive effect on FLFP.[50] I concluded that the causality between work-family reconciliation policies and FLFP is difficult to disentangle because it merely reflects other more structural drivers of FLFP and fertility trends. Finally, also using descriptive statistical analysis, I identified a strong positive relationship between higher female educational attainment and FLFP, a finding that I will use in the next chapter to strengthen empirical support for the educational expansion component of my theoretical model.

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[50] I examined three indicators: i) share of children in formal childcare, which shows a positive correlation with FLFP; ii) share of children in informal childcare, which does not show any correlation with FLFP; and iii) expenditure on childcare as a share of GDP, which also does not show any correlation with FLFP.

Chapter 6. Assessing the empirical robustness of the theoretical model: a large-N analysis

Following Lieberman's (2005) nested analysis approach, in this chapter I test the empirical robustness of my theoretical model with a preliminary LNA on 13 Eastern European countries during the period 1997-2008. My theoretical model consists of four sets of sequential relationships between two variables. Therefore, I conduct four empirical analyses on the following relationships:

i) industrial upgrading and FLFP, represented in the NE quadrant of my model;

ii) industrial upgrading and educational expansion, represented in the SE quadrant of the model;

iii) KIS and FLFP, represented in the NW quadrant of the model;

iv) KIS and educational expansion, represented in the SW quadrant of the model.

The relationship between KIS and educational expansion is analysed as an extension of the analysis on the relationship between KIS and FLFP, because I argue that educational expansion is the intervening variable that affects the extent to which KIS contribute to FLFP.

I cannot use one econometric specification, which includes all of the relationships I am interested in examining, because of the sequence of the posited causal relationships between the variables in my model. In fact, educational expansion acts as the dependent variable in one specification and as the independent variable in another. Moreover, the aim of this chapter is to assess the direction and significance of association between my variables of interest, while I supplement the econometric analyses presented in the chapter with a qualitative 'thick' account of some of these relationships in Chapter 7.

The chapter starts with the operationalisation of the variables that constitute my theoretical model (Section 6.1), followed by a general overview of sectoral trends across the countries in my sample (Section 6.2). I then conduct the econometric analyses by each quadrant of the theoretical model (Sections 6.3-6.6) and offer some concluding remarks (Section 6.7).

6.1   Data and variables

In order to conduct this LNA I use Eurostat's data on FLFP and employment by sectors of economic activity disaggregated by gender, which is based on household level LFSs from the respective countries.

Eurostat classifies economic activities according to NACE.[51] A number of NACE versions have been developed since 1970, with a major reclassification of economic activities NACE Rev. 2 taking place in 2007. The reason for this reclassification was the need for the data to better reflect the changing nature of economic activities in the EU by accounting for the 'knowledge economy' oriented sectors of activity. The first reference year for NACE Rev. 2 compatible statistics is 2008, after which NACE Rev. 2 started being consistently applied to all relevant statistical domains. Therefore, for most countries in my sample an uninterrupted time series of employment by sector of economic activity is available for the maximum period from 1997 to 2008.[52] It is fortunate that the break in the series came in 2008, the year when the Great Recession began, as my empirical analysis focusses on the period before the crisis, so that the complex effect of the crisis is not confounded with the 'transitional' causal mechanisms posited in my theoretical model. When it comes to the starting year of the dataset, I discussed in Chapter 4 why I am predominantly interested in changes in FLFP during the 2000s. For some Eastern European countries, 2000 is the year when their FLFP rates started to recover after the initial negative shock of transition which lasted throughout the 1990s, while for others the decline or stagnation of FLFP continued well into the 2000s. Additionally, LFS data is more reliable after 2000 because, by then, Eastern European countries in my sample had fully synchronised their datasets with EU standards.

The drawback of using sectoral employment data before 2007 is that the reclassification of NACE activities came only during 2007-8. Therefore, I am not able to precisely

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[51] The acronym is derived from the French *Nomenclature statistique des activités économiques dans la Communauté européenne.*

[52] Data is available for the following years: 2000-2007 for Bulgaria and Poland, 2002-2008 for Croatia, 2006-2008 for FYR Macedonia, 2004-2008 for Serbia, from 1998 onwards for Latvia, Lithuania and Slovakia and 1997-2007 for Slovenia. For the Czech Republic, Estonia, Hungary and Romania, the data is available for the entire period 1997-2008.

separate knowledge-intensive sectors from the rest of the service economy. According to the new classification, an activity is classified as knowledge intensive if tertiary-educated persons employed[53] represent more than 33% of the total employment in that activity.[54] Based on this Eurostat definition of sectors that are classified as KIS (see list of activities in Appendix A3), I create an aggregate estimate of employment in KIS, which include all public services (public administration, education, health and social services) as well as high productivity private services, such as financial intermediation, real estate and transportation services. Nevertheless, this is only an approximation, because the more detailed disaggregation of the sectoral employment is not available before 2008. Finally, because KIS are expected to have a higher value added than other services, I include the share of services in value added (percentage of GDP) obtained from the World Bank's World Development Indicators database as an alternative measure of the size of the KIS economy.

Furthermore, following Eurostat's definition and insights from CPE literature presented in Chapter 2, I account for both public and private sector components of KIS and analyse them both together and separately. This is because the type of financing structure of higher education in a country has been shown to affect the types of KIS jobs that are created in an economy, i.e. whether they are predominantly generated in the public or the private sector (Ansell & Gingrich, 2013).

Because of the variation in employment-to-population ratios (also referred to as employment rates) across the countries in my sample, I include a measure of the share of employees in a specific sector as a share of the total working age population, in addition to their share in total employment. This is because two countries can have identical shares of employees in manufacturing out of all employees, but when the overall employment-to-population ratio is much lower in one country, that indicator hides the fact that a significantly lower portion of working age people work in manufacturing in that country. I calculate these 'share of the working age population' indicators for the different sectors by dividing the number of employees in a sector with the total working age population (or the number of female employees in a sector with

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[53] According to ISCED97, levels 5+6 or ISCED11, levels 5 to 8.
[54] The definition is built based on the average number of employed persons aged 15-64 at aggregated EU-27 level in 2008 and 2009 according to the NACE Rev. 2 at 2-digit, using the EU Labour Force Survey data.

the total number of working age women). The additional benefit of including this alternative specification of the variables is that it accounts for the full variation in GGAPs, which are not always fully compatible with the variation in FLFP (see Chapter 4).[55]

As a measure of industrial upgrading, I opt for the Massachusetts Institute of Technology (MIT) Economic Complexity Index (ECI) constructed by Hausmann et al. (2011). Researchers from Harvard University and MIT conducted an extensive study on economic complexity across the world. They created ECI by analysing the content of foreign trade of 128 countries. The basis for ECI is the quantity and complexity of exported goods and the frequency of exports. Consequently, services and non-export goods are not included in the index. While ECI is highly correlated with the United Nations Conference on Trade and Development (UNCTAD) data on the skill content of exports, it aggregates the low vs medium vs high skill components of such data into one non-monetary measure, which combines the total value of exports with their content. Furthermore, this index was developed because of the inadequacy of existing measures to capture the different components of industrial upgrading and it has already been used in its current format in econometric models which estimate structural change and economic growth (Hausmann et al., 2011). The data is available for all countries in our sample for the entire period of analysis 1997-2008, except for Serbia, for which data is available for 2007 and 2008 only.

Finally, when it comes to educational expansion, there is no agreement in the literature on how to measure the bias towards general or specific skills in an economy. Therefore, a vast array of indicators have been used to determine a country's skill regime while the human capital literature has focussed on the quantification of educational attainment (see Martinaitis, 2010 for overview). Because specific skills are associated with vocational training while general skills are associated with tertiary education, using measures such as the share of the total population as well as the share of women with tertiary educational attainment can also act as approximations of general skills education. Furthermore, Nelson & Stephens (2011) measure social investment in education as tertiary educational attainment and educational expenditures. This is also

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[55] This is the reason why I do not present the results for GGAP as an alternative specification of FLFP, as I did in the previous chapters.

why I use the terminology 'educational expansion' although I am also referring to the movement towards general skills education. I also analyse the share of spending on education as a percentage of GDP because I assume that Eastern European countries which inherited specific skill regimes from communism had to invest more in their education in order to re-direct their educational systems towards general skill regimes.

All the data on educational trends are obtained from Eurostat, while I offer a more nuanced account of the general vs specific skill regimes in different Eastern European countries in the qualitative analysis in Chapter 7. For most countries in the sample, data on educational attainment are available from 2000 onwards, while they are not available for Serbia at all.[56] Data on educational expenditures are also not available for Serbia, while for FYR Macedonia they are available only for years 2002 and 2003.[57]

The econometric analyses of the relationships posited in my model are conducted on a TSCS dataset using the same estimation techniques that were used in Chapter 5 to estimate the effect of economic development on FLFP. They are PCSE OLS and the FE estimator. The PCSE OLS is the most robust OLS estimator for panel data and it measures the relationship between the variables by taking into consideration both cross-country and over time variation (see Chapter 5 for a detailed presentation of these two estimation techniques). The FE estimator, on the other hand, assesses the variation within individual countries only, by controlling for time invariant country specific effects. I am interested in both cross-country and within country trends because my argument posits diverging trajectories across the countries in my sample. Additionally, my sample of 13 countries over the time span of 10 or less years is rather small, so variation within individual countries may not be sufficient to produce meaningful within country estimates. Finally, because I am interested in econometrically testing the direction of the relationships posited in my theoretical model as well as their significance levels, rather than estimating the magnitude of the individual coefficients, I do not comment on the size of the coefficients.

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[56] The data for Croatia are available from 2002 onwards, while the data for FYR Macedonia are available only from 2006.

[57] The data for Croatia are available from 2002 onwards, for Romania from 1999 (with missing data for 2006 and 2008) and for Slovenia from 2001 onwards. The data are available for the entire period of analysis 1997-2008 for the rest of the countries in the sample.

6.2   Female employment across the economic sectors

My theoretical model posits that in some Eastern European countries defeminisation of manufacturing via industrial upgrading and the concurrent absence of educational expansion towards general skills, which would have led to women's disproportionate entry into KIS, have resulted in lower FLFP rates. The model also hypothesises a virtuous cycle, which has resulted in high FLFP, where the absence of industrial upgrading has led to educational expansion towards general skills. This has advantaged women by leading to their disproportionate entry into KIS.

Graph 6-1 shows the size of manufacturing and KIS in terms of the total shares of working age women they employed in 2007.[58] The green bars include other sectors of the economy (e.g. agriculture) as well as the inactive and the unemployed women. I show the shares of these two sectors in the entire working population of women because I want to examine to what extent they contribute to the overall FLFP. Because the FLFP rate represents that portion of working age women who are active, Graph 6-1 indicates that, for example, in Poland 31.3% (7.9% in manufacturing and 23.4% in KIS) of the total working age women were employed in either manufacturing or in KIS. More than half of the total FLFP rate is made up of women that either work in manufacturing or in KIS because FLFP in Poland was 56.4% in 2007. In a country with a smaller share of agriculture in total employment, such as Estonia, the portion of FLFP that can be explained by employment in manufacturing and KIS was around two thirds in 2007. Therefore, I conclude that manufacturing and KIS are large contributors to overall FLFP rates in the countries from my sample.

Furthermore, Graph 6-1 indicates that there is substantial cross-country variation in female manufacturing employment as well as in KIS. Countries that have the longest blue and red bars combined are precisely those countries that have the highest overall FLFP rates: the Baltic countries and Slovenia (as well as Bulgaria in the context of the less developed SEE region which is lagging behind). FYR Macedonia is a strong outlier at the lower end of the spectrum, which is in line with its significantly lower total FLFP than in all other countries from the sample.

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[58] 2008 data are not available for all countries so 2007 data are shown instead.

Graph 6-1. Female employees in manufacturing and services as a share of total female working age population, 2007
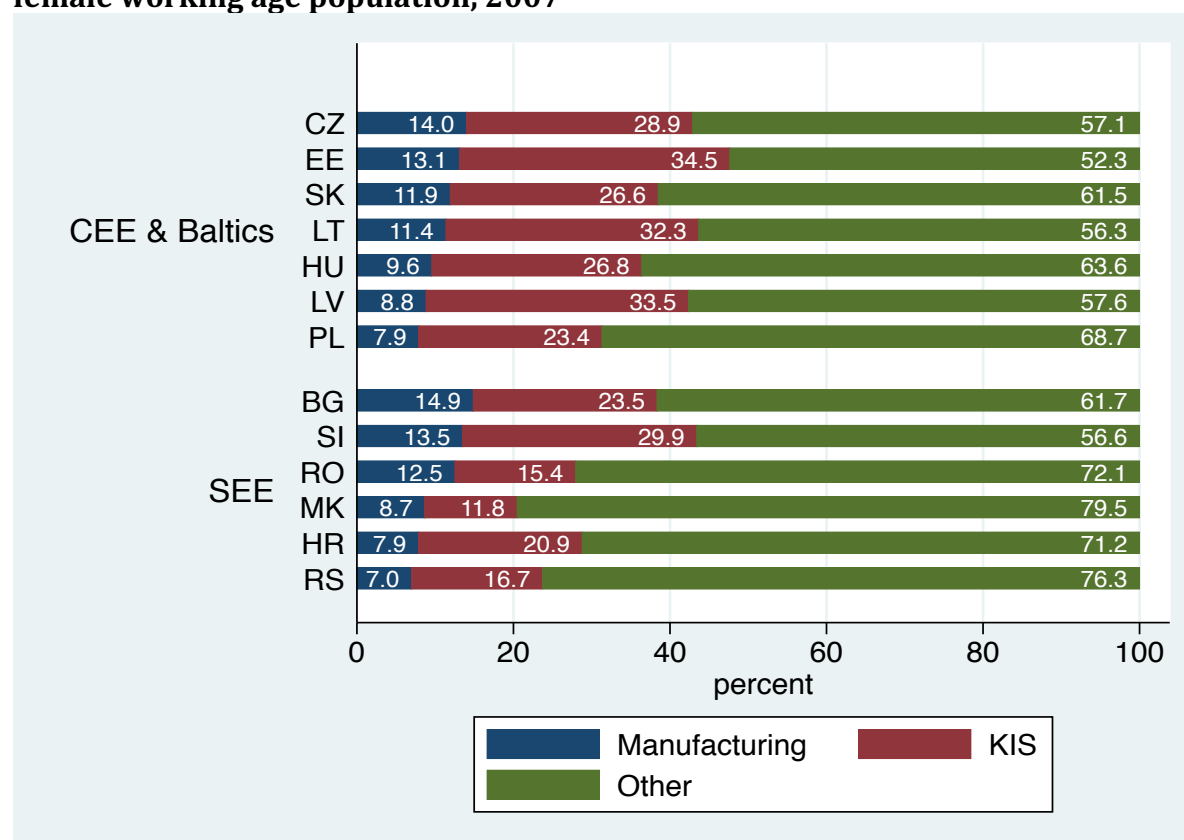
Source: Eurostat.
Note: 1) KIS include all public and selected private services. 2) Category 'Other working age women' includes women who are employed in non-knowledge intensive services, agriculture and other sectors of the economy, as well as the unemployed and inactive.

Finally, it is interesting to note that agriculture makes up a small fraction of the overall employment in all countries (below 10% and in most cases even below 5%) except in Poland, where it takes up almost 15% of total employment and in Romania where it is above 20%. The share of agriculture in both male and female employment has dropped in all countries during the period of observation except in Slovenia (which has a small agricultural sector), and to a lesser extent in Poland (which has a relatively large agricultural sector). This drop has possibly occurred because of modernisation and mechanisation of agricultural production across the region during the 2000s as well as the trend of growing urbanisation and abandonment of rural areas (Landesmann, 2000). Therefore, I expect that the manufacturing and KIS employment may have a somewhat smaller impact on FLFP rates in Poland and Romania because of their large agricultural sectors.

The final component of my model, which is educational expansion, was partially surveyed in Chapter 5, and those findings indicate enough variation in levels of educational attainment across the region that is also positively correlated with the greater participation of women in KIS. Lastly, the main statistical properties of all the variables that are analysed in this chapter are summarised in Table A-8 in Appendix A6.

This section serves to show that the countries in my sample do not have the same distribution of female employment across the sectors that are proposed in this thesis as the basic drivers of FLFP in the region. Although my argument is based on determining whether FLFP can be explained by diverging patterns of sectoral restructuring in Eastern Europe, FLFP is, in fact, composed of female employment in different sectors, while all these variables are driven by 'deeper' causal variables. They include industrial upgrading and educational expansion according to the propositions that stem from my theoretical model. I now move to the econometric analyses of these relationships.

6.3 Industrial upgrading and defeminisation of manufacturing employment

This section tests the following two hypotheses that stem from the theoretical model presented in Chapter 3:

H12: *Industrial upgrading leads to defeminisation of manufacturing.*

H13: *Industrial upgrading has a negative impact on FLFP.*

According to my theoretical model, industrial upgrading affects FLFP both directly and indirectly. Directly, it leads to defeminisation of manufacturing which, ceteris paribus, reduces the share of women in industrial labour. Of course, in practice, the net loss of female jobs in manufacturing will depend on whether defeminisation is taking place at a faster pace than the creation of new jobs in manufacturing, particularly during the initial stages. Nevertheless, I expect that the more complex the manufacturing, the more technology intensive it becomes and the less new jobs are created in the sector, so the negative effect of defeminisation on female labour prevails in the longer run.

Furthermore, given that some of the SEE countries in my sample are at very low levels of manufacturing complexity, I do not exclude the possibility of an initially positive effect of the opening up of the Eastern economies on female manufacturing labour in footloose low skill low wage industries, such as T&C, which might be confounded with the positive effect of industrial upgrading on feminisation of manufacturing employment. This effect could be in place until the level of complexity reaches a tipping point when low wage industries move to destinations where labour is cheaper. Based on these premises, an inverse U-shaped relationship between industrial upgrading and share of women in manufacturing is also conceivable. This is why I include a quadratic specification of the independent variable in the econometric model.

The proposed indirect effect that industrial upgrading has on FLFP in my model is based on the following line of reasoning that was presented in Chapter 3. Industrial policies such as company subsidies which were pursued by countries aiming to attract industrial FDI, global tax competition (Appel, 2011) and political pressures to compensate losers from these processes (Vanhuysse, 2006), created fiscal constraints which had to be contained due to pressures for macroeconomic stability from the EU (Appel, 2001; Bohle & Greskovits, 2012). Such circumstances did not allow for educational expansion towards general skills, which would have increased occupational mobility of labour towards the knowledge economy, or expansion of public employment, which would have favoured women.

In this section I analyse the direct part of the above-specified relationship between industrial upgrading and FLFP by econometrically testing whether industrial upgrading has led to defeminisation of manufacturing labour in my sample of countries during the period 1997-2008. I also test whether economic complexity can be directly negatively associated with FLFP. Therefore, I focus on the NE quadrant of my theoretical model.

The ratio between male and female employment in manufacturing varied substantially across my sample of countries at the end of the period of observation, with some countries being significantly more gender balanced in manufacturing employment than others (Graph 6-2).

Graph 6-2. Manufacturing, share of men vs women, 2007
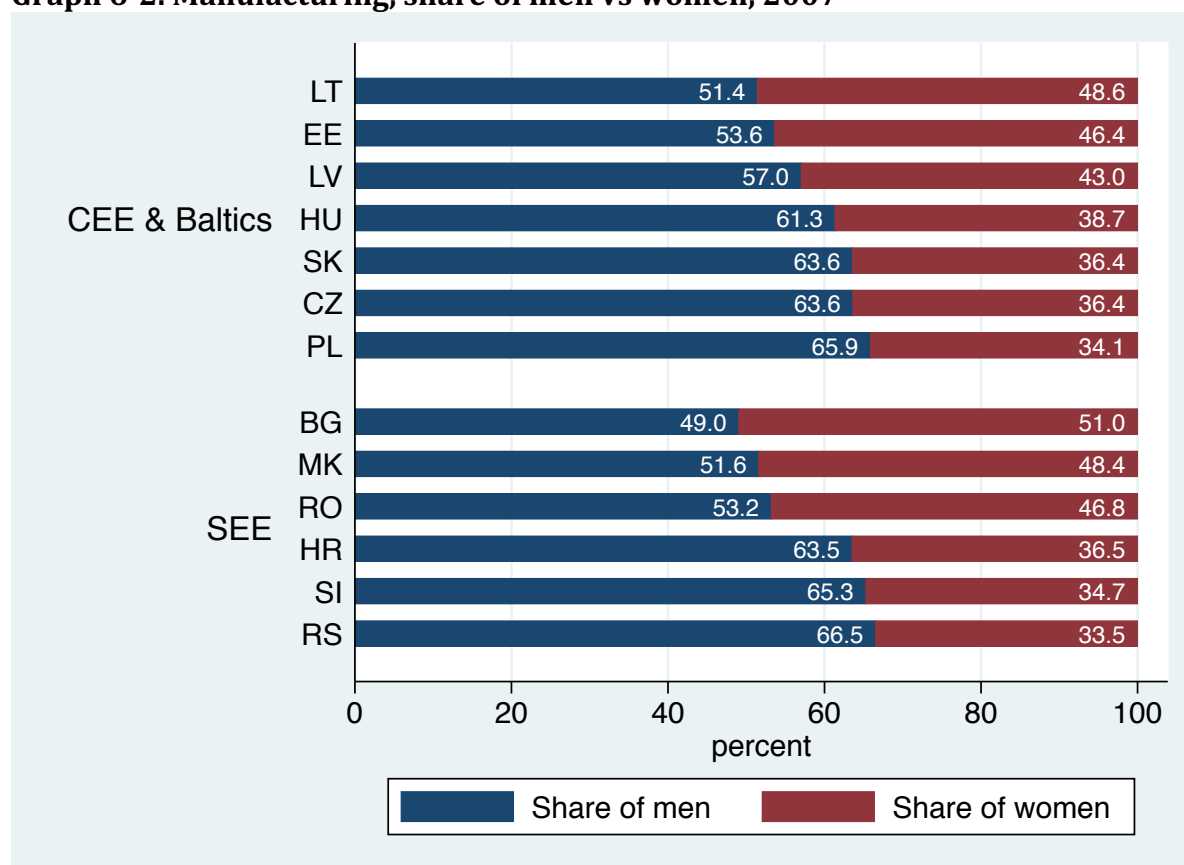
Source: Eurostat.

Regarding changes over time, Graph 6-3 shows that between 1997 and 2008 the share of manufacturing in total employment remained stagnant in the Czech Republic, Slovakia, Poland (left panel) and in Bulgaria (right panel), while it slightly dropped in the rest of the countries in my sample. It was not necessarily followed by employment increases because industrial upgrading included technological advances and company restructuring, particularly of the socially-owned companies that were being privatised. This is how stagnant or downward sloping trends could have characterised even those countries that went through industrial upgrading, such as the CEE countries and Slovenia.[59]

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[59] All employees and women in manufacturing as a share of the total working age population are shown in Graphs A-13 and A-14 in Appendix A6.

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Graph 6-3. Share of manufacturing in total employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
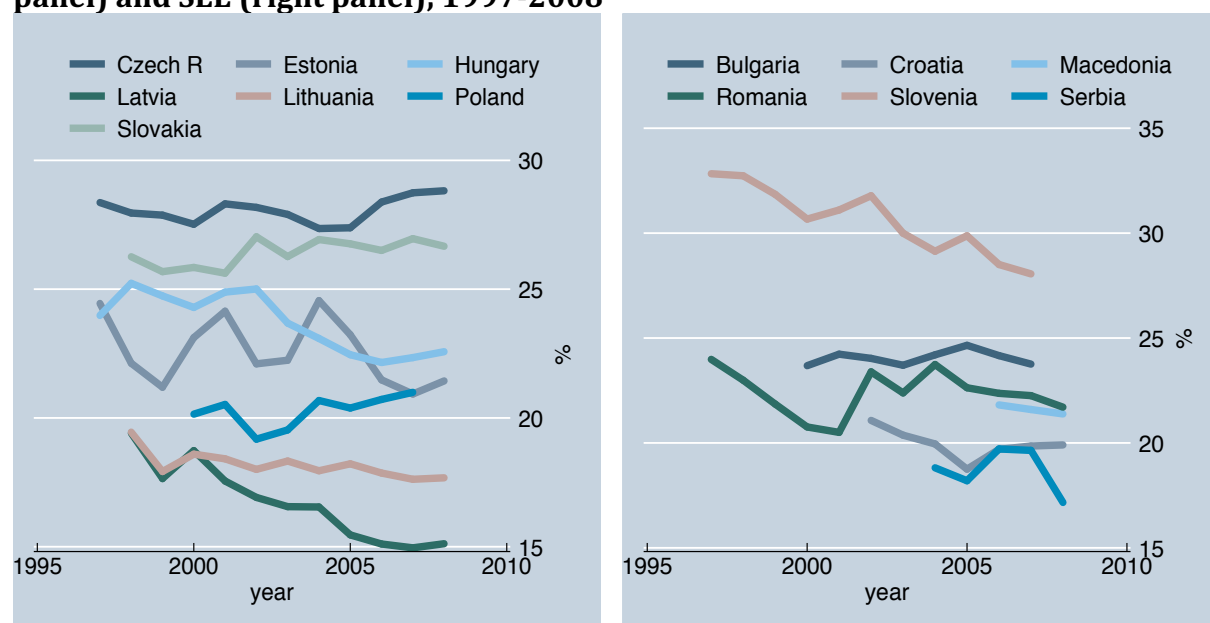
Source: Eurostat.

Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph 6-4. Share of women in manufacturing in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
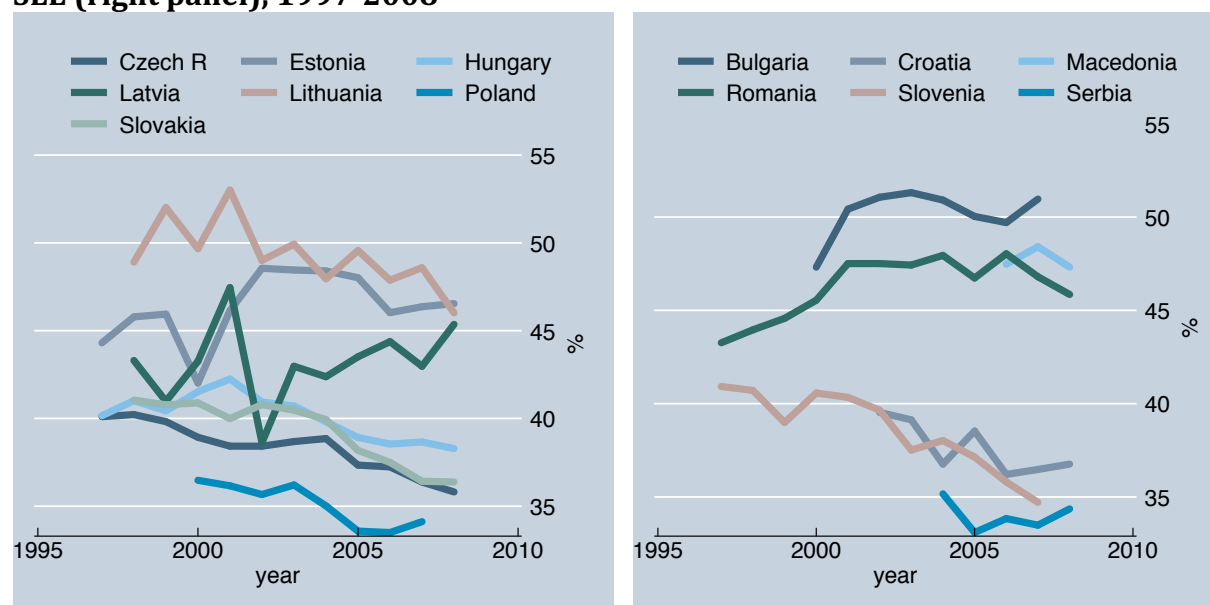
Source: Eurostat.

Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Data on the share of women in manufacturing indicates that their share was significantly higher in the Baltic countries than in CEE throughout the period of observation (Graph 6-4, left panel). When it comes to trends over time, the share of women was declining in CEE, while it remained stagnant in the Baltic. In SEE countries the share of women in manufacturing was significantly higher in Romania, Bulgaria and FYR Macedonia than in other countries, and it was at around the same levels in the Baltic countries. It was also declining in Slovenia and in Croatia during the entire period of observation (Graph 6-4, right panel).

Following this general overview of data on the share of women in manufacturing, i.e. the extent of the sector's defeminisation, I descriptively examine how these data relate to economic complexity, using the MIT index that was introduced in Section 6.1.

Graph 6-5. Correlation between share of women in manufacturing and economic complexity in Eastern Europe, 2007
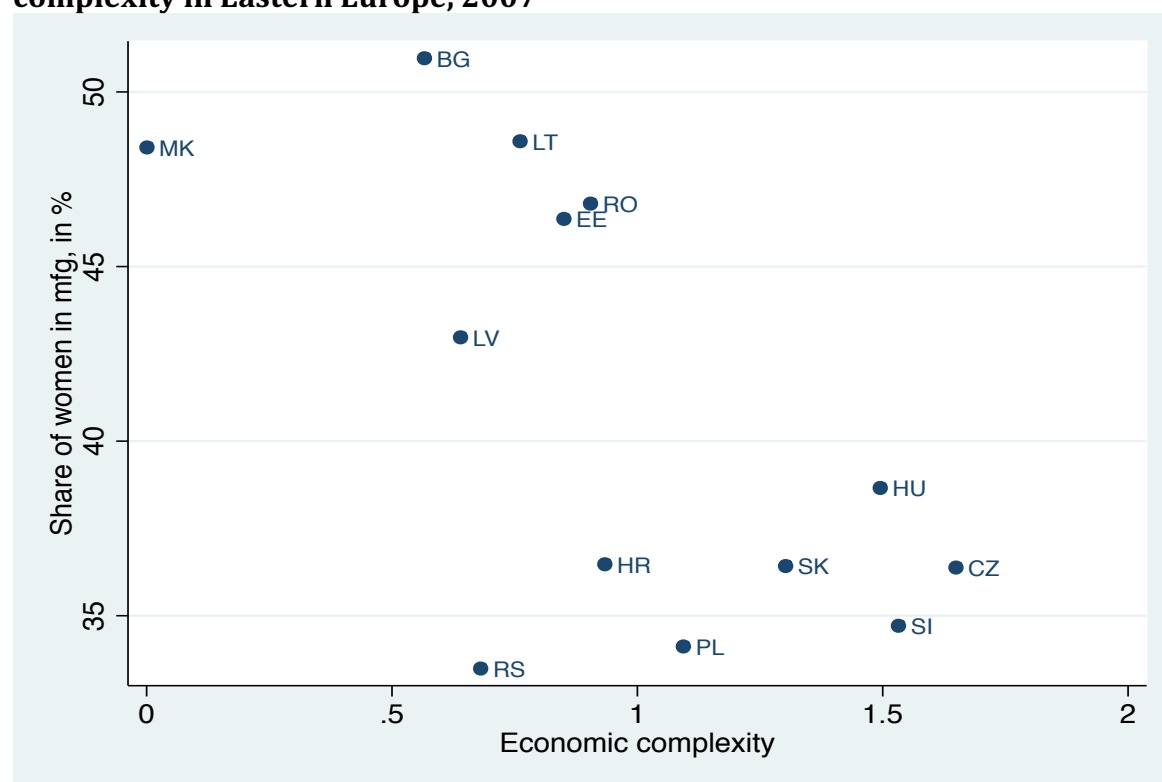
Source: Eurostat and The Observatory of Economic Complexity, MIT.

The share of women in manufacturing was significantly negatively correlated with the country's level of economic complexity throughout the period of observation. The correlation coefficient was -0.69 at 1% significance for the entire period of analysis for

all 13 countries and it remained almost the same when SEE countries were excluded.[60] While countries in the right bottom corner of Graph 6-5 could be seen as forming a positive correlation between economic complexity and the share of women in manufacturing in 2007, the slope of this positive relationship is very small and the negative correlation across the entire sample of countries is a lot more striking, which is reflected in the highly negative correlation coefficient between the two variables. The graph also shows data for one year only, while the econometric analysis will offer a more robust analysis of these relationships over time and across the countries.

In order to study the relationship between female manufacturing employment and economic complexity in Eastern Europe, I estimate two specifications for each of the following econometric models:

$$DFEMSHARE_{it} = \beta_0 + \beta_1 ECI_{it} + \beta_2 X'_{it} + \mu_{it} \qquad\qquad (1)$$

$$DFEMSHARE_{it} = \beta_0 + \beta_1 ECI_{it} + \beta_2 ECI^2_{it} + \beta_3 X'_{it} + \mu_{it} \qquad\qquad (2)$$

where $DFEMSHARE_{it}$ is a measure of feminisation of manufacturing employment in country i in year t.[61] ECI_{it} is a measure of economic complexity in country i in year t, while ECI^2_{it} represents its squared form. I include the squared form of the main independent variable to check for the possibility of an inverse U-shaped relationship between economic complexity and women's employment in manufacturing. X_{it} is the vector of control variables, the error term is represented by μ_{it} and the betas are the parameters to be estimated. When using the FE estimator, a δ_t term, which represents time-specific fixed effects, is also added to the equations.

Following econometric standards, I include GDP per capita as a control variable, although I expect that it will not affect my results substantially because, in Chapter 5, I showed that GDP per capita was not the primary driver of FLFP rates. Furthermore, GDP per capita has a correlation coefficient of 0.75 at 1% significance with economic complexity, and 0.68 when FYR Macedonia, Serbia and Slovenia, the countries that were shown in Chapter 5 to be driving the U-shaped relationship between GDP per capita and

[60] The correlation coefficient for 2007 only, which can also be observed in Graph 6-5, was -0.63 at 5% significance for all 13 countries, while it was -0.71 at 10% significance level when SEE countries were excluded.
[61] D is the letter used for manufacturing in Eurostat's NACE classification.

FLFP, are excluded from the model. This relatively high level of correlation between the two variables may result in multicollinearity, where GDP per capita takes away some of the predictive power of my independent variable. Therefore, I show the results of my estimates with and without this control. Some of the other possible variables that would affect the proposed relationship, such as occupational segregation, are not available for these countries in a time series format so I do not include them. Nevertheless, by including FE in my econometric specifications, I control for all country-specific characteristics that do not vary over time. The caveat of my FE estimates, however, is that the small sample size may not allow for enough variation within the countries to produce significant estimates.

Table 6-1 shows the results from the econometric estimates of the specified models. As I already explained, the benefit of the OLS estimator is that it allows for simultaneous cross-country and over-time analysis, while the FE estimator focusses on average changes over time within countries in the sample. I specify the model with the linear term only (models 1-4), following which I include the quadratic specifications (models 5-8).

Table 6-1. Economic complexity and share of women in manufacturing: econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PCSE	FE	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	-7.668	-1.896	-6.924	1.734	-7.744	5.306	-7.527	6.975
	(6.54)***	(1.63)	(7.99)***	(1.28)	(4.10)***	(2.35)**	(3.91)***	(3.23)***
Economic complex^2					0.042	-5.074	0.352	-4.038
					(0.07)	(3.65)***	(0.46)	(3.03)***
GDP pc			-0.182	-0.870			-0.191	-0.752
			(1.47)	(4.41)***			(1.45)	(3.88)***
_cons	49.473	44.127	49.721	45.235	49.499	42.841	49.952	44.062
	(44.41)***	(40.66)***	(40.22)***	(43.81)***	(38.41)***	(39.46)***	(31.38)***	(41.30)***
R²	0.47	0.02	0.48	0.18	0.47	0.13	0.48	0.24
N	120	120	120	120	120	120	120	120

* p<0.1; ** p<0.05; *** p<0.01

The PCSE OLS estimates indicate a linear negative effect of economic complexity on the share of women in manufacturing, which is preserved even when the quadratic specification of the independent variable is included, as well as when GDP per capita is included. R^2 is also substantial which indicates that this model has substantial

explanatory power even without the inclusion of the additional variables. This result confirms H12 by indicating that both across the countries and over time, increases in economic complexity have led to the defeminisation of manufacturing.

On the other hand, the explanatory power of the FE model is significantly increased when I include the quadratic term of the independent variable, and even further when GDP per capita is included. The FE estimates therefore indicate an inverse U-shaped relationship between economic complexity and the share of women in manufacturing. In Chapter 7, I investigate qualitatively whether this relationship is driven by the temporary access of Eastern European countries to female intensive low skill low wage jobs in footloose industries such as T&C. Nevertheless, this inverse U shape also supports the findings from PCSE OLS that more economic complexity in the longer run leads to defeminisation of manufacturing. Therefore, the FE estimator also confirms H12.

In order to enhance the presentation of the regression results shown in Table 6-1, I present the predictions that stem from the FE estimates in model 6[62] in Graph 6-6 and compare them to my PCSE OLS estimates visually. I run the FE estimates using the LSDV in order to produce the graph. This is an alternative method to run the FE regression, which produces identical results. It allows the generation of specific coefficients for each country, which can then be analysed visually. While the within country estimates suggest slight inverse U-shaped trajectories, cross-country estimates indicate a linear downward sloping trajectory of female share in manufacturing over the growth in economic complexity, which is especially pronounced in CEE and in Slovenia.

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[62] Because coefficients in model 2 are not significant.

Graph 6-6. Predicted values of female share in manufacturing: FE using LSDV with fitted values from the OLS regression
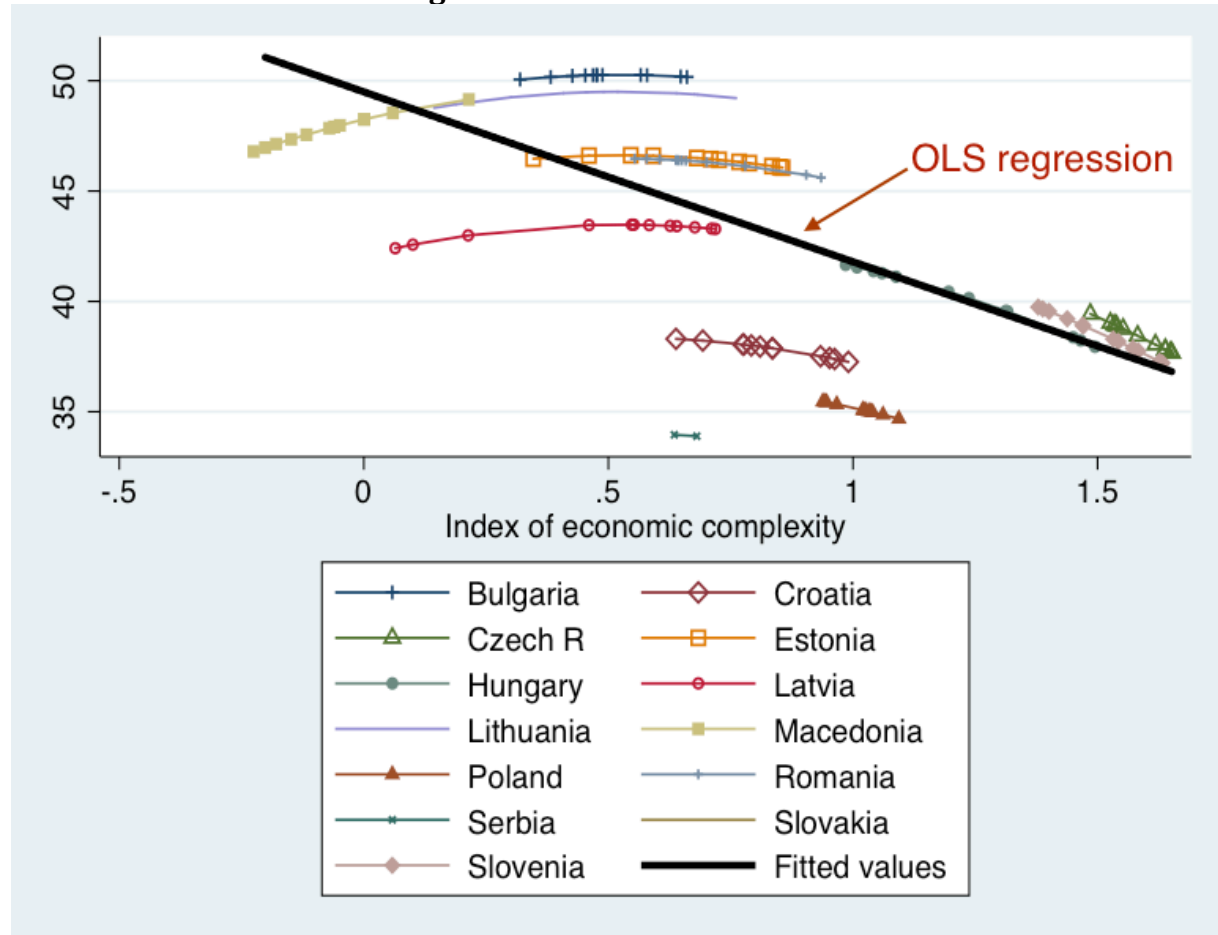
Finally, the same econometric estimates are produced with a restricted sample of countries, i.e. excluding FYR Macedonia, Serbia and Slovenia, because these countries were shown to be driving the GDP per capita effect on FLFP. The results do not change substantially so the direction and significance levels of the relationships are preserved (see Table A-9 in Appendix A6).

The above empirical analysis offers robust evidence that industrial upgrading negatively impacts the share of women in manufacturing, leading to the sector's defeminisation. Therefore, I confirm H12. Nevertheless, the main purpose of my theoretical framework is to analyse the extent to which these structural shifts within manufacturing affect overall FLFP rates. So I estimate the following econometric models:

$$FLFP_{it} = \beta_{0i} + \beta_1 ECI_{it} + \beta_2 X'_{it} + \mu_{it} \tag{3}$$

$$FLFP_{it} = \beta_{0i} + \beta_1 ECI_{it} + \beta_2 ECI^2_{it} + \beta_3 X'_{it} + \mu_{it} \tag{4}$$

where FLFP$_{it}$, is a measure of FLFP in country i in year t, while the other terms are as specified in the previous two equations.

Apart from GDP per capita as the control variable, I also include the share of KIS employment in the total working age population as a determinant of FLFP rates. This is because it is a large sector, which according to my theoretical model exercises a significant influence on FLFP rates.

Table 6-2 shows the results of the linear estimates for the entire sample of countries. While the first PCSE model, which does not include the control variables, suggests a positive relationship between economic complexity and FLFP, the inclusion of the control variables results in the tracing of a negative relationship between FLFP and economic complexity in the PCSE OLS models.

Table 6-2. Economic complexity and FLFP (15-64): econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	3.306	3.156	-1.935	0.231	-3.894	0.613
	(6.77)***	(2.57)**	(5.41)***	(0.13)	(4.52)***	(0.35)
KIS pop			0.743	0.340	0.628	0.601
			(9.57)***	(2.19)**	(8.05)***	(2.31)**
GDP pc					0.559	-0.519
					(4.70)***	(1.25)
_cons	57.439	57.567	46.540	53.455	48.022	49.990
	(113.40)***	(54.44)***	(26.02)***	(19.39)***	(26.93)***	(12.81)***
R^2	0.08	0.05	0.35	0.07	0.38	0.09
N	146	146	120	120	120	120

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

The FE estimates, on the other hand, lose all significance when control variables are included. This is a disappointing result, but the caveat of my FE estimates is the short time series, which may not allow for enough variation in both economic complexity and the control variables within the countries that could lead to significant estimates. However, the estimations indicate a significant positive effect of KIS employment on FLFP, both across and within the countries, which is in line with my theoretical model. In fact, because of the concurrent effects of KIS employment and economic complexity on FLFP, KIS employment as a control variable may be absorbing a portion of the effect

of economic complexity on FLFP within the countries. This is possible due to the indirect effect of industrial upgrading on FLFP, where industrial upgrading has a negative impact on educational expansion and consequently on KIS. The positive coefficient for the effect of KIS employment on FLFP indicates that the slower expansion of KIS, which I argue is caused by industrial upgrading, may be impeding the growth of FLFP.

Finally, estimates of the model with the quadratic specification of economic complexity are not included, because none of the coefficients are significant (see Table A-10 in Appendix A6). This indicates that there is no quadratic relationship between economic complexity and FLFP across or within the countries in my sample.

I also run the same specifications with a restricted sample of countries that exclude FYR Macedonia, Serbia and Slovenia, because these countries were driving the results in Chapter 5. The exclusion of these three countries does not affect the signs or magnitudes of the average relationships that are shown in Table 6-2 (see Table A-11 in Appendix A6).

In summary, cross-country evidence on the negative impact of industrial upgrading on FLFP is more compelling than within country evidence, which leads me to partially confirm H13. In the subsequent sections of this chapter I examine the relationships between industrial upgrading and educational expansion, as well as between educational expansion and the effect of KIS on FLFP, in order to determine whether industrial upgrading could also be exercising its indirect effect through that causal mechanism. Showing the presence of that additional causal mechanism would strengthen my conclusion that industrial upgrading impedes the growth of FLFP.

6.4 Industrial upgrading and educational expansion

In this section I test the following hypothesis:

H14: *Industrial upgrading inhibits educational expansion.*

My theoretical model posits this negative relationship between industrial upgrading and educational expansion based on the following line of argument. Industrial upgrading in CEE, which has been driven by MNCs as sources of innovation and capital (Nölke & Vliegenthart, 2009) required the balancing of the following international and domestic economic and social interests:

i. MNCs needed economic support in the form of industrial subsidies (Bohle & Greskovits, 2012).

ii. Losers of privatisation and restructuring of state-owned enterprises had to be compensated through cash benefits in order to ensure political stability, which was also important for attracting FDI (Vanhuysse, 2006).

iii. The process of accession to the EU required macroeconomic stability and fiscal discipline.

Apart from the fiscal constraints that stemmed from these processes, FDI-led industrial upgrading has relied on skilled manufacturing labour in Eastern Europe while the MNCs bring technology and innovation from their home countries. Therefore, the countries that followed the industrial upgrading trajectory of capitalist development were not pressured to reform the obsolete educational systems from the communist era, or to invest in general skills, which would be important for the knowledge economy. Furthermore, the demand for education was shaped by the needs of the predominantly manufacture-oriented MNCs (Tarlea, 2015). My theoretical framework indicates that this absence of educational expansion towards tertiary education with a general skills focus, has meant that the education systems in countries that were upgrading their industries would not be able to respond to the labour demands of the knowledge economy, thus stifling expansion. This would have impacted women more than men, since their opportunities for employment in manufacturing were decreasing as the transition progressed (as I show in Section 6.3). This causal mechanism, I argue,

explains how industrial upgrading could have impeded the expansion of tertiary educational attainment in some of the countries in my sample.

Graph 6-7. Correlation between economic complexity and persons with tertiary educational attainment in Eastern Europe, 2007
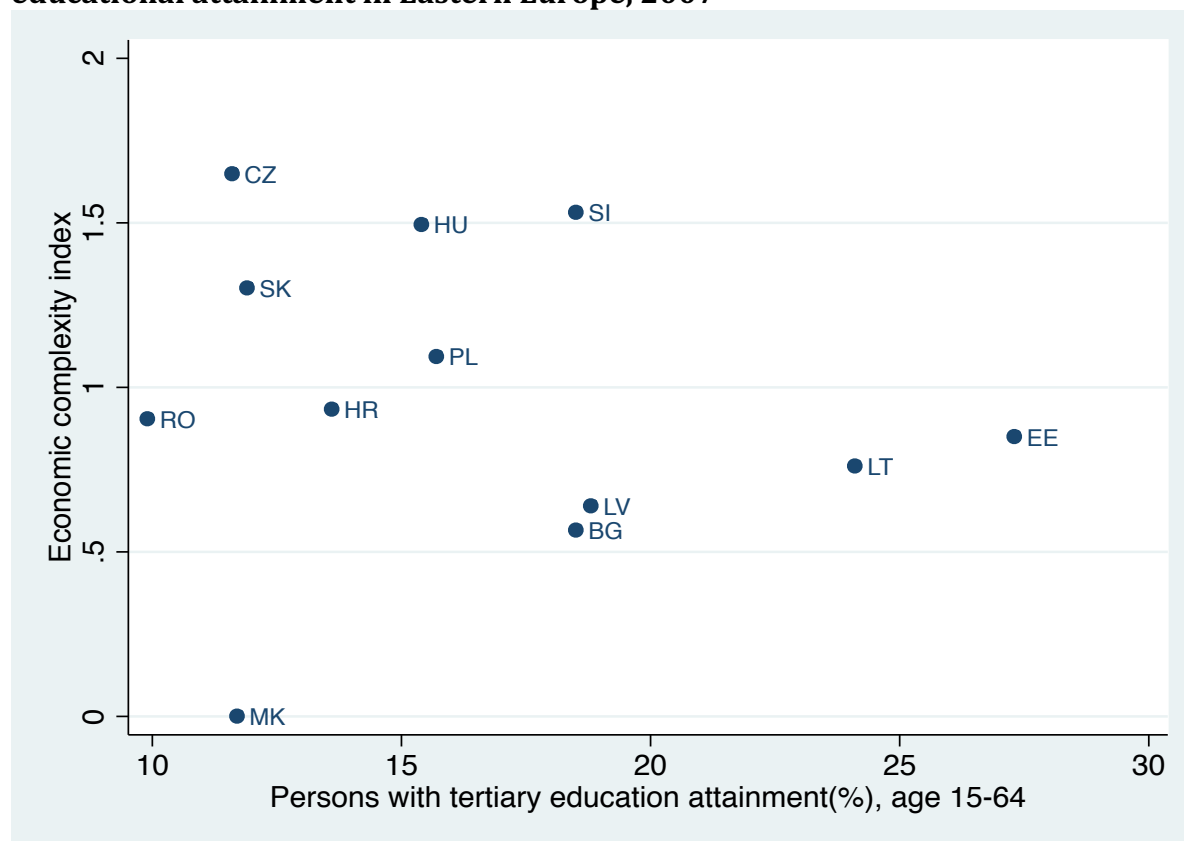
Source: Eurostat.

Graph 6-7 illustrates the correlation between economic complexity and persons with tertiary educational attainment in 2007. While FYR Macedonia is clearly an outlier, the data pattern indicates a negative correlation between the two variables. The correlation coefficient for the entire period of observation (2000-2008), when FYR Macedonia is excluded, was -0.44, significant at 1%. Furthermore, female tertiary educational attainment's correlation with total tertiary educational attainment stood at 0.99 throughout the period, so I do not run separate econometric estimates with that variable.[63]

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[63] The correlation coefficient between economic complexity and women with tertiary educational attainment was -0.47 for the entire period of observation, and significant at 1%.

In order to study the relationship between educational expansion and economic complexity in Eastern Europe econometrically, I estimate two specifications for each of the following models:

$$EDU_{it} = \beta_0 + \beta_1 ECI_{it} + \beta_2 X'_{it} + \mu_{it} \tag{1}$$

$$EDU_{it} = \beta_0 + \beta_1 ECI_{it} + \beta_2 ECI^2_{it} + \beta_3 X'_{it} + \mu_{it} \tag{2}$$

where EDU_{it} is a measure of educational expansion in country i in year t, while the other variables are the same as specified in the previous section. I specify educational expansion as the share of population with tertiary educational attainment, and alternatively, as expenditure on education as a share of GDP.

Therefore, I follow Nelson & Stephens (2011) who measure social investment in education for the knowledge economy by tertiary educational attainment and educational expenditures. I focus on the expansion towards tertiary education as one component of the broader movement towards a general skills-oriented skill regime, since other quantitative measures of skill regimes are difficult to identify and are the subject of intense debate in comparative political economy. In Chapter 7, I supplement this analysis with a qualitative account of government investment into educational expansion in the Baltic countries.

I also use the alternative specification of the dependent variable – expenditures on education as a share of GDP – assuming that countries that pursue educational expansion have to invest in their educational systems. Nevertheless, Castelló-Climent & Hidalgo-Cabrillana (2010) warn of the difficulty of drawing conclusions from data on educational expenditures, because such numbers suffer from substantial interpretational problems. For example, it is difficult to measure private investment in education. Countries also vary according to their demographics, so countries that educate more usually spend less on a per capita basis. Therefore, I do not include a measure of spending per student in my analysis and I also do not take the results from the analysis of educational expenditures as a share of GDP seriously.

When it comes to economic complexity, I include the squared form of ECI because I want to check for the possibility of a U-shaped relationship between economic

complexity and educational expansion. This is in line with the expectations of the macroeconomic human capital literature (Castelló-Climent & Hidalgo-Cabrillana, 2010), which argues that expansion of tertiary education may be a 'natural' effect of economic development. In other words, I posit that countries may reach a level of economic development via industrial upgrading at which: i) they can afford more investment in education than was the case in the earlier stages of re-industrialisation which was characterised by budgetary restraint; and/or ii) the growing demand for tertiary education as the economy becomes more complex would create a private supply of education. In fact, a recent PhD thesis by Tarlea (2015) indicates the presence of the latter mechanism in CEE. She shows that over the last few years, demand for tertiary education in CEE has risen because of growing MNC skill needs. This has led to the proliferation of private higher education in the region, although the rates of tertiary educational attainment still remain at significantly lower levels than in the Baltic.

Reflecting on these trends is important for our understanding of future trajectories of the knowledge economy in Eastern Europe, particularly since Ansell & Gingrich (2013) show that in the advanced capitalist economies partly private education systems lead to the generation of different types of KIS jobs (e.g. in finance and real estate) than the government-led educational expansion (e.g. public sector services such as health and education). While the data constraints in the empirical analysis conducted in this section do not allow us to distinguish between the different types of higher education financing structures, I will return to this matter in Section 6.6 where I assess how educational expansion affects the relative contribution of public vs private sector KIS employment to overall FLFP.

I include GDP per capita as the standard control variable that I include in all specifications, along with the same caveats from the previous section. Due to possible multicollinearity between ECI and GDP per capita, this control variable may be reducing the effect of ECI on educational expansion. Therefore, I show the results with and without GDP per capita. The other variables that might affect this relationship and that are proposed in Chapter 3 are fiscal constraints, institutional and political constraints to reform and the extent of dependence on foreign capital. All of them will be covered in the FE estimations, because this estimation technique controls for time invariant

country level effects.[64] Summary statistics on the variables used in this analysis are shown in Table A-8 in Appendix A6. Finally, because I propose a negative effect of industrial upgrading on educational expansion, reverse causality is not a concern, as it is difficult to theoretically posit why more tertiary educational expansion would lead to less industrial upgrading.

Table 6-3 shows the results of the econometric estimates of the impact of economic complexity on the share of population with tertiary education. The linear specification of the independent variable indicates a negative impact of economic complexity on tertiary educational attainment, significant at 1%, both for the PCSE OLS and the FE estimates (models 3 and 4). The quadratic specification of ECI preserves the linear and negative PCSE OLS results, while the FE estimates show a U-shaped impact of economic complexity on tertiary education within the countries in my sample.

Table 6-3. Industrial upgrading and population with tertiary education: econometric estimates, all countries 2000-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PCSE	FE	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	-4.291	2.169	-10.812	-3.933	1.203	-9.659	-1.558	-13.384
	(4.37)***	(1.12)	(8.53)***	(2.21)**	(0.25)	(2.55)**	(0.42)	(4.36)***
Economic complex²					-2.980	8.263	-5.307	6.832
					(1.39)	(3.56)***	(3.27)***	(3.66)***
GDP pc			1.495	1.756			1.616	1.662
			(14.47)***	(6.99)***			(17.17)***	(7.03)***
_cons	19.320	13.245	17.353	9.473	17.383	15.414	13.744	11.469
	(16.16)***	(7.25)***	(13.28)***	(6.06)***	(8.14)***	(8.46)***	(8.14)***	(7.35)***
R²	0.12	0.01	0.35	0.37	0.13	0.14	0.39	0.46
N	100	100	100	100	100	100	100	100

* p<0.1; ** p<0.05; *** p<0.01

In order to further analyse the coefficients presented in Table 6-3, I illustrate the differences between PCSE OLS and FE estimates in Graph 6-8 using the LSDV estimation technique. While the graph shows a clear downward sloping relationship between economic complexity and tertiary educational attainment across the countries in my

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[64] Fiscal constraints are not necessarily time invariant, but they have been persistent in many Eastern European countries throughout the 2000s. Therefore, for the purpose of this analysis, I consider them time invariant.

sample, the within country U-shaped relationship is the result of growth of tertiary education in the countries with the highest levels of economic complexity. This is, however, taking place from significantly lower levels of educational attainment than in the Baltic countries and Bulgaria.[65]

Graph 6-8. Predicted values of population with tertiary education: FE using LSDV with fitted values from the OLS regression
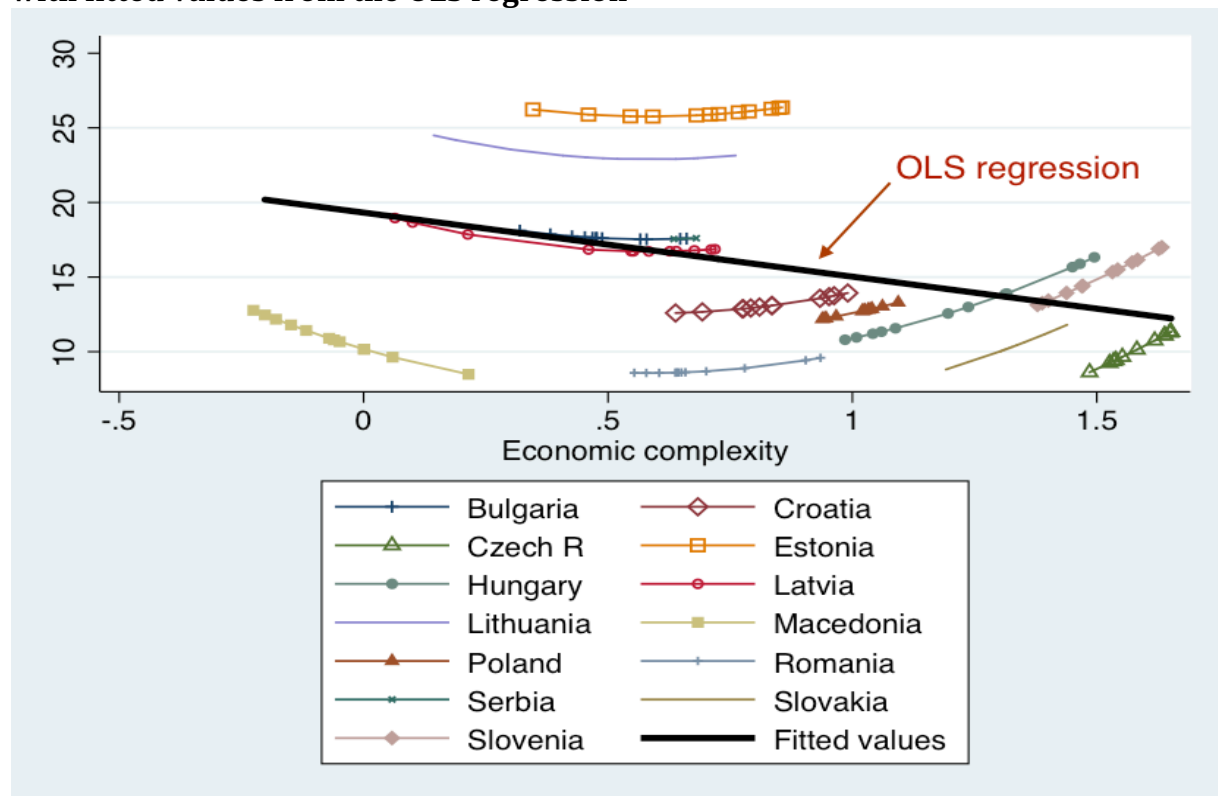
Graph 6-8 further indicates that the within country U-shaped relationship between economic complexity and growth of tertiary education is driven by Slovenia and CEE. While Slovenia has been a persistent outlier in this thesis,[66] the case of CEE could be explained by findings from Tarlea (2015), who shows that MNCs have shaped the demand for higher education and its supply through private institutions in CEE during the later stages of transition. The fact that these countries did not see a substantial increase in female entry in their labour markets indicates that, following Ansell & Gingrich (2013), privately supplied education may not have as positive an impact on FLFP as public (Section 6.6 offers empirical support for this claim). Therefore, I find this

[65] While Graph 6-8 appears to show that the level of tertiary education has not grown in the Baltic countries during transition, this indicates the predicted values over economic complexity. Chapter 5 shows a trend of substantial growth of tertiary education in the Baltic countries over time.
[66] Because of its higher level of economic development than the rest of the countries in the sample, as well as its low dependence on foreign capital and lower fiscal constraints than the rest of Eastern Europe.

empirical evidence compelling enough to support H14, with the caveat that industrial upgrading may impede government-led educational expansion rather than both public and private educational expansion. I will investigate this claim further in the qualitative analysis that is presented in Chapter 7.

Finally, the same econometric estimates are also produced with a restricted sample of countries, i.e. excluding FYR Macedonia and Slovenia, because these countries were shown to be outliers, which were driving the GDP per capita effect on FLFP.[67] The results do not change substantially so the direction and significance levels of the relationships are preserved (see Table A-12 in Appendix A6).

Results from the estimates on the effect of industrial upgrading on educational expenditures as a share of GDP are shown in Table 6-4. The PCSE OLS evidence also supports my hypothesis about the negative impact of economic complexity on educational expenditures. The FE estimates are less compelling, because the inclusion of the quadratic term indicates a U-shaped relationship between the two variables. This trend might be caused by the same factors that are driving the U-shaped relationship between economic complexity and tertiary educational attainment, including the growth of GDP per capita.

Table 6-4. Industrial upgrading and educational expenditures: econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PCSE	FE	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	-0.146	-0.532	-1.001	0.111	-0.080	-1.905	-0.353	-1.407
	(0.69)	(1.77)*	(3.85)***	(0.32)	(0.08)	(3.09)***	(0.37)	(2.36)**
Economic complex^2					-0.036	1.006	-0.371	1.154
					(0.08)	(2.54)**	(0.81)	(3.07)***
GDP pc			0.210	-0.167			0.219	-0.182
			(5.46)***	(3.37)***			(5.75)***	(3.80)***
_cons	4.876	5.231	4.594	5.487	4.853	5.445	4.342	5.756
	(22.87)***	(18.75)***	(22.19)***	(19.80)***	(10.13)***	(19.11)***	(9.51)***	(20.50)***
R^2	0.01	0.03	0.18	0.12	0.01	0.08	0.19	0.19
N	121	121	121	121	121	121	121	121

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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[67] Serbia does not need to be excluded because its educational data are not in the Eurostat database.

Results of the econometric estimates with a restricted sample of countries which excludes FYR Macedonia and Slovenia indicate an even stronger negative effect of economic complexity on educational expenditures in PCSE OLS estimates, while the U-shaped relationship is maintained in the results of the FE estimates (see Table A-13 in Appendix A6).

In conclusion, cross-country evidence in favour of H14 is more compelling than within country evidence. Although this evidence allows me to partially confirm H14, a major caveat of this econometric analysis is the issue of measurement of educational expansion and movement towards general skills. Therefore, I supplement these econometric findings with a qualitative analysis of the role of the Baltic governments in transforming their educational systems during transition, which I present in Chapter 7.

6.5 Knowledge-intensive services and feminisation of service employment

In this section I test the following three hypotheses, which reflect the different components of the positive relationship between KIS and FLFP posited in the NW quadrant of my theoretical model:

H15: *Growth of KIS services leads to higher FLFP rates.*

H16: *The higher the share of KIS employment in the economy, the higher the share of women in KIS.*

H17: *Growth of public sector employment leads to higher FLFP.*

As I showed in Chapter 2, literature on FLFP in Western capitalist economies has identified a substantial impact of the expansion of services on FLFP. Tertiarisation has, in fact, been the presumed mechanism through which economic development increases FLFP at the later stages of economic development. Gaddis & Klasen (2014) are the first to formally test this proposition. Using rigorous econometric examination of panel data for a large number of countries between 1980 and 2005, they show that tertiarisation is

indeed the necessary condition through which economic development has a positive impact on FLFP.

Sociological and comparative political economy literature has emphasised the specific effect of the expansion of the knowledge economy and KIS on female labour market outcomes, as women have tended to disproportionately benefit from the expansion of tertiary education (Walby, 2011; Nelson & Stephens, 2013; Thelen, 2014). These analyses have both identified a positive contribution of KIS to female employment and warned about the potential negative implications of these trends for gender pay gaps.

In Section 6.3, where I include KIS as a control variable in the econometric analysis of the impact of industrial upgrading on FLFP, I show that the share of the total working age population employed in KIS positively affects FLFP in Eastern Europe, both across and within the countries over time (see Table 6-2 in Section 6.3). This finding already strongly confirms H15.

Apart from this positive effect of KIS employment on FLFP, I am interested in understanding whether women have disproportionately benefited from greater expansion of KIS, i.e. whether KIS has absorbed women and men at the same rate, or absorption of women has been faster when KIS has expanded more rapidly. This is an important test for my argument that women have disproportionately benefited from KIS because they also disproportionately benefited from the expansion of tertiary education, and the question is put forward in H16.

Finally, H17 reflects that portion of my argument which states that the public sector component of KIS employment has grown along with the expansion of tertiary education and that women have disproportionately benefited from that expansion, both as providers of public education as well as its beneficiaries.

I start the empirical analysis by showing the share of KIS employment in the total working age population and the share of female employment in KIS as a share of the female working age population. The share of KIS in total employment has expanded in most of Eastern Europe during the entire period of observation, with the steepest increases taking place in the Baltic countries and Slovenia (Graph 6-9).

Graph 6-9. KIS employment as a share of total working age population in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
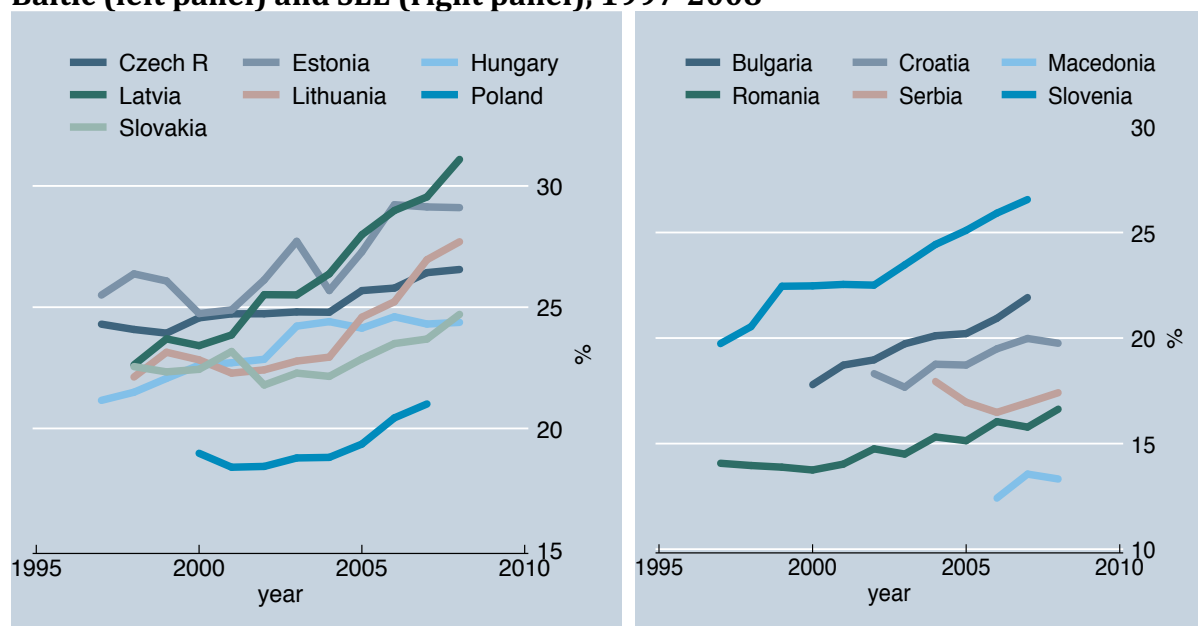
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph 6-10. Female employment in KIS as a share of female working age population in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
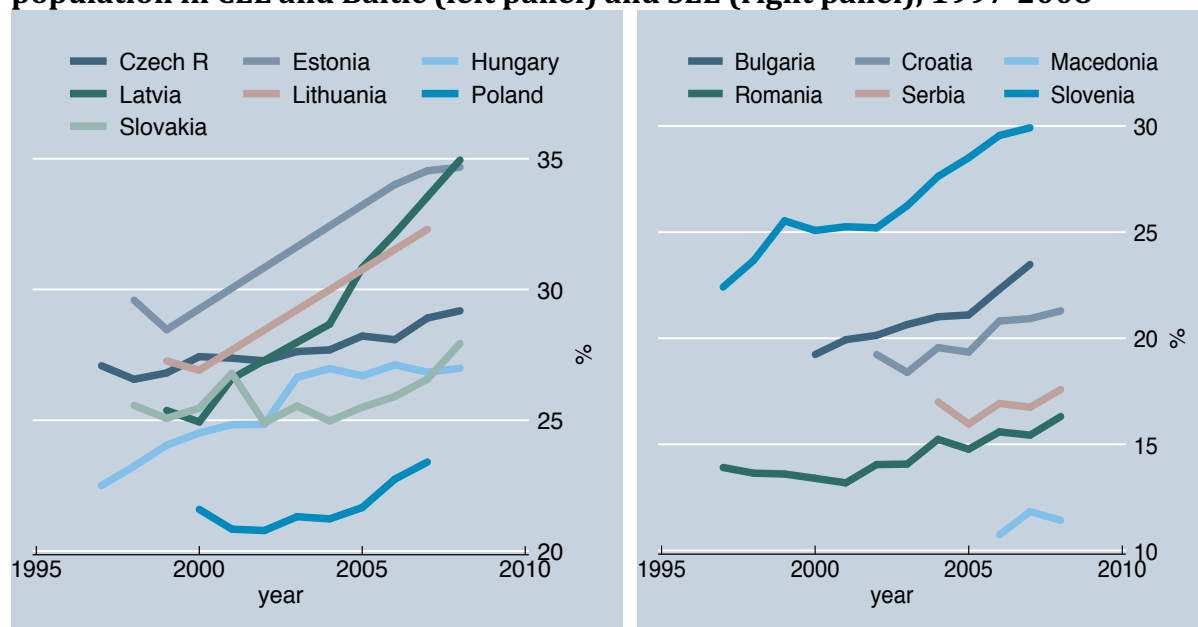
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Furthermore, female employment in KIS has expanded even more drastically in the Baltic countries and in Slovenia, while the trend was slower in the rest of the countries in the sample (Graph 6-10). This effect of growing feminisation of KIS in the Baltic countries becomes even more pronounced when we consider that their share of KIS in total employment was growing at a faster rate than in most of the other countries. This points to a faster feminisation of KIS employment in the Baltic compared to the rest of the sample (see Graph A-14 in Appendix A6).

In order to study the impact of expansion of KIS on the share of women in KIS, I specify the following equation:

$$\text{KIS\_FEMSHARE}_{it} = \beta_0 + \beta_1 \text{KIS}_{it} + \beta_2 X'_{it} + \mu_{it} \tag{1}$$

where KIS_FEMSHARE_{it} is a measure of the extent of feminisation of KIS while KIS_{it} is a measure of presence of KIS in country i at time t. Because the share employment in KIS is highly correlated with the share of women in KIS (the coefficient is above 0.90), I use alternative measures of KIS, such as the share of services in value-added and the relative share of services to industry. This second measure is particularly important when I use GDP per capita as a control variable, since it makes my key independent and control variable less correlated. I do not include a quadratic specification of the independent variable because there is no theoretical reason to expect a quadratic relationship (the data also does not point to it). X'_{it} is the vector of control variables, such as GDP per capita, μ_{it} is an error term and the betas are the parameters to be estimated.

Table 6-5, which shows the results of the econometric estimates, indicates that the share of services in value added, as a proxy for the expansion of KIS, has had a significantly positive effect on the feminisation of KIS, both across and within the analysed countries.

The significantly positive coefficients are fully preserved at 1% significance when I use alternative measures of the independent variable: the value of services vis-à-vis industry (Table A-14 in Appendix A6), the share of KIS in the total working age population (Table A-15 in Appendix A6), and the share of KIS in total employment (see Table A-16 in Appendix A6). Finally, because the descriptive analysis indicates that

none of the countries are outliers in the relationship between these two variables, I do not include the estimates without FYR Macedonia, Serbia and Slovenia.

Table 6-5. Share of services in value added and the share of women in KIS: econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)
	PCSE	FE	PCSE	FE
Services, VA	0.946	0.399	0.810	0.262
	(11.43)***	(5.86)***	(9.56)***	(5.17)***
GDP pc			1.039	0.267
			(9.44)***	(9.43)***
_cons	-14.723	19.178	-11.617	21.168
	(3.00)***	(4.53)***	(2.42)**	(7.00)***
R^2	0.45	0.27	0.57	0.63
N	105	105	105	105

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Given the compelling strength of both cross-country and within country empirical evidence, I conclude that women have disproportionately benefited from the creation of new KIS employment in Eastern Europe, so that feminisation of KIS was higher in those countries where the expansion of the sector was more substantial. Therefore, I confirm H16.

Before I move on to examining the impact of education on the relationship between FLFP and KIS, I disaggregate KIS employment into its public and private sector components and analyse their respective contributions to FLFP in the region. This analysis has important implications for my theoretical model, which suggests that countries with high FLFP have invested public resources into educational expansion, which has resulted in more jobs in the public and knowledge intensive sectors of the private economy. This argument is summarised in H17. It is a particularly important line of enquiry for this thesis because pro-market reforms, which were implemented in Eastern Europe during post-socialist transition, were aimed at the retrenchment of the state and reduction of public sector employment, processes which should have harmed women. In fact, resistance to public sector reform has been a highly politicised and

salient issue in a number of transition countries (Kornai, Haggard & Kaufman, 2001). Identifying public sector employment as an important driver of high FLFP in the Baltic region (which I do in this and the following section of this chapter, as well as in Section 7.3 of Chapter 7) challenges the argument put forward by Bohle & Greskovits (2012) that the region has experienced the most neo-liberal reforms in Eastern Europe and a strong degree of social exclusion as a result of it. Graph 6-11 illustrates the trends in public sector employment as a share of total working age population.[68] It indicates that the public sector has disproportionately grown in the Baltic countries in comparison to the rest of the countries.

Graph 6-11. Public sector employment as share of total working age population, 1997-2008
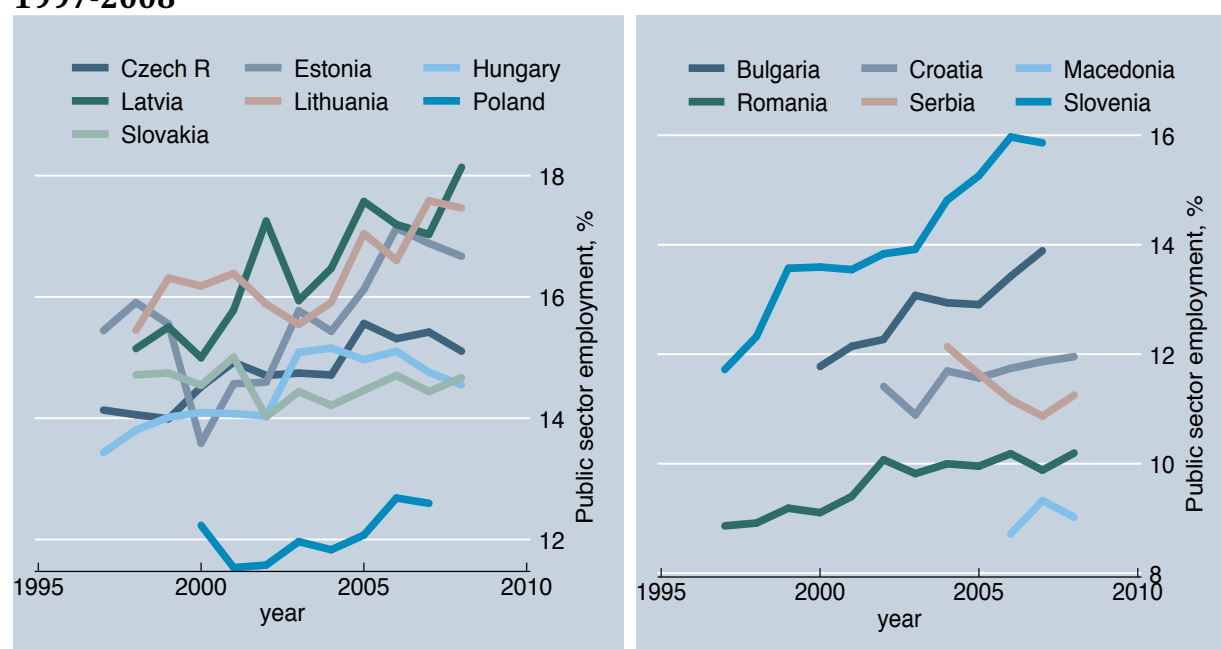
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

In terms of the presence of women in public sector employment, Baltic countries (and Slovenia to a certain extent) also stand in stark contrast to other countries in my sample. Almost 25% of the entire population of working age women were employed in the sector at the end of the observed period. The share of women in the public sector in

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[68] The share of the public sector in total employment is shown in Graph A-17 in Appendix A-6.

the Baltic countries also grew substantially during the 2000s in comparison to the other countries (Graph 6-12).[69]

Furthermore, except for Slovenia, SEE countries were particularly lagging behind, both in terms of public employment as a share of the total working population and in terms of the share of women in public sector employment (see right panels in Graph 6-11 and Graph 6-12).[70]

Graph 6-12. Female public sector employment as share of female working age population, 2000 and 2007
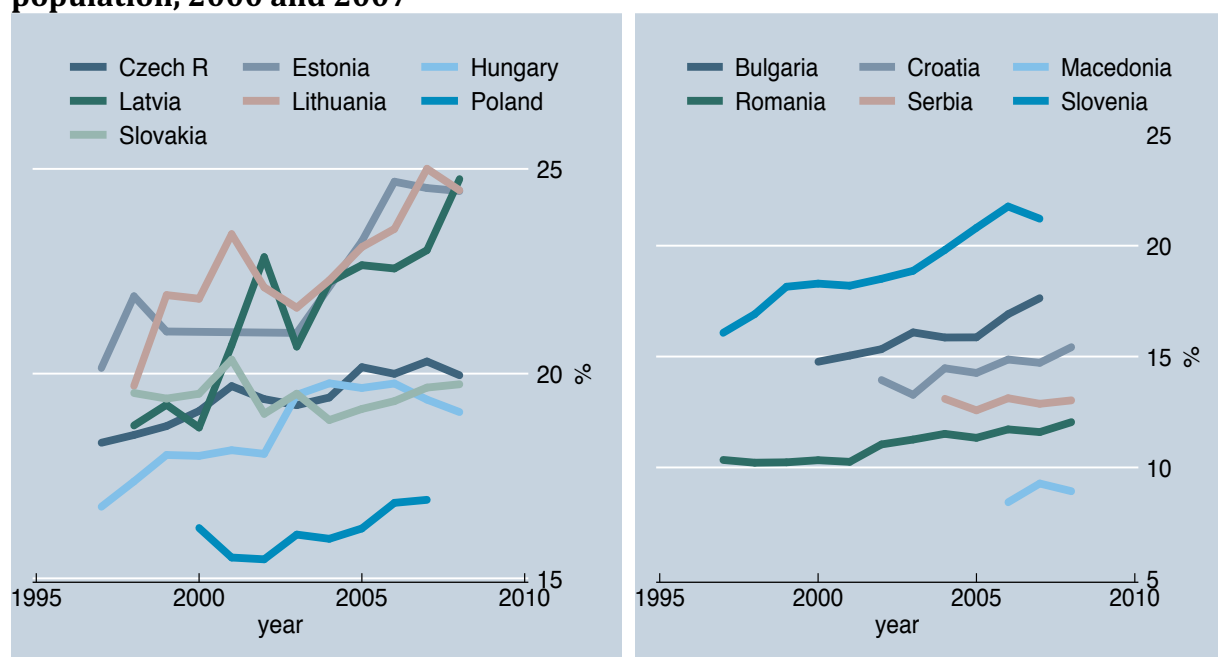
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

In order to assess the relative contribution of the public vs private KIS employment to overall FLFP rates, I specify the following econometric model:

$$FLFP_{it} = \alpha_i + \beta PUB_{it} + \delta X'_{it} + \mu_{it} \tag{2}$$

where PUB is a measure of public sector employment in country i in year t, while the

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[69] Results for the share of the public sector in total employment as well as the share of women in public sector employment are shown in Graphs A-15 and A-16 in Appendix A6.
[70] The exceptionally low share of women in the public sector in FYR Macedonia could possibly be explained by legislation that requires at least 30% of public sector employees to come from the Albanian ethnic minority, whose women are substantially lagging behind men in terms of educational attainment and labour market opportunities (Angel-Urdinola, 2008).

control variables include a measure of employment in the private sector, as well as economic complexity (which has been shown to matter in Section 6.3) and GDP per capita.

Table 6-6 shows the results of the econometric estimates of the relationship between public sector employment as a share of the total working age population and FLFP. The positive effect of public sector employment on FLFP is significant in both PCSE OLS and in FE estimates, while the effect of private sector employment is not. The positive and significant coefficients are preserved when a quadratic specification of economic complexity is included (Table A-17 in Appendix A6). This econometric analysis, of course, is conducted with the caveat that 'deeper' causal mechanisms are driving the observed effect of public sector employment on FLFP, but I am still interested to find out whether overall levels of public sector employment can predict FLFP rates. In Chapter 7, I analyse whether this 'deeper' causal mechanism is the social investment state, as I propose in my theoretical framework.

Table 6-6. Public sector employment and FLFP (15-64): econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
PUB pop	1.064	0.441	0.953	0.470	0.877	0.661
	(11.34)***	(1.37)	(7.72)***	(1.35)	(6.11)***	(1.73)*
PRIV_KIS pop	0.276	0.278	0.475	0.240	0.304	0.540
	(2.40)**	(1.06)	(2.23)**	(0.84)	(1.54)	(1.42)
Economic complex			-1.607	0.219	-3.563	0.596
			(2.82)***	(0.13)	(3.51)***	(0.34)
GDP pc					0.576	-0.504
					(5.64)***	(1.19)
_cons	44.109	52.670	45.552	52.502	46.884	49.591
	(26.72)***	(15.36)***	(26.51)***	(14.65)***	(25.34)***	(11.45)***
R^2	0.35	0.07	0.35	0.08	0.38	0.09
N	123	123	120	120	120	120

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Econometric analyses that include the share of public sector in total employment (Table A-18 in Appendix A-6) and the share of women in public sector employment (Table A-19 in Appendix A-6) as alternative specifications of the independent variable do not

yield as strong predictions as the above analysis. This points to the importance of using the share of the working age population employed in a specific sector in order to understand a sector's contribution to overall LFP (because LFP is calculated as a share of economically active individuals in the working age population).

In summary, this analysis points to a stronger contribution of public than private sector KIS employment to FLFP in Eastern Europe. Therefore, it allows me to confirm H17. If we assume that KIS jobs in the public sector are on average less remunerated than those in the private economy, these findings are consistent with Walby (2011). She draws our attention to the two-tier knowledge economy in advanced capitalised economies, which is polarised along gender lines, so that women work in those sectors of KIS where wages are lower. While this thesis focusses on the drivers of FLFP rates, rather than on the quality of female employment (in terms of its remuneration and content), these findings have implications for future work on female economic empowerment in Eastern Europe.

Furthermore, the data presented in Graphs 6-9 and 6-11 indicate that at least half of the total KIS employment has been generated in the public sector across Eastern Europe. In the next section and in Section 7.4 of Chapter 7, I analyse this outcome in the context of increasing public investment in education and question whether higher levels of (female) employment in public KIS is the preferred outcome of such a policy. I also discuss potential barriers that could have reduced the impact of social investment on the generation of private sector KIS employment in order to set an agenda for future research endeavours.

6.6   Knowledge-intensive services and educational expansion

In this section I analyse the final component of my theoretical model by testing the following hypothesis:

H18: *Educational expansion amplifies the positive effect of KIS on FLFP.*

This hypothesis is based on the premise that the effect of KIS on FLFP is amplified by educational expansion, so that its effect is stronger at higher levels of educational expansion and vice versa. I argue that women are able to benefit more from KIS employment in countries with higher overall educational attainment. Education is a more important factor for women than for men, I argue further, because empirical evidence from Eastern Europe has shown that women have higher qualifications than men in the same category of jobs both in the public and in the private sector, possibly due to the higher barriers to labour market entry that they face (Avlijaš et al., 2013). Therefore, I include the interaction term between educational expansion and KIS employment into my analysis and estimate the marginal effects of KIS employment on FLFP at different levels of educational attainment.

My empirical strategy is summarised in the following econometric model:

$$FLFP_{it} = \beta_0 + \beta_1 KIS_{it} + \beta_2 EDU_{it} + \beta_3 KIS*EDU_{it} + \beta_4 X'_{it} + \mu_{it} \qquad (1)$$

where all the terms have already been defined in the previous sections of this chapter. I operationalise KIS as the share of KIS employment in the total working age population. I also show the results for public sector employment only, as an alternative specification of the independent variable.[71] I include both measures of educational expansion that I used in the previous sections of this chapter, tertiary educational attainment and expenditures on education as a share of GDP. I also include GDP per capita as a standard control variable with the same caveats that were mentioned in the previous sections of this chapter.

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[71] I do not show the results with all the alternative specifications of the independent variable because they produce very similar estimates, as was the case in Section 6.5. Therefore, I focus on the results with the most important implications for this thesis.

All PCSE OLS and FE estimates produce a positive interaction coefficient, which is significant at 1% in all specifications (see Tables A-20 to A-22 in Appendix A6). I do not present the coefficients from the regressions here because when an interaction term is included, the coefficients of the original variables have very little meaning, i.e. they show the estimated slope when the independent variable takes on the value 0. Therefore, I use marginal effect plots to show the estimated effect of KIS on FLFP at different levels of educational attainment and educational expenditures. The marginal effect plots are shown for the PCSE OLS estimates in the graphs below. Graph 6-13 shows the effect of 1 percentage point increase in KIS employment on FLFP at different levels of educational attainment. The effect of KIS employment on FLFP is around 0.7 percentage points when tertiary educational attainment is 15% of the population (this is the average level of tertiary educational attainment in my sample of countries, as shown in Table A-8 in Appendix A6). While it is around 1.1pp when tertiary educational attainment is 25% and 1.5pp when educational attainment is 35%. Furthermore, these marginal effect estimates are robust because the confidence intervals (vertical lines) do not overlap and all the points are significant and different from zero.

Graph 6-13. Impact of interaction between KIS employment and educational attainment on FLFP (15-64): estimated marginal effects 2000-2008
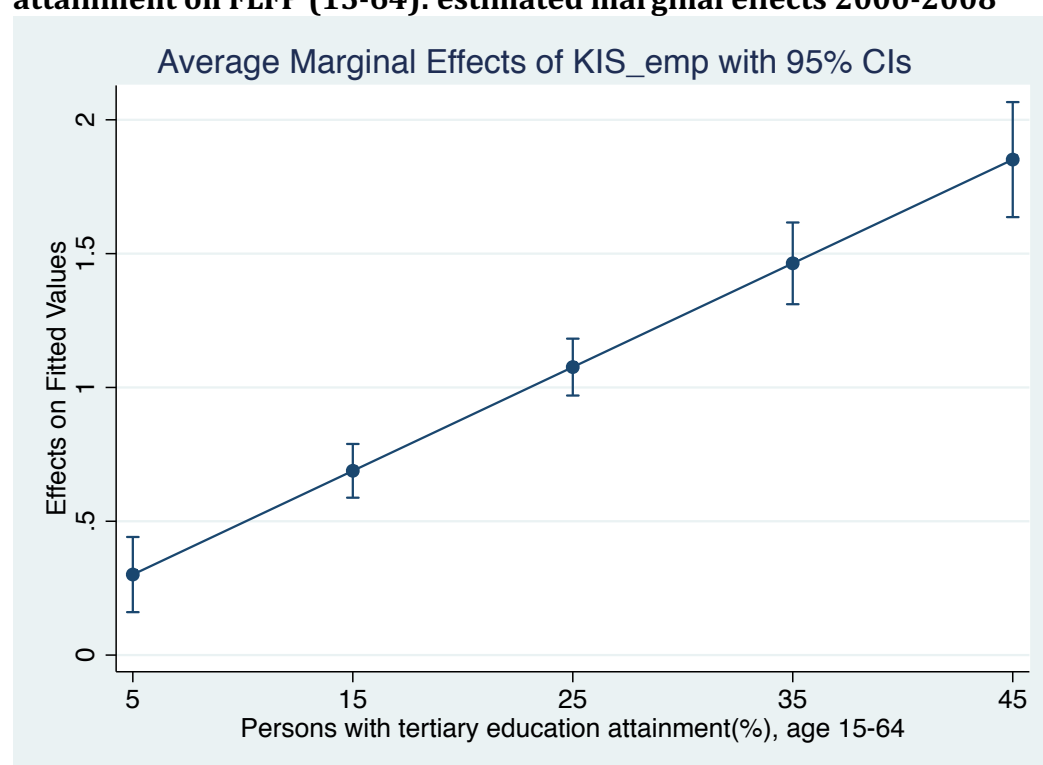
Note: 'KIS_emp' stands for KIS employment as a share of total working age population.

Graph 6-14 shows the effect of KIS employment on FLFP for the different levels of educational expenditures. A statistically-significant higher effect of KIS employment on FLFP is traced at higher levels of educational expenditure as GDP per capita, and the effect doubles when educational expenditures increase from 4 to 6% of GDP.

Graph 6-14. Impact of interaction between KIS employment and educational expenditures on FLFP (15-64): estimated marginal effects 1997-2008
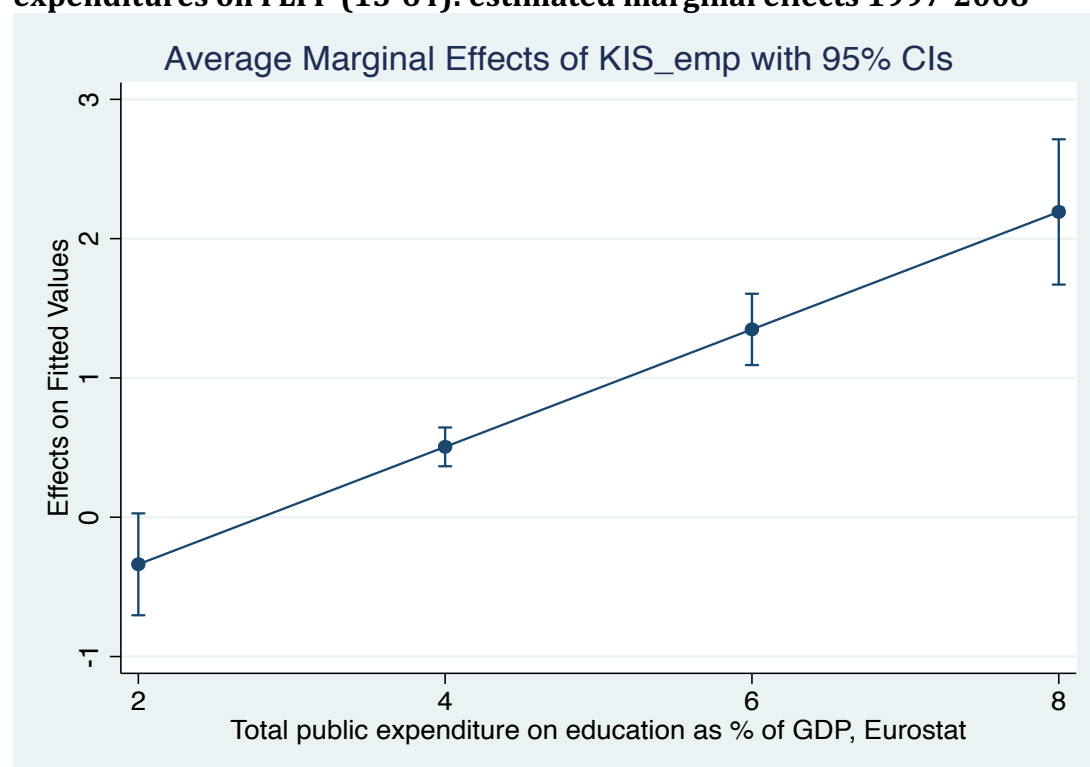
Note: 'KIS_emp' stands for KIS employment as a share of total working age population.

The marginal effect plot of public sector employment on FLFP in Graph 6-15 shows an even more pronounced impact of public sector employment on FLFP at higher levels of educational attainment. This finding indicates that when tertiary educational attainment is at 25% of the total population, a 1pp increase in public sector employment results in a 2pp increase in the overall FLFP. This means that at higher levels of tertiary educational attainment, public sector jobs generate new private sector employment for women. While a more nuanced analysis would be required to understand the exact number and type of private sector jobs for women that an additional public sector job creates, this finding points to a strong multiplier effect of public sector employment on FLFP at higher levels of educational attainment.

Graph 6-15. Impact of interaction between public sector employment and educational attainment on FLFP (15-64): estimated marginal effects 2000-2008
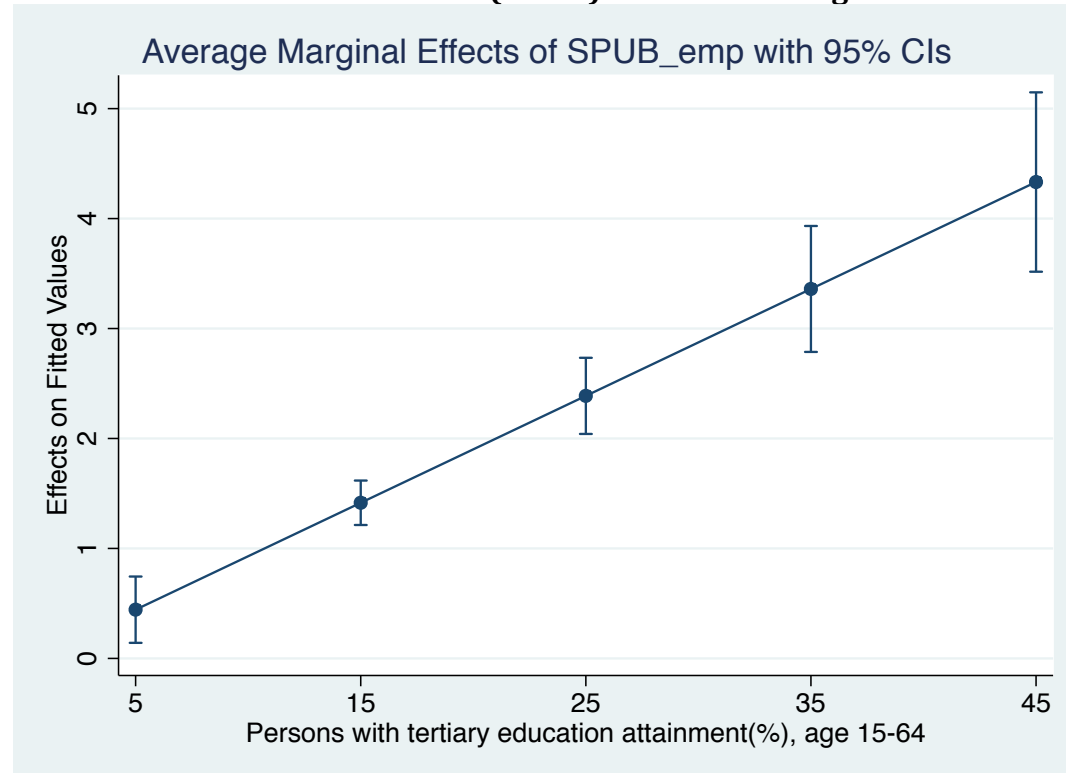
Note: 'SPUB_emp' stands for public sector employment as a share of total working age population.

Graph 6-16. Impact of interaction between public sector employment and educational expenditures on FLFP (15-64): estimated marginal effects 1997-2008
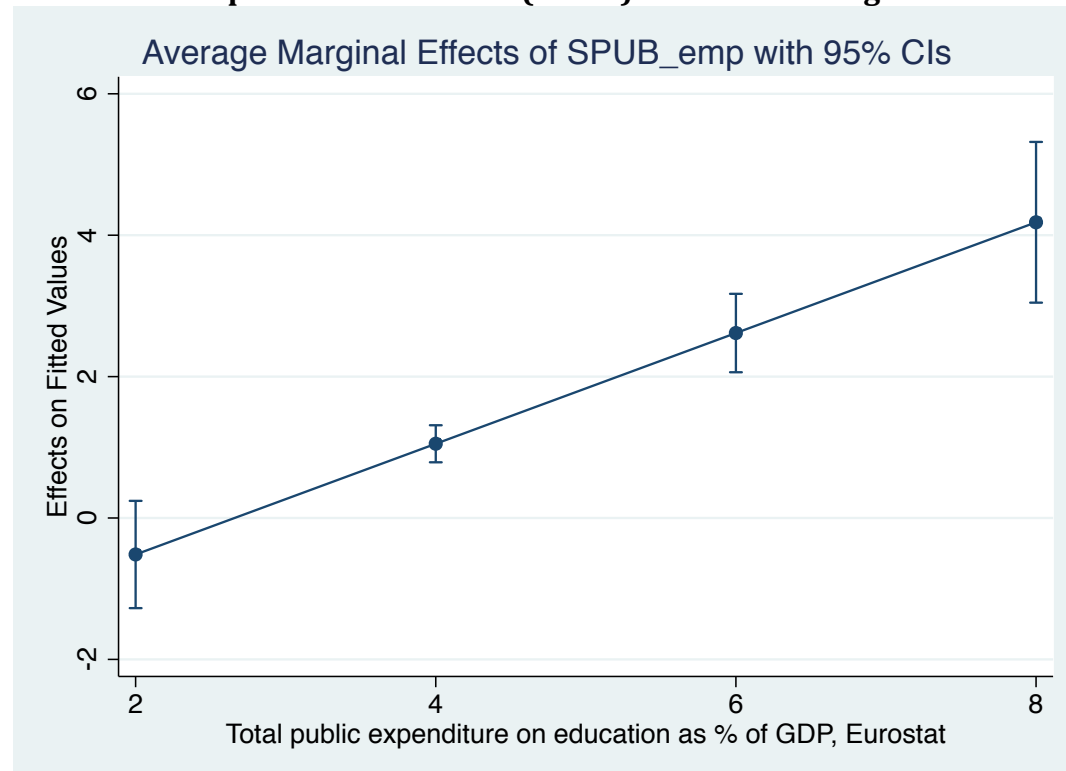
Note: 'SPUB_emp' stands for public sector employment as a share of total working age population.

Finally, the effect of public sector employment on FLFP is also higher at higher levels of educational expenditures but this effect is also more pronounced than for total KIS employment. All of the presented results are also preserved when the analysis is conducted on the restricted sample of countries (excluding FYR Macedonia, Serbia and Slovenia).

Given the amplifying effect that educational expansion proxies used in this chapter have on the relationship between KIS employment and FLFP, I find this evidence compelling enough to confirm H18.

6.7   Summary

In this chapter I conduct a LNA in order to test the seven hypotheses that stem from my theoretical model. The presented empirical evidence generally supports the posited relationships between the variables in the model and offers some guidelines for the focus of my qualitative analysis, which is presented in Chapter 7.

I show robust evidence to support the claim that industrial upgrading leads to the defeminisation of manufacturing, both across and within the countries in my sample. Furthermore, within country FE estimates trace an inverse U-shaped relationship between economic complexity and the share of women in manufacturing. This dynamic leads me to question whether this relationship could have been driven by the temporary access of Eastern European countries to female intensive low skill low wage jobs in footloose industries such as T&C, which would have moved to locations with cheaper labour once industrial upgrading pushed the wages up to a certain level. I investigate this proposition in Chapter 7.

Furthermore, OLS evidence on the negative impact of industrial upgrading on FLFP is a lot more compelling than within country evidence on this relationship from the FE estimates, which is insignificant. Nevertheless, KIS employment, which is a control variable in this analysis, has a robust positive effect on FLFP in all of my estimates. I therefore argue that this strongly positive effect of KIS on FLFP might capture some of

the overall negative effect of industrial upgrading on FLFP, as industrial upgrading is also posited to negatively affect FLFP by reducing the expansion of KIS. This argument also illuminates the weaknesses in using econometric estimates to trace complex causal relationships between the variables of interest.

For this reason, in the subsequent sections of this chapter I examine the relationships between industrial upgrading and educational expansion, as well as between educational expansion and the effect of KIS on FLFP, to determine whether industrial upgrading could also be exercising its indirect effect on FLFP through that causal mechanism. Empirical confirmation of these relationships strengthens my conclusion that industrial upgrading impedes the growth of FLFP in Eastern Europe.

The OLS evidence on the negative impact of industrial upgrading on educational expansion is more compelling than within country evidence based on FE estimates, but the empirical analysis allows me to confirm my hypothesis. Furthermore, given the compelling strength of both cross-country and within country empirical evidence, I conclude that women have disproportionately benefited from the creation of new KIS employment in Eastern Europe, so that feminisation of KIS is higher in those countries where the expansion of the sector is more substantial. I also show that public sector employment has a stronger effect on overall FLFP rates than private sector KIS employment. In the final section, I also confirm that educational expansion has an amplifying effect on the positive effect of KIS employment on FLFP, which is particularly pronounced in the case of public sector employment. I return to the question of public sector KIS employment and whether it is the preferred outcome of greater investment in educational attainment in Chapter 7, where I present the findings of my qualitative analysis of the social investment state in the Baltic.

A final caveat of this econometric analysis is the issue of adequate measurement of educational expansion and movement towards general skills education. I supplement the econometric findings shown in this chapter with a qualitative analysis of the role of the Baltic governments in transforming their educational systems during transition, which I present in Chapter 7.

Chapter 7. Assessing empirical robustness of the model on female labour force participation, industrial upgrading and service transition: a small-N analysis

In this chapter I test three hypotheses that complement the LNA from Chapter 6. The hypotheses are aimed at uncovering the causal relationships between the variables in my theoretical model and they are tested through a combination of descriptive statistical analysis and SNA, based on primary and secondary literature sources.

In the first two sections, I analyse the mechanism through which industrial upgrading led the to the defeminisation of manufacturing in the region. I posit that this occurred through the demise of female labour intensive manufacturing sectors and test that hypothesis in section 7.1. I then focus on the reason behind the demise of female labour intensive manufacturing sectors in section 7.2. In order to do that I analyse the political economy of trade relations between the core EU countries and the Eastern European ones by focusing on the case study of outward-processing trade (OPT). By focusing on the dynamics of global production chains in the T&C industry, this analysis moves beyond the traditional international trade paradigm, which is based on the concept of 'comparative advantage'.

The second part of the chapter analyses the drivers of educational expansion in the Baltic countries and examines whether these countries have developed any characteristics of social investment states. Following the analysis of the role of the Baltic governments in boosting the educational attainment of their populations, in section 7.4 I reflect on the sustainability of the social investment driven development paradigm in countries that are dependent on foreign sources of capital.

7.1 Low wage low skill female employment in manufacturing: a descriptive statistical analysis

In this section I test the following hypothesis:

H19: *Industrial upgrading reduces the share of women in manufacturing by reducing the share of female labour intensive sectors in manufacturing.*

As I discussed in the literature review in Chapter 2, empirical evidence from Southeast Asia and Latin America shows that industrial upgrading, due to the increasing capital intensity and manufacturing productivity in sectors targeted by the FDI, leads to defeminisation of manufacturing labour (Ghosh, 2001; Tejani & Milberg, 2010). Nevertheless, it is not entirely clear through which mechanisms manufacturing 'sheds' female labour as it increases in complexity. The proposed mechanisms have been: i) wage growth, which squeezes women out of these sectors, and/or ii) occupational segregation, due to which women do not have access to the upgraded sectors.

Given the high share of women in manufacturing employment during communism, I posit that the shedding of female labour from manufacturing in Eastern Europe could have occurred through the following three mechanisms:

i)   Occupational segregation: Male intensive manufacturing sectors were upgraded while female intensive sectors were not;
ii) Crowding out: Women were crowded out from the more technical manufacturing employment as the wages increased;
iii) Outsourcing: Women were disproportionately affected by the reduction of auxiliary non-production employment within manufacturing companies (e.g. cleaners, assistants), through the outsourcing of the non-core activities in the newly privatised companies.

There are strong indications that occupational segregation could have been the main driver of defeminisation of manufacturing in Eastern Europe since gender-based segregation by sectors of employment has been pervasive across the world historically (Bettio & Verashchagina, 2009, p.7), and industrial sectors where female employment is

pervasive are textile, footwear and leather industries (ILO, 2014),. This is because the communist countries of Eastern Europe and Central Asia, although known for their high engagement of women in industrial employment, have not been immune to gender bias in the sectoral distribution of labour (Lobodzinska, 1995, p. 23).

Therefore, in line with the occupational segregation argument, I expect that industrial upgrading in CEE as well as in Slovenia took place in male labour intensive industries and that this process negatively affected female labour intensive low skill low wage industry such as textile and clothing, due to the upward pressure on labour costs. At the same time, low skill low wage industry has lingered on at higher levels in the Baltic as well as in Bulgaria and Romania, because these countries did not upgrade their industries significantly.

In order to test H19, I use Eurostat's employment data on detailed economic activity (NACE Rev. 1.1, two-digit disaggregation), which is available for the period 1997-2008. I group the economic sectors by the share of women employed in them: the female labour intensive ones (where women make up more than 50% of total employees)[72] are textile, clothing and leather tanning; the gender balanced ones (where women make up between 40—50% of total employees) are manufacture of chemicals and chemical products, electrical machinery, medical, precision and optical instruments, pulp, paper and paper products, radio, television and communication equipment, and rubber and plastic products; while the male labour intensive ones (where women make up below 30% of employees) are fabricated metal products, furniture, machinery and equipment, non-metallic mineral products, transport equipment, wood and products of wood and cork. While these data are not fully reliable, since some data points are estimates only, they can be used to gauge the size and direction of employment trends across the different two-digit manufacturing sectors in Eastern Europe.

Among the female labour intensive manufacturing sectors, clothing was the largest employer in Eastern Europe during the 2000s, according to Eurostat. The three female labour intensive sectors together made up almost 30% of total manufacturing employment (in the case of FYR Macedonia, the share of these sectors was above 40%).

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[72] As defined by Kochhar et al 2006.

However, because data on employment in leather tanning is not available for all countries, I analyse the trends for T&C sectors only.[73]

Graph 7-1. Share of textiles and clothing in total manufacturing employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008

Source: Eurostat.

Notes: 1) All sectors are classified under NACE Rev. 1.1 two-digit level. 2) Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph 7-1 shows that the share of T&C sectors contributed just below 20% to total manufacturing employment in the Baltic countries at the end of the period of observation, while it was below 10% in CEE. The two sectors were even larger contributors to total manufacturing employment in SEE. FYR Macedonia led the way with a 40% share, while Bulgaria came second with almost 30%. Furthermore, an inverse U shape is visible in the Baltic countries, as well as in Bulgaria and Romania, where employment in these two sectors reached its peak during the early 2000s. The data for CEE and Slovenia, on the other hand, indicates a continuously declining trend of employment in these female labour intensive sectors of manufacturing.

Graph 7-2 shows the share of female workers in the T&C sectors. The already very high share of women in T&C grew even further in the Baltic countries, before it decreased

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[73] Graph A-21 in Appendix A7 indicates that the sector makes a very small contribution to overall manufacturing employment (below 3% in the Baltic and CEE, and up to 5% in SEE), while Graph A-22 in Appendix A7 shows the share of women in this sector.

again during the 2000s. The share remained stable in Hungary and Slovakia while it decreased in the Czech Republic. The share of women was relatively stable over time across SEE.

Graph 7-2. Share of women in T&C manufacturing employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
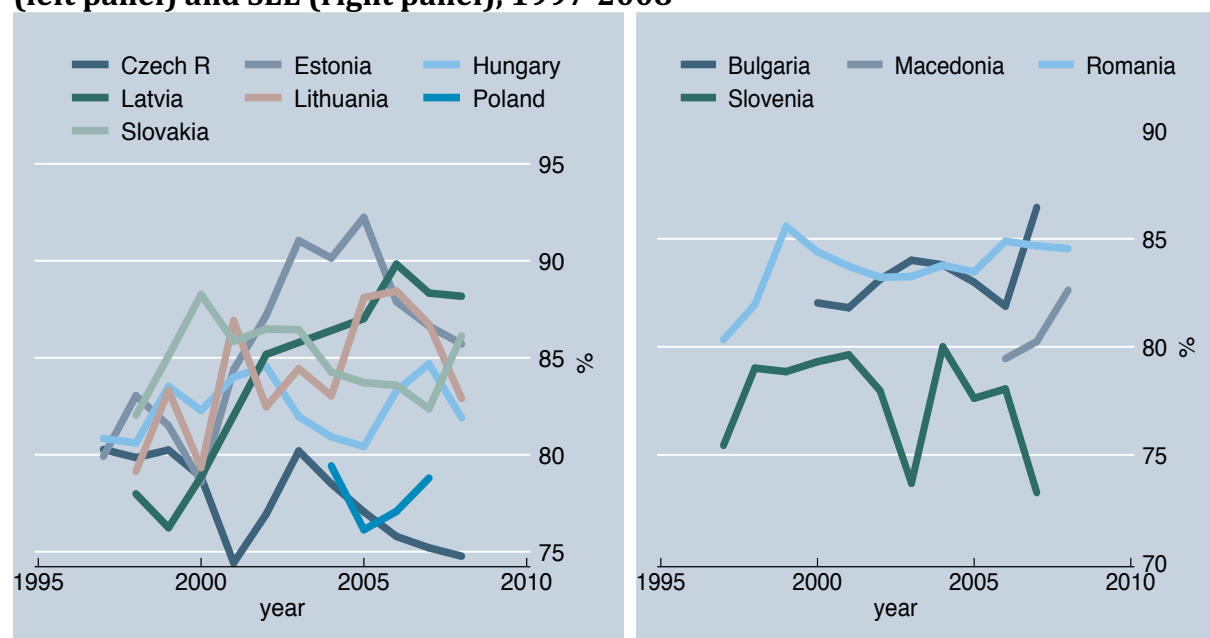
Source: Eurostat.
Notes: 1) All sectors are classified under NACE Rev. 1.1 two-digit level. 2) Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Table 7-1. Labour costs per hour in total manufacturing

	2000	**2004**	**2008**
Bulgaria	.	0.76	2.13
Czech Republic	.	4.18	8.56
Estonia	2.61	2.67	7.08
Latvia	1.41	1.26	4.93
Lithuania	1.8	1.92	5.35
Hungary	.	2.98	.
Romania	.	0.8	3.2
Slovakia	.	3.6	7.27
Slovenia	.	.	12.14

Source: Eurostat.

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These data indicate that female labour intensive manufacturing sectors employed a larger share of people in those countries where less industrial upgrading took place, especially during the early 2000s. Table 7-1 shows that labour costs in manufacturing in the Baltic, and particularly in Bulgaria and Romania, were indeed lower than in CEE throughout the period of observation and especially during the early 2000s. The countries' labour costs also reflect their economic complexity rankings. In the Baltic, Estonia had the most complex industry, followed by Lithuania and then by Latvia.

Graph 7-3. Share of gender balanced sectors in total manufacturing employment (left panel) and share of women in them (right panel), all available countries 1997-2008
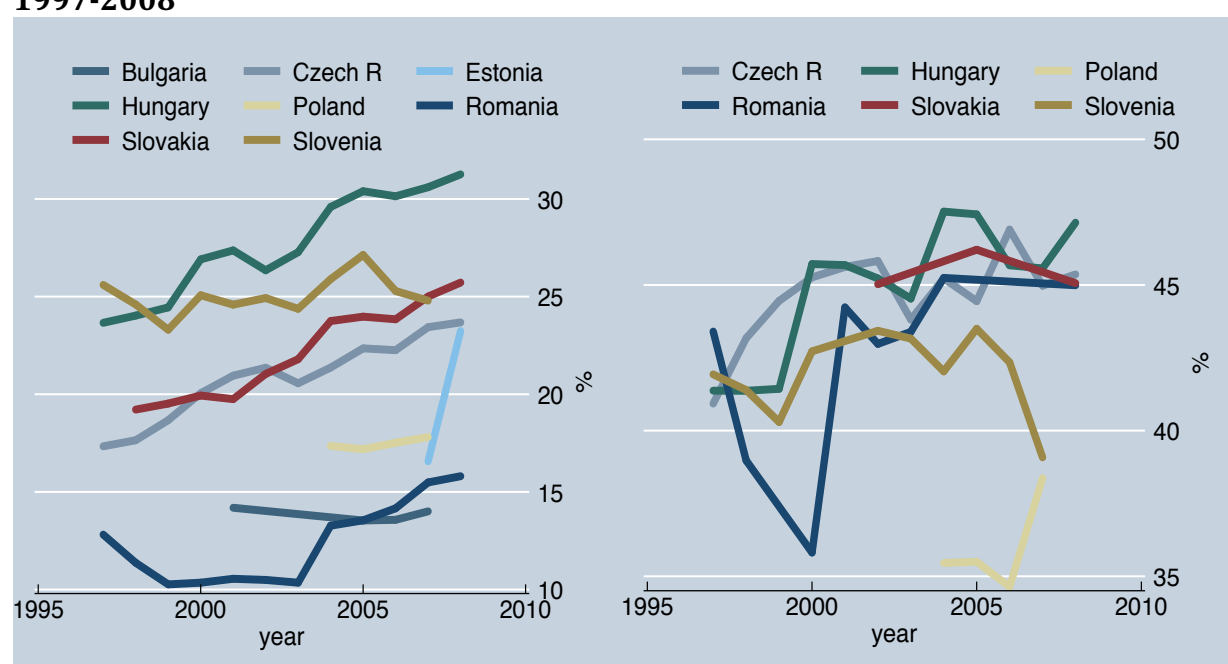
Source: Eurostat.
Note: 1) All sectors are classified under NACE Rev. 1.1 two-digit level. 2) Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Finally, Graph 7-3 shows trends in the gender-balanced sectors in order to assess whether women were also crowded out from the more technical employment as wages grew. Since the share of women in the gender-balanced sectors is not available for all countries and all years, and particularly not for the Baltic, I show the data for all available countries in the same graph. Graph 7-3 indicates that gender-balanced sectors did not experience a major source of loss of female employment since female rates were stable while the sectors grew. The share of these sectors in total manufacturing employment grew in all countries except Bulgaria and Poland. Furthermore, the share

of women did not drop in them, and in fact slightly increased, except in Slovenia (right panel).

Similarly, data on the male labour intensive sectors did not indicate any substantial change in total employment levels nor in terms of their extent of feminisation in most countries (see Graphs A-22 and A-23 in Appendix A7).

I conclude that women were not crowded out from the more complex manufacturing sectors and that the effect of loss of female industrial employment in CEE predominantly came from the reduction of employment in female labour intensive sectors of the economy. Finally, while I do not have the data on the non-production jobs in manufacturing, these trends also indicate that women did not lose jobs due to outsourcing in the more complex manufacturing sectors since 1997. While this could be the case because most of these non-core jobs disappeared already during the early stages of transition, it is evident from these data that outsourcing could not have been the driver of FLFP rates during the 2000s.

Therefore, empirical evidence shown in this section confirms H19, which argues that the presence of low wage low skill manufacturing in female labour intensive sectors determined the extent of female industrial labour in my sample of countries. While the above shown trends do not explain why only male intensive sectors were subject to industrial upgrading, they are consistent with the findings from Chapter 6, where an inverse U-shaped relationship was traced between economic complexity and the share of women in manufacturing (see Graph 6-6 in Chapter 6). In Chapter 6 I hypothesised that the inverse U shape was driven by temporary access of Eastern European countries to female intensive low skill low wage jobs in footloose industries such as T&C before their manufacturing industries upgraded. Once industry in these countries became more complex, labour costs rose and the low skill low wage jobs moved to locations with cheaper labour. This explains the declining portion of the inverse U shape. I analyse this proposed mechanism in more detail qualitatively in the next section of this chapter, by tracing the political economy of international trade and its U-shaped effect on female labour intensive manufacturing sectors in Eastern Europe.

7.2 Case analysis of outward processing trade and female manufacturing employment in Eastern Europe

In this section I test the following hypothesis:

H20: *Female labour intensive sectors of manufacturing did not upgrade because of the political economy of OPT.*

A neo-classical economic approach to analysing industrial upgrading would argue that some sectors upgrade while other do not because of competitive market forces. Sauré & Zoabi (2009) argue that male and female labour market outcomes may depend on a country's initial factor endowments, which determine how the country specialises following trade liberalisation. Following a model developed by Galor & Weil (1993), they differentiate whether the comparative advantage of the liberalising country lies in sectors with predominantly female or male labour.

Using such a theoretical framework, one can conclude that the loss of the comparative advantage in the feminised industries (such as textiles, clothing and leather tanning) following the collapse of communism was what led to the female exit from industrial employment in CEE during transition.

However, this theoretical literature on the gender impact of sectoral restructuring and trade reform appears to take a very stylised view of international trade, because it uses the analytical framework of the loss versus gain of comparative advantage. Nevertheless, empirical evidence indicates that the largest portion of the world trade occurs in intermediate goods, while final consumer goods, which are sold in one country, in fact consist of components that have been assembled in many different countries. This empirical regularity does not fit in well with the traditional international trade theory (Feenstra, 1998 in Baldone, Sdogati & Tajoli, 2001, p.80). Therefore, industrial restructuring is not an explanation of why something happens, but a process that needs to be understood in its own right.

A special case of this new international trade paradigm is outward processing trade (OPT). Textile and clothing industries, which are very female labour intensive, have

been affected by OPT more than any other industry globally. Other segments of industry do not lend themselves as well to OPT or to being as 'footloose' as textiles (Hanzl & Havlik, 2003, p.84).

These insights from the literature on the political economy of international trade have important implications for manufacturing trends in Eastern Europe. Bohle & Greskovits (2012) point out that Eastern European countries' domestic policies and past legacies created these new systems of production in interaction with the transnational actors such as the EU and MNCs. This indicates that a political economy lens of analysis is needed to understand the process of trade liberalisation in the region.

In the late 1980s producers of T&C from the EU started to develop cost reduction strategies due to increasing competition from low wage countries. These strategies involved moving the labour intensive phases of their production to countries with lower labour costs. At the same time, they kept the essential, more complex phases of production, such as design, intermediate inputs provision, and distribution of the final goods, in their home countries (Baldone, Sdogati & Tajoli, 2001, p.80). These trends coincided with the demise of communism and the opening of the Eastern European economies.

In fact, these global trends substantially affected the way industrial restructuring unfolded during post-socialist transition in the CEE. Hanzl & Havlik (2003) point out that CEE countries were forced to change their industrial policies as they re-oriented their trade towards the EU. While they upgraded their industry towards the more complex products, their T&C sectors were not targeted by FDI because OPT arrangements were preferred by EU producers (Hanzl & Havlik, 2003, p. 64). These arrangements helped the high cost firms from the EU to maintain price competitiveness in their domestic markets and withstand competition from low cost exporting countries (Heron, 2012, p.90).

Furthermore, empirical evidence shows that OPT does not utilise host countries' comparative advantages, so it cannot generate growth potential for the domestic industry. In other words, EU producers have been shaping the type and volume of production in this sector rather than the characteristics of the host countries (Baldone, Sdogati & Tajoli, 2001, p.80). Furthermore, Baldone, Sdogati & Tajoli (2001) show

through an econometric analysis that labour costs, as well as geographic and cultural vicinity, are the most important reasons why an EU producer would choose a country for an OPT partner (p.102).

Therefore, a country could concurrently upgrade its industry and benefit from temporary OPT agreements in textiles and other female labour intensive sectors such as leather and clothing. These arrangements would be terminated once the country's labour costs, which are driven by industrial upgrading, increase, because this makes the footloose industries move on to cheaper destinations. In the context of my theoretical model, the presence of OPT arrangements would therefore lead to temporarily less elastic relationship between industrial upgrading (K) and FLFP (L).

Apart from the growing wage levels which would have reduced the attraction of Eastern Europe as an OPT destination, EU trade policy during the 1990s and the early 2000s was particularly biased against the female labour-intensive T&C industry in Eastern Europe. It consisted of tariffs, quotas and promotion of OPT, all of which protected EU producers (Corado, 1995; Hanzl & Havlik, 2003; Heron, 2012).

Therefore, apart from OPT being the favoured mode of trade between EU producers and Eastern European countries in the female labour intensive manufacturing products, EU regulations also favoured that type of trade between the two regions. Tariffs for OPT were initially levied on value added only. Furthermore, in March 1992 the EU abolished tariffs for most categories of T&C imported after outward processing. This was extended to all products in December 1994. Consequently, imports related to non-outward processing (non-OP) cooperation arrangements (mainly subcontracting) and to FDI were at a disadvantage. These different regulations for OPT clearly benefited EU producers and discriminated against genuine Eastern European products. The differences vanished by 1 January 1997, when tariffs on non-OP imports were removed as well. After the elimination of trade barriers between the EU and Eastern Europe, the advantages associated with OPT were reduced (Hanzl & Havlik, 2003, p.64).

Trade data confirms that Western European textile imports from Eastern Europe during the 1990s were mostly based on OPT agreements. According to Heron (2012), who sources United Nations Economic Commission for Europe (UNECE) data, Hungary and

Poland (and later in Bulgaria and Romania)[74] were especially reliant on OPT, with such trade making up to 80% of their textile and clothing exports to the EU in mid 1990s. On the other hand, the role of OPT in the Czech Republic and Slovakia was much smaller (Heron, 2012, p.57), while in the Baltic countries OPT started playing a more important role in the late 1990s only (Wandel, 2010, p.58). This is the reason why employment in T&C industries shown in Graph 7-1 traces an inverse U-shaped curve only for the Baltic countries, Bulgaria and Romania (Eurostat data on employment by sectors of economic activity are available only from 1997 onwards).

Finally, T&C exports declined throughout Eastern Europe during the 2000s. This occurred because members of the World Trade Organisation (WTO) signed the Agreement on Textile and Clothing (ATC) during the Uruguay round in 1994. The ATC established a ten-year period to eliminate the use of quotas in all textile and clothing trade between WTO nations, which expired on 31 December 2004. Trade data show that this effect resulted in a further decline in Western European T&C imports, including OPT, from Eastern Europe (Heron, 2012, p.71).

Initial studies of the textile industry in Eastern Europe warned that female industrial employment was going to suffer disproportionately due to the discriminatory EU trade policy (Fong & Paull, 1993). Later studies then showed that OPT had saved much of the potentially disproportionate impact of sectoral restructuring on female employment during the first decade of transition (Ingham & Ingham, 2002). Yet, few studies warned that OPT-based employment in Eastern Europe was highly unsustainable, as it was purely based on low labour costs (Corado, 1995; Hanzl & Havlik, 2003).

In conclusion, this section showed that the EU promotion of OPT arrangements, coupled by the tariffs on genuine Eastern European products in the female labour intensive T&C industries, contributed to the unsuccessful restructuring and upgrading of the sector in Eastern Europe (although the sector was thriving during communism). The fact that Eastern European countries have been dependent on Western FDI for technological progress during transition (Jensen, 2002) has made this trend even more pronounced.

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[74] Bulgaria and Romania embarked on their accession journey later than the other Eastern European countries that are currently EU member states. This made them into increasingly attractive destinations for the relocation of low cost manufacturing as the wages in the rest of the region started to grow.

Given that insight, an explanation that focusses on the loss of comparative advantage in female intensive industrial sectors due to the opening of markets to international competition seems to be a grave oversimplification of what happened with female industrial employment in Eastern Europe. A complex international political economy of international trade appears to have shaped the dynamics of employment in female labour-intensive manufacturing sectors in Eastern Europe. Initially, employment in these sectors picked up due to OPT, following which it was dismantled. In terms of the implications of these findings for my theoretical model, I argue that OPT was the key driver of the inverse U-shaped relationship between economic complexity and FLFP that was traced in within-country FE econometric estimates presented in Chapter 6.

7.3   Case analysis of social investment states in the Baltic

In this section I test the following hypothesis:

H21: *State investment into educational expansion was an intentional strategy of Baltic governments to boost the development of the knowledge economy.*

Literature on capitalist diversity in Eastern Europe argues that the Baltic countries embarked on a 'disembedded neoliberal trajectory' of economic development during post-socialist transition (Bohle & Greskovits 2012). They characterised this model of capitalist development by low provision of social benefits along with a zealous pursuit of macroeconomic stability and economic openness. Bohle & Greskovits (2012) argue that this model was feasible because of these countries' emphasis on identity politics of nation building and alienation from the Soviet Union, which resulted in high social tolerance for inequality.

Examining the post-socialist development trajectory of the Baltic through this neoliberal lens might lead one to conclude that such a 'ruthless' form of post-socialist transformation forced low skill women to take any available jobs at low market wages and that this has been the main driver of high economic activity of women in the region. As I showed in the previous section of this chapter, low skill low wage female jobs in

manufacturing have indeed been better preserved in the Baltic than in the re-industrialised CEE. However, as I posit in my theoretical model in Chapter 3 and show in the LNA in Chapter 6, these jobs form only a small portion of the total female jobs in the Baltic economies and they cannot on their own explain the overall trends of high FLFP.

On the other hand, as I showed in the previous chapters, the Baltic countries have been characterised by a substantially higher share of the population (and especially women) with tertiary education than CEE (e.g. 34.5% of working age population had tertiary education in Estonia in 2008 in comparison to 12% in the Czech Republic). The difference was even starker along gender lines, because 13.4pp more working age women than men had higher education in Estonia in 2008, while the gender gap in tertiary education was below 1pp in the Czech Republic. Furthermore, substantially higher shares of women with tertiary education worked in the Baltic than in CEE in 2008.[75]

My theoretical model posits that this conspicuous presence of higher educational attainment in the Baltic in comparison to the more developed (in terms of GDP per capita) CEE countries is the result of active pursuit of educational expansion and social investment by the Baltic governments.

Bohle and Greskovits (2012), in their characterisation of the Baltic countries as neoliberal, do mention these countries' commitment to social investment. Yet, because of their narrow definition of the welfare state as measured by social transfers only, they conclude that these governments had weak welfarist contracts and did not even attempt to mitigate the potentially negative impact of free market forces on their citizens. Other authors, on the other hand, have written about the post-neoliberal era and the rise of the social investment state which cannot be characterised as laissez-faire (Perkins, Nelms & Smyth, 2004; Fougner, 2006; Jenson, 2010; Hemerijck et al., 2013). Given the high levels of educational attainment in the Baltic, these contributions appear to offer a more adequate account of the nature of the post-socialist Baltic state although the region was not included in their analyses. Furthermore, efforts to expand the

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[75] For example, 81.8% of working age women with tertiary education in Estonia and 85.1% in Latvia worked in 2008 in comparison to 75.7% in the Czech Republic and 75.5% in Hungary. See Section 5.6 in Chapter 5 for more detail.

definition of the welfare state beyond social transfers and also focus on social services, which often disproportionately benefit women, have grown in recent literature (see Schelkle 2012 for a survey of this literature). Nelson & Stephens (2013) argue, for example, that contrary to conventional wisdom about liberalisation, substantial public sector investment is needed in order to support growth of high productivity service jobs in an economy.

My examination of OECD reviews of national education policies shows that, as the Soviet institutions deteriorated in the Baltic countries in late 1980s, all three countries started the process of vigorous and all-encompassing education reforms which shared similar concepts and principles (OECD, 2002, p.15). The countries differed in terms of the sequence of implementation of educational reforms, but they nevertheless shared many similarities and they all saw unprecedented grassroots engagement of educators and drastic increases in tertiary educational enrolment numbers already during the early stages of transition (OECD, 2001a, 2001b, 2002).

Apart from a large number of legislative changes that served to reform the higher education curricula, strengthen the research infrastructure and create more flexible degree programmes, the Baltic countries' educational reform was also characterised by strategic thinking about the role of education in positioning themselves in the global economy. The Estonian government, most notably, launched the Tiger Leap National Programme in 1997 with the aim to modernise the educational system, and create an inclusive learning environment that is more suited to the needs of "a knowledge-based, information technology-intensive economy" (OECD, 2001a, p.54). The reform of the educational system towards a 'technological revolution' was also a way to revitalise democracy and bring citizens closer to the state, which was rebranding itself as efficient and modern (Runnel, Pruulmann-Vengerfeldt & Reinsalu, 2009). Furthermore, the OECD review of Estonia's education strategies also mentions that the country established the Estonian Education Forum, a working group which was in charge of producing strategic documents on the country's future education scenarios (e.g. 'Estonian Education Scenarios, 2015') with the aim to inform education policy making (OECD, 2001a, p.54).

Furthermore, according to *The Web Index*, Estonia is ranked very highly in a number of dimensions of the Internet's contribution to social, economic and political progress in countries across the world.[76] For example, in terms of the *Access and affordability of the Internet* component of the Index (which includes indicators such as access to internet in schools, cost of broadband per capita income and policies promoting free and low cost internet access), Estonia ranked third in Europe and Central Asia in 2014, right behind Denmark and Finland. While Lithuania and Latvia are not included in this survey, [77] the Czech Republic was in the 17th place, followed by Hungary which was in the 18th and Poland in the 22nd. In terms of the *Education and awareness* component of the index, Estonia was also ranked third (after Iceland and Denmark), while CEE countries were lagging behind substantially. This success in *The Web Index* rankings for Estonia is not surprising given the steady amount of resources the Estonian government has invested into ICT literacy since the onset of transition. The country's strategic plan to develop into a modern service economy has contributed to such performance (Runnel, Pruulmann-Vengerfeldt & Reinsalu, 2009). Lumiste, Pefferly & Purju (2007) also recognised the key role that the information society played in the economic development of Estonia.

Furthermore, investment in ICT in the Baltic may have also spurred further demand for higher education. As argued by Castelló-Climent & Hidalgo-Cabrillana (2010) skill-biased technological change can, in theory, increase the demand for higher education. "The shift in production technologies causes information technologies to be complementary to employees with higher skill levels since it increases the returns to schooling" (Galor and Moav, 2000 in Castelló-Climent & Hidalgo-Cabrillana, 2010, p. 2).

Apart from the important investments that the Baltic countries have made into educational and IT expansion, I showed in Chapter 6 that the public sector was an important driver of FLFP in these countries. I also posited that the relatively higher numbers of public sector employees in the Baltic countries were due to the strategic role education played in their economic development.

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[76] This index is produced by the World Wide Web Foundation and it is the world's first measure of the its contribution to social, economic and political progress in countries across the world.

[77] While this index does not include Lithuania and Latvia, other sources indicate that these two countries, although lagging behind Estonia, are aspiring European leaders in ICT.

While the public sector is formed of four sectors: i) public administration and defence, including compulsory social security, ii) education, iii) health and social work, and iv) other community, social and personal service activities, the expectation of my theoretical model is that employment in the education sector should have driven the overall higher trends in public sector employment in the Baltic.

Graph 7-4 shows the share of employment in the education sector as a share of total working age population in all 13 countries from my sample. The share is around 2pp higher in the Baltic countries than in CEE (left panel) and it is also higher in Slovenia by at least 2pp than in the rest of SEE (right panel).

Graph 7-4. Employment in the education sector as a share of total working age population
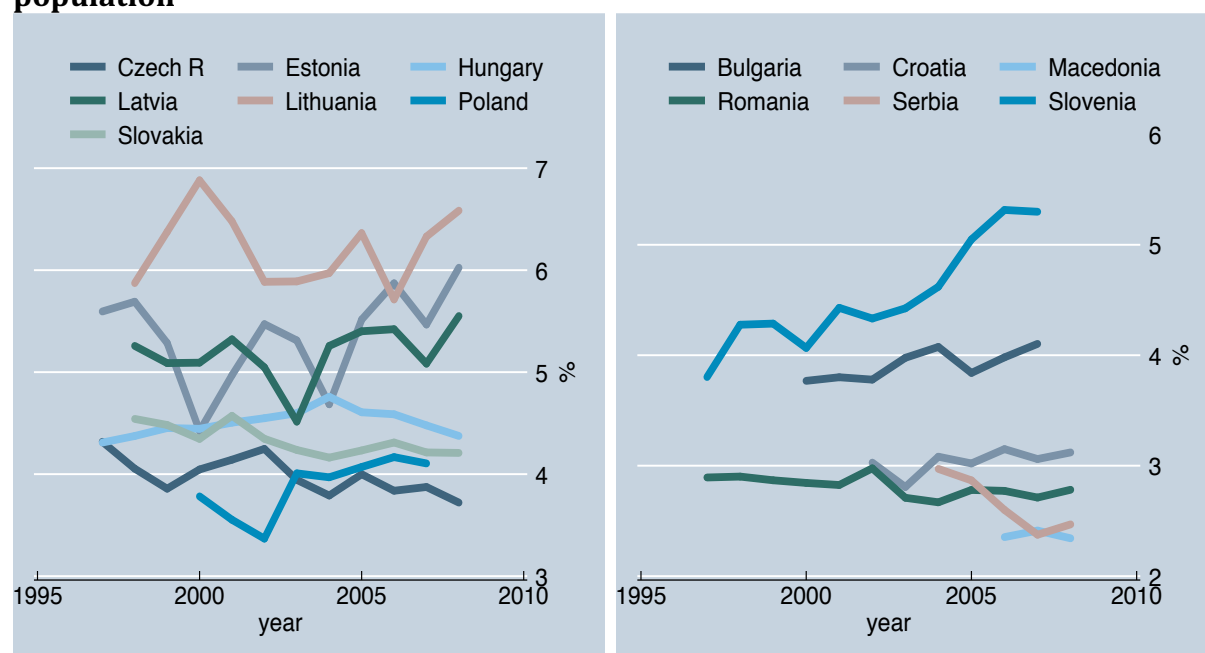
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

When it comes to female employment in the education sector as a share of the female working age population, Graph 7-5 shows that the difference between the Baltic and CEE countries is even more pronounced, with the largest gap being that of 4pp between the Czech Republic and Estonia (left panel). The trend is also more pronounced for Slovenia in comparison to other SEE countries, with the difference of 5pp between FYR Macedonia and Serbia on one hand and Slovenia on the other (right panel).

The trends in public administration, on the other hand, only show slightly higher numbers of both total and female employees for Latvia (Graph A-24 and Graph A-25 in Appendix A7), while the trends for health and social services do not indicate significant differences across the countries (Graph A-26 and Graph A-27 in Appendix A7). Therefore, I conclude that this evidence confirms the intuition of my model, which suggests that educational expansion has led to higher FLFP both through the creation of public sector jobs in education as well as improved employability of women with tertiary education in KIS.

Graph 7-5. Female employment in education as a share of female working age population
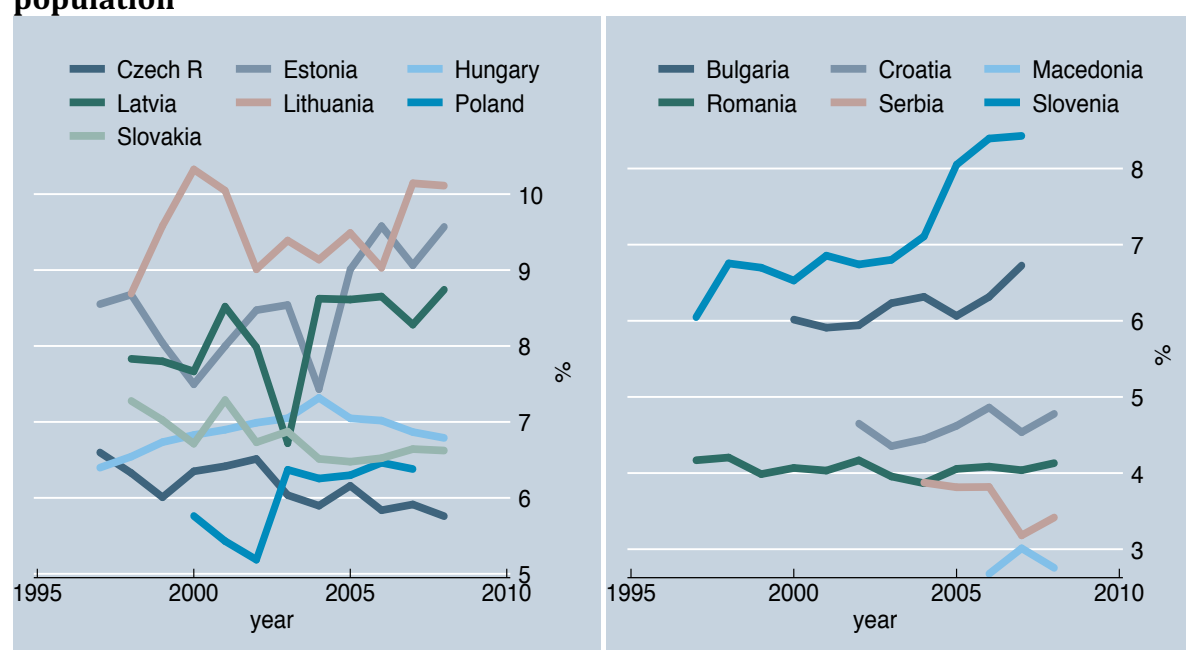
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

The evidence presented in this section is compelling enough to confirm H21 and to make us re-think these countries' categorisation into purely neoliberal states. I showed that the Baltic countries pursued cogent social investment agendas during post-socialist transition. Their expenditures in education and ICT literacy grew throughout their transition along with their levels of public employment. Women disproportionately benefited from these policies because of their growing numbers in public sector employment, but also through obtaining a disproportionate number of jobs in the expanding KIS. These countries' aim was to develop into internationally competitive

knowledge economies and, as both primary and secondary sources emphasise, their policy makers were aware that such an endeavour required social investment. Whether they have succeeded in building knowledge economies amid their dependence on foreign capital is a question I address in the next section.

7.4 Sustainability of the vicious vs virtuous cycles of female labour force participation in Eastern Europe

While empirical evidence presented in this and the previous chapter of this thesis supports the existence of a vicious cycle of FLFP in some Eastern European countries (CEE) and a virtuous one in others (the Baltic), two important questions stem from my findings. The first question is concerned with the longer-run sustainability of these two separate development trajectories, while the second focusses on whether there is a necessary trade-off between the two development trajectories or whether they could be combined in order to produce superior socio-economic outcomes.

Both Bohle & Greskovits (2012) and Epstein (2014) have written about the longer-run unsustainability of Eastern European externally dependent development models. Using the Polanyian framework of capitalism's tendencies to produce crises, Bohle and Greskovits (2012) argue that both CEE and the Baltic countries have faced a crisis of their development models during the Great Recession. Epstein (2014) insightfully juxtaposes the optimistic liberal economic narrative on Eastern Europe, which argues that the region has the ability to catch up with the West by implementing a series of liberalisation policies, to the sociological narrative, which argues that the region is plagued by historical structural backwardness and dependence on the West for its progress. Bugaric and Berend (2014) also warn about the overly optimistic view of the academic community when it comes to assessing the progress Eastern Europe has made during transition, given the current double crises of economic salience and democratic accountability.

From that perspective, the negative causal mechanism for FLFP that industrial upgrading creates in CEE needs to be considered vis-à-vis the wage growth associated

with industrial upgrading, but also the wider crisis of manufacturing employment in today's world. As manufacturing grows in complexity and becomes more capital intensive, which is a process that has been already taking place in the western economies, fewer people will benefit from high wage industrial employment and there will be more pressure on the service economy to absorb this excess workforce (Rodrik 2015b). Such a structural change could have important implications for both female and male workers in those CEE countries pursuing re-industrialisation.

On the other hand, while the positive causal mechanism identified in the Baltic gives more opportunities to women to emancipate themselves economically, there appears to be a cap to this model too. Despite substantial achievements in educational expansion in the Baltic countries, their wages have lagged behind the wage levels attained in CEE.

Table 7-2 shows that median hourly earnings in the services of the business economy have been lower in Latvia and Lithuania than in CEE countries throughout the 2000s, while Estonia was at the level of Hungary and Poland.

Table 7-2. Median hourly earnings in services of the business economy, in EUR (NACE – Rev. 2)

	Total			Women		
	2002	**2006**	**2010**	**2002**	**2006**	**2010**
Bulgaria	0.61	0.73	1.38	0.6	0.73	1.41
Czech Republic	2.48	3.56	4.39	2.2	3.04	3.89
Estonia	1.74	2.97	3.92	1.43	2.56	3.39
Latvia	1.1	1.9	3.02	0.95	1.72	2.67
Lithuania	1.26	1.82	2.41	1.16	1.79	2.3
Hungary	1.94	2.56	3.43	1.87	2.43	3.27
Poland	2.55	2.82	3.66	2.51	2.63	3.39
Romania	0.74	1.3	1.96	0.7	1.3	1.99
Slovenia	4.67	5.43	7.07	4.25	4.95	6.81
Slovakia	1.57	2.58	3.86	1.33	2.29	3.5

Source: Eurostat.

The difference between CEE and Baltic countries is even starker when we compare mean hourly earnings for people with tertiary education (Table 7-3). The data indicates that tertiary education pays better in CEE countries, but we also know that these countries have fewer people with tertiary educational attainment. Additionally, the gender gap in earnings for workers with tertiary education is smaller in the Baltic than in CEE and Slovenia.

Table 7-3. Mean hourly earnings of workers with tertiary education, in EUR

	2006			2010		
	Total	Men	Women	Total	Men	Women
Bulgaria	1.69	1.96	1.51	3.05	3.57	2.69
Czech Republic	7.24	8.38	5.64	8.24	9.44	6.77
Estonia	4.95	6.17	4.24	6.41	7.74	5.58
Latvia	3.71	4.18	3.45	4.99	5.66	4.62
Lithuania	3.83	4.3	3.51	4.66	5.09	4.39
Hungary	5.78	7.05	4.83	6.87	8.29	5.75
Poland	5.7	6.5	5.14	8.3	9.27	7.75
Romania	.	.	.	.	.	.
Slovenia	12.28	13.86	11.05	14.19	15.53	13.25
Slovakia	5.12	6.01	4.13	7.27	8.6	6.12

Source: Eurostat.
Note: data is not available for Romania.

Given the social investment oriented development strategies of the Baltic countries and their tremendous success in boosting educational attainment and IT literacy of their citizens, it is puzzling why these countries have not turned into high skill high wage knowledge economies, but have instead remained in high skill low wage equilibria. Furthermore, from the perspective of female economic emancipation, the low returns to high human capital makes one question the benefits of higher FLFP in the Baltic. Therefore, this thesis does not qualify the Baltic countries as having superior outcomes in terms of overall female economic empowerment.

This phenomenon of high skill low wage employment could be linked to these countries' dependency on MNCs and a global auction for skilled labour which these companies have pursued globally, leading to a reduction of wages for high skill labour across the world. As argued by Ashton, Brown & Lauder (2010), technological advances over the

past decade have led to the proliferation of digital Taylorism, which has included codification and digitalisation of knowledge possessed by technicians, managers and professionals.[78] This trend has been reflected in the greater reliance on software, which standardises and monitors inputs of skilled workers in large corporations across the globe. This has enabled MNCs to create a growing number of high skill service jobs in countries with low wages and high quality of education. Although explaining the drivers of the high skill low wage phenomenon observed in the Baltic is beyond the scope of this thesis, I suggest that future research should focus on why social investment policies and higher educational attainment in the Baltic have not translated into higher wages for their populations. This raises the question whether the social investment development paradigm could succeed in small, open emerging market economies in the European periphery, given the structural constraints imposed onto them by forces of global capital.

Along the lines of Bohle and Greskovits (2012) and Epstein (2014), my findings point to the limitations of the process of economic modernisation in Eastern Europe. While the trajectory of capitalist development driven by re-industrialisation has had a positive impact on wages and a negative one on FLFP, the trajectory that was driven by social investment/knowledge economy has had a positive impact on FLFP but a negative one on wages. This raises an interesting question. Is a necessary trade-off between the two models of development, or can the two models be combined so that the economic gains from manufacturing are used to finance social investment in education and the knowledge economy? Such a combination of the two models would lead to concurrent FLFP and wage gains.

The analysis presented in this thesis suggests that the idiosyncrasies of the Eastern European transition to capitalism during the 1990s and 2000s did not allow for the concurrent pursuit of both development models. As I discuss in Chapter 2, while CEE countries were not able to avoid the dynamics of global tax competition and EU

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[78] This work on digital Taylorism has not yet challenged the foundations of the conventional wisdom that more education will lead to more individual and national prosperity, both in the developed and in the developing world. Although it offers compelling empirical evidence and has enormous political economy implications, its serious message appears to have only impacted business and human resources literature to date.

accession, which placed severe fiscal constraints on their budgets, the Baltic countries were not competitive enough vis-à-vis CEE countries during the late 1990s to attract more complex manufacturing.

While I conclude that the implementation of concurrent trajectories of re-industrialisation and knowledge economy development were not possible in the specific context of Eastern European transition, my data indicates that the tide may have started to turn over the past few years. As I show in Chapter 6, we have started to observe growing investment in education in CEE countries (albeit from private sources) and growing complexity of manufacturing in the Baltic. These nascent trends should continue to be monitored in the future as they may create a possibility for convergence between the two development trajectories in the longer run. The story of capitalist development in Eastern Europe would, in that case, become a story about the best way of sequencing re-industrialisation vs knowledge economy oriented economic reforms and the socio-economic outcomes, such as levels of FLFP, that are associated with them, rather than the question of choosing one path vs the other.

7.5   Summary

The aim of this chapter is to support the findings of the econometric analyses presented in Chapter 6 with a 'deeper' account of the empirical manifestations of the causal mechanisms that is proposed in my theoretical model.

This chapter confirms the final three hypotheses that stem from my theoretical model. Using descriptive statistical analysis, in Section 7.1 I show that the demise of female labour intensive manufacturing sectors, such as T&C, is responsible for the shedding of female industrial employment. This finding confirms H19.

I then rely on primary and secondary literature sources to analyse the case of OPT between EU T&C producers and their Eastern European counterparts. My sources show that the EU promotion of OPT arrangements, coupled by tariffs on genuine Eastern European products in the female labour intensive T&C industries during the 1990s,

contribute to the unsuccessful restructuring and upgrading of this sector in Eastern Europe. This conclusion leads me to confirm H20, which produces the following implications for my theoretical model: OPT is an intervening factor in the otherwise negative relationship between economic complexity and FLFP.

In the second part of the chapter, I rely on primary and secondary literature sources to analyse the case of social investment states in the Baltic. Because of the important role that the Baltic governments play in the expansion of tertiary education, I find the relationship between the state and the market in the Baltic to be based on the social investment state paradigm. I therefore also confirm H21, the final hypothesis that stems from my theoretical model.

In the final section of this chapter, I reflect on the sustainability of the vicious vs virtuous cycles of FLFP in the region and the development models associated with them. I identify the limitations of both trajectories of economic development in Eastern Europe in terms of their impact on FLFP, but I also argue that greater convergence of the two models is possible in the years to come.

Chapter 8.   Conclusion

In this concluding chapter, I provide a summary of my argument and the main findings; summarise the original contribution of this thesis; discuss the policy implications of my research; and propose an agenda for future research that will build on the work presented in this thesis.

8.1   Summary of theoretical argument and empirical findings

This thesis begins by observing substantial variation in FLFP rates across post-socialist Eastern Europe. The observed divergence in FLFP trends during these countries' transitions to capitalism is puzzling given the high economic participation of women during socialism. Literature has not attempted to explain this phenomenon. Moreover, the common tendency has been to attribute socio-economic trends, which cannot be explained by existing western theories, to 'the black box of transition'. The thesis provides an answer to the following research question: Why were some Eastern European countries successful in reintegrating women into their labour markets during transition while others were not?

Following the identification of this puzzling empirical trend, complex literature is surveyed which draws on a variety of disciplines and attempts to explain the FLFP drivers around the world (Chapter 2). The economic 'thin theory' approach focusing on measuring the impact of individual variables on FLFP has become increasingly superseded by the more multifaceted 'thick theory' accounts of interaction between countries' political economies and their levels of economic equality between the genders. Political economy analyses of how countries' economic restructuring trajectories affect gender relations in the labour market, have not been extended and adapted to countries that have been going through all-encompassing institutional and structural change. Eastern Europe, the focus of this thesis, is an interesting case with many implications for other emerging economies as structural change and capitalist political economies in the making can be observed in fast forward mode.

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After an extensive survey of the literature that has attempted to theorise variation in FLFP trends across the world, a theory-oriented mode of explanation is adopted. A stylised model, explaining the observed variation in outcomes, is developed by means of deduction (Chapter 3). This model is again depicted in Figure 8-1.

Figure 8-1. Model of female labour force participation, industrial upgrading and service transition
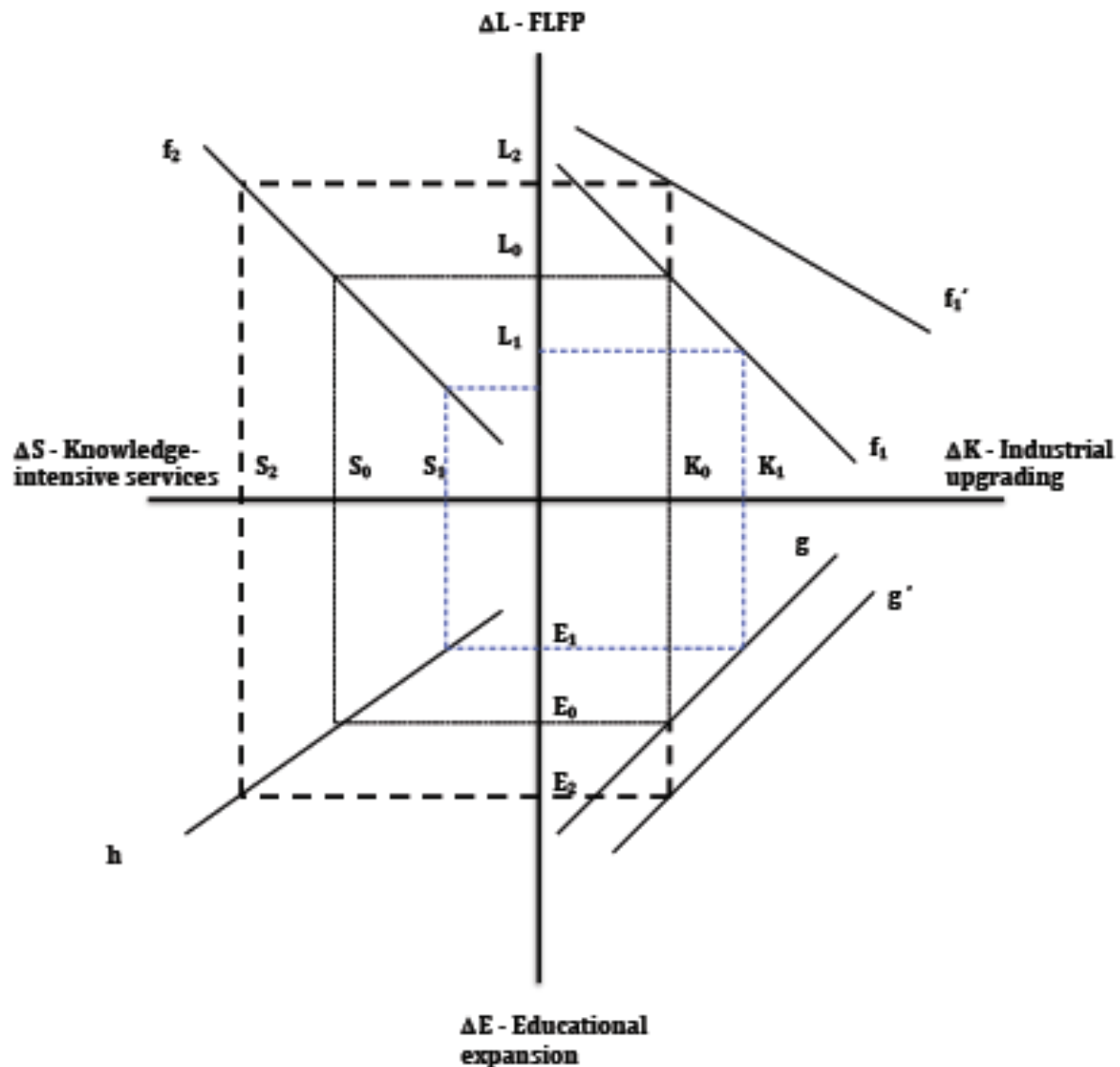
The model posits the mechanism through which varying trajectories of economic restructuring in post-socialist Eastern Europe have led to different FLFP outcomes. It spells out the relationship between industrial upgrading and expansion of KIS and the role of the country's skill regime in mitigating this relationship. The model allows us to

trace how countries can end up in a vicious cycle of low FLFP through the causal mechanism of industrial upgrading defeminising manufacturing employment. It also leads to a bias towards specific skills and the lack of educational expansion towards general skills, because the demand for skills is being shaped by MNCs as well as the considerable fiscal constraints that externally dependent economies face. This, in turn, impedes the development of the knowledge economy and the service jobs associated with it, which are particularly absorbent of the female labour force. The trajectory further reduces female economic opportunities, which have already been reduced through the loss of female manufacturing jobs.

The model also allows us to trace how countries end up in a virtuous cycle of FLFP growth. Countries that do not succeed in pursuing re-industrialisation as their growth strategy turn to the reform of their skill regime by investing in tertiary education and the expansion of general skills. This boosts KIS and the share of women who participate in the knowledge economy and education expansion, together with the public services that support such expansion. This positive feedback loop increases labour market opportunities for women.

Following the presentation of the theoretical model in Chapter 3, competing theories surveyed in Chapter 2 are tested empirically and the majority of them are ruled out.

I devote Chapter 4 to the operationalisation of my dependent variable – FLFP. This is necessary because there are many ways to measure FLFP so I need to ensure that the empirical findings are not driven by the different definitions of the dependent variable. Furthermore, a number of hypotheses are tested in order to ensure that the observed variation in trends is not merely a statistical artefact and that the countries' different levels of unemployment, historical trends or demographic structure are not driving it.

In Chapter 5 I juxtapose my theoretical model with other salient theories whose empirical congruence I test with descriptive statistical and econometric analysis. The chapter shows that economic development is insufficient to explain the observed trends. Furthermore, there is no substantial difference in the cultural values and attitudes of the respective countries to account for the observed variation. When it comes to work-life reconciliation, interesting results emerge. An econometric analysis reveals a positive relationship between fertility rates and FLFP, with Estonia standing

out as the country with the highest number of births per woman and the highest FLFP at the end of the observed period. [79] On the other hand, I find a negative correlation between the length of maternity leave and FLFP, and an inconclusive direction of the relationship between access to childcare and FLFP.[80] Although these results seem confusing, viewed from the perspective of my theoretical model they begin to make sense. I conclude that the causality of these relationships between work-life reconciliation policies and FLFP is difficult to disentangle because they are merely a reflection of other more structural drivers of FLFP and fertility trends and thus do not have enough explanatory power on their own.

There is a growing body of evidence from economically advanced countries showing that women who work tend to have more children (Billari & Kohler, 2004; Kinoshita & Guo, 2015), while the evidence is less compelling for developing countries. There is also evidence that women become more politically salient when they are economically active, leading to better family policy, easing their double burden of professional and family life (Goss & Shames, 2009; Iversen & Rosenbluth, 2006). This reinforces women's willingness to have children. On the other hand, populist and nation building discourse in a number of Eastern European countries following the collapse of communism have kept long maternity leave in those countries where fertility has decreased. I argue that it is ideologically dangerous to claim that 'long' maternity leave causes low FLFP because such arguments dismiss the role of the state in empowering women through a stronger welfare state. My interpretation takes on advice from Hall (2006), who advocates acceptance of certain components of existing theories in order to synthesise them with new insights, because that creates promising avenues for future research. Finally, I identify a positive role for greater female educational attainment on FLFP, and I use these findings to strengthen empirical support for the educational expansion component of my theoretical model.

Following the empirical rejection of competing theoretical accounts, my own theoretical model is tested and confirmed empirically (Chapters 6 and 7). Because of the

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[79] However, the variation in number of births per woman across the countries is not as high as the variation in FLFP.

[80] I examine three indicators: i) share of children in formal childcare, which shows a positive correlation with FLFP; ii) share of children in informal childcare, which does not show any correlation with FLFP; and iii) expenditure on childcare as share of GDP, which also does not show any correlation with FLFP.

quantitative nature of the dependent variable – FLFP – relationships between the variables that are posited in the model are first tested with quantitative methods, using descriptive statistical and econometric analysis (Chapter 6). The result of the econometric analysis, summarised in Table 8-1 below, supports all the causal relationships proposed in the model.

I complement this quantitative analysis with a qualitative analysis of two key relationships that are part of the model: i) the relationship between industrial upgrading and defeminisation of manufacturing, and ii) the relationship between educational expansion and growth of KIS, which are presented in Chapter 7 (the findings are also summarised in Table 8-1 below). While the quantitative analysis covered 13 Eastern European countries, including those from the Baltic, CEE and SEE, the qualitative study focussed on the regional analysis of CEE and the Baltic. A qualitative analysis that focusses on the entire region is feasible because I use quantitative indicators (following Collier, 2011, who applies them in process tracing) as well as primary and secondary literature in order to trace the causal mechanisms of interest for this thesis.

Table 8-1 summarises all the hypotheses whose empirical congruence I test in this thesis in Chapters 4 through 7. Hypotheses from H12 onwards are based on my own theoretical model and are tested in Chapters 6 and 7.

Table 8-1. Summary of the results of the empirical tests of the hypotheses

Question	No.	Hypotheses	Results of empirical tests
Chapter 4			
What is the nature of FLFP variation across post-socialist Eastern Europe?	H1	Higher FLFP rates are associated with lower gender gaps in LFP and vice versa.	Partially confirmed with descriptive statistical analysis.
	H2	Unemployment rates are driving variation in FLFP.	Rejected with descriptive statistical analysis.
	H3	Differences in historical trends in FLFP during communism correspond to the divergence in trends observed during post-socialist transition.	Rejected with descriptive statistical analysis.

	H4	Variation in FLFP rates of the youngest working age cohort (15-24 years) is driving FLFP for all working age women.	Rejected with descriptive statistical analysis.
	H5	Variation in FLFP rates of the oldest working age cohort (55-64 years) is driving FLFP for all working age women.	Partially rejected with descriptive statistical analysis.
Chapter 5			
What is the relationship between economic development and FLFP in post-socialist Eastern Europe?	H6	The level of economic development determines the level of FLFP.	Rejected with regression analysis.
What is the relationship between work-life reconciliation and FLFP in post-socialist Eastern Europe?	H7	The more traditional attitudes towards women's work, the les women are economically active.	Rejected with descriptive statistical analysis.
	H8	Women's participation in the labour force grows as fertility rates decrease.	Rejected with regression analysis.
	H9	Length of maternity leave determines the level of female economic activity.	Partially rejected with descriptive statistical analysis.
	H10	Better access to childcare leads to more economically active women.	Rejected with descriptive statistical analysis.
What is the relationship between female educational attainment and FLFP?	H11	The greater the female educational attainment, the more women are economically active.	Confirmed with descriptive statistical analysis.
Chapter 6			
What is the relationship between industrial upgrading and FLFP in post-socialist Eastern Europe?	H12	Industrial upgrading leads to defeminisation of manufacturing.	Confirmed with regression analysis.
	H13	Industrial upgrading has a negative impact on FLFP.	Partially confirmed with regression analysis.
What is the relationship between industrial upgrading and educational expansion in post-socialist Eastern Europe?	H14	Industrial upgrading inhibits educational expansion.	Confirmed with regression analysis.

What is the relationship between expansion of knowledge intensive services and FLFP in post-socialist Eastern Europe?	H15	Growth of KIS services leads to higher FLFP rates.	Confirmed with regression analysis.
	H16	The higher the share of KIS employment in the economy, the higher the share of women in KIS.	Confirmed with regression analysis and descriptive statistical analysis.
	H17	Growth of public sector employment leads to higher FLFP.	Confirmed with regression analysis.
What is the relationship between educational expansion and KIS in post-socialist Eastern Europe?	H18	Educational expansion amplifies the positive effect of KIS on FLFP.	Confirmed with regression analysis.
Chapter 7			
What is the causal mechanism through which industrial upgrading affects female employment in manufacturing?	H19	Industrial upgrading reduces the share of women in manufacturing by reducing the share of female labour intensive sectors in manufacturing.	Confirmed with descriptive statistical analysis.
	H20	Female labour intensive sectors of manufacturing did not upgrade because of the political economy of OPT.	Confirmed with primary and secondary literature.
Why did educational expansion take place in the Baltic?	H21	State investment in educational expansion was an intentional strategy of Baltic governments to boost the development of the knowledge economy.	Confirmed with descriptive statistical analysis, primary and secondary literature.

8.2   My original contribution

The thesis makes both a theoretical and an empirical contribution to CPE scholarship because of its comprehensive approach to analysing the drivers of FLFP in Eastern Europe. Inclusion of a detailed survey of literature and empirical testing of alternative

theories are necessary because none of the hypotheses have been tested in the region.[81] As a result there are very few theoretical and empirical building blocks available to this thesis.

The theoretical model, as the key contribution of this thesis, throws new light on the determinants of women's labour market opportunities in post-socialist Eastern Europe. It focusses on the dynamic changes in economic structure, which is an approach that has been widely neglected in the literature to date. Few studies have taken this approach to analysing the determinants of women's economic opportunities, even in advanced market economies (Estevez-Abe, 2006; Estevez-Abe & Morgan, 2008). None have done so in relation to Eastern Europe.

While the economic literature has investigated the role of specific sectoral changes on female employment within that particular sector, its tendency has been to examine one sector at a time. For example, topics of interest have been the impact of trade liberalisation on female employment in developing countries (Gaddis & Pieters, 2012; Ghosh, 2001), or the role of service expansion on female economic opportunities in advanced capitalist economies (Nelson & Stephens, 2013). These processes have been commonly treated as independent of one another and there has been no attempt, of which I am aware, to capture the dynamics of interaction between manufacturing and service employment. Yet, this dynamic of interaction between the different sectors is particularly salient for Eastern European countries, which have been reforming institutionally and share some characteristics with the developing world (e.g. dependence on FDI) and others with the West (e.g. relatively high national income levels). Furthermore, these processes have mostly been examined in the economic literature as automatic outcomes of competitive forces. Taking a CPE angle of analysis, my model accounts for the role of the state in reinforcing the impact of these market-driven processes on female inclusion into the labour force.

The model developed in this thesis allows us to think about the interactions between the various components of economic restructuring and their impact on female economic

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[81] Most of the studies focussed on individual Eastern European countries or sub-regions such as CEE or the Baltic. A number of studies also treated Eastern European countries as one region and juxtaposed it to Western Europe without examining the differences between Eastern European countries or groups of countries.

opportunities in a dynamic and integrated fashion. The model also reflects systems thinking and accommodates a non-linear notion of causality, both of which are being increasingly advocated by political economy and sociological literature (Hall, 2006; Rodrik, 2015b; Swedberg, 2014). In fact, following abundant criticism of VoC types of analytical frameworks as too static, the most recent work of CPE scholars has begun to focus on growth models and dynamic structural change (Baccaro & Pontusson, 2015; Hall, 2015).

In light of these recent trends in CPE scholarship, the incorporation of dynamic change into my model makes a contribution to the state of the art CPE literature. Furthermore, my exploration of the role of social investment in the continually evolving and institutionally unstable Eastern Europe is a good fit with the CPE literature that has only recently begun to take interest in social investment and the knowledge economy (Gingrich & Ansell, 2015; Thelen, 2014).

Another contribution of this thesis is the empirical testing of the proposed model and its rival theories. Studies that confirm the null hypothesis and/or report negative results are rarely published nowadays, which leads to the heavily criticised positive results bias in academic research and stalls the progress of academic research (Kram & Dinsmore, 2014). By publishing negative findings for a dominant paradigm, this thesis contributes to the recent endeavours of the mostly open access journals that encourage the reporting of negative research results.

This thesis is guided by the logic eloquently articulated by Rodrik (2015b) that every model captures a salient aspect of the social experience and the purpose of theorising is not to replace one theory or model with another superior one, but for them to expand horizontally so that we can explain a larger part of social reality. This approach is also endorsed by Hall (2006) who argues that we do not need to show that all other theories are wrong in order to prove our own. We can allow for multiple theories to co-exist and explain different components of the social reality (Hall, 2006, p. 29). It is in fact this balance of conclusions that stems from one's research that has the most power to advance a research programme and bring about new theoretical insights and syntheses (Lakatos, 1970 in Hall, 2006).

When it comes to my empirical contribution, my mixed methods approach is innovative because it combines quantitative econometric analysis with co-variational qualitative and systematic process analysis and presents a complicated array of data in an accessible manner. This approach is necessary because of the complex nature of causality and relationships between the variables that constitute my model.

My final contribution lies in the compilation of an extensive database on labour market and other socio-economic statistical indicators on Eastern Europe. The database consists of data that was complied from various sources such as Eurostat, the World Bank, ILO and the UN.

8.3   Policy implications

The main policy implication of this thesis is that the structure of a country's economy matters and that job creation is not a gender-neutral process. The thesis attempts to expand the existing understanding of women's socio-economic reality by adding a new perspective to a well-established problem of FLFP, which currently appears to be missing alternative policy proposals. Very little policy attention has been paid to the structural sources of female unemployment and labour market inactivity, with an assumption that the attraction of any FDI would create jobs in a gender-neutral fashion. My theoretical propositions and empirical findings support the argument made by Humphries & Sarasúa (2012) that women work when they have the opportunity to do so, when there are jobs available. This perspective is Keynesian, because it argues that unemployment is primarily due to insufficient demand and that fiscal policy is critical to regulating the cycle (Baccaro & Pontusson, 2015).

The EU-level policy recommendations that have been associated with the *Lisbon Strategy* during the 2000s and with *Europe 2020* from 2010 onwards have almost exclusively focussed on work-life reconciliation policies as convenient micro-level solutions to structural problems, such as low economic activation of women. The 2011 country EC level recommendations for most Eastern European countries, that lag behind the EU average, focus on the expansion of part-time work opportunities and

childcare facilities for women. Recommendations for Hungary are going a step further in arguing that generous benefits are keeping women out of the labour markets. The over-generosity of benefits, curiously, does not seem to be an impediment to female activation in Scandinavia, as discussed in the literature review in Chapter 2. Only in Bulgaria and Poland is there mention of improving future skills acquisition and training for women as part of the recommendations to boost their employment rates. Finally, these country-level recommendations are often produced when the countries' economies are juxtaposed to those in Western European. Such comparison can lead to the conclusion that Eastern European countries that have low part-time work shares are lagging behind Western Europe and this is why their women do not work. However, as my research shows, an entirely different picture emerges when these countries are compared with those Eastern European countries where women are successfully integrated into the labour market. In these countries part-time work is also low and their childcare facilities still have substantial room for improvement.

Because a different picture emerges from my research, different policy implications also stem from it. Post-socialist transition refuted Say's law that supply creates its own demand, as an abundant supply of labour did not manage to create new jobs without structural economic change and generation of demand for labour. Therefore, one has to wonder how we can expect that creating a greater supply of women to the Eastern European labour markets via reduced childcare responsibilities will automatically create jobs for them. In fact, my thesis implies that a political shift is needed away from considering women primarily as child-bearers, the situation since the onset of transition for many reasons including nation building (Gal & Kligman, 2012), as well as a focus on policies that can create employment opportunities for women across the spectrum. This is important because, as we have seen, women of all age groups are losing out in countries that are lagging behind in FLFP.

As women's retirement age is beginning to increase across the EU, focusing on women beyond childcare is a critical issue that needs to be tackled. Insights from intersectionality studies, which perceive women as a versatile group, with many different sub-groups affecting labour demand, including age, occupation, educational attainment and ethnicity, can complement efforts to create policies that better reflect a myriad of women's labour market experiences and obstacles.

I also identify a large role for specific public policies and budgetary decisions that these countries' governments need to adopt to correct biases that stem from the non-gender-neutral job creation process that is driven by FDI. In other words, my findings dispel the idea that high FLFP participation in the Baltic is purely market driven and neoliberal. Fiscal policies have significant scope for increasing FLFP if the right ones are implemented, such as the expansion of tertiary education and proliferation of general skills. The state can preserve skills and create new ones, acting as a stabiliser during turbulence. This is extremely important to recognise when there is a gender bias present in economic restructuring.

These findings have important policy implications due to the recent austerity pressures in Europe and particularly attacks on the size of the public sector in SEE. For example, people are reluctant to lose public sector jobs in SEE because of the weak welfare state, while they are more comfortable in CEE where the welfare state compensated them for employment losses. The Baltic countries represent 'a third way', where, as I show, the welfare state has not shrunk or entirely disappeared during transition but has, in fact, changed its nature due to varying social risks and growing fiscal pressures. These countries also preserved public employment at the level that is significantly higher than in CEE, and particularly in SEE (except Slovenia). In fact, as Jensen (2008) argues, education should be considered part of the welfare state and its absence from welfare state literature and measurement may be more a matter of convention than anything else (p.160).

The policy question that should be of major relevance for Eastern Europe is the nature of expenditure required for the welfare state. The ideal combination of coverage of both 'old' and 'new' social risks, which can be encountered in Sweden, would require too many fiscal resources for Eastern European countries. Therefore, a choice has to be made. While this thesis is not advocating the dismantling of the traditional welfare state, my intention is to draw attention to the fact that, in the Eastern European context, policies that push women outside the family realm and give them tools for independence, such as education, may in fact empower them more than passive welfare receipts. Therefore, the policy discussion should focus on the type of expenditure and jobs that the public sector should be creating rather than whether the welfare state should exist, or public employment that supports that state. In other words, public

social spending should be framed as social infrastructure spending, whose intention is to preserve or create human capital, rather than as a mere cost with no real benefit for the future growth and development of a country.

State investment in education and training, to equip the population with adequate skills for the knowledge economy, should be an important concern for Eastern European countries because it improves women's employment opportunities in both the public and private sectors. As providers of these state investment services, it is clearly not a panacea, given the high skill, low wage jobs in the Baltic. A concurrent focus on the quality of employment and the boosting of market returns to education, as envisaged by *Europe2020* is also crucial.

Another salient issue that this thesis has emphasised is the presence of occupational segregation, including across manufacturing sectors, where more men are employed in the better-paid sectors and occupations than women. On the other hand, recent literature has begun to question whether we can expect industrial upgrading to lead to social cohesion and equality in the future. While Thelen (2012) is concerned about liberalisation which has led to labour market dualisation in advanced countries such as Germany, Rodrik (2015a) expresses scepticism over the potential of industry to absorb the labour force in developing countries in the future because of the increasing reliance on technology in production processes and a decreasing requirement for labour. In light of these authors' concerns and the empirical evidence they provide, my findings indicate that the policy makers in Eastern Europe are facing a fiscally constrained situation of having to manoeuvre between the Scylla of pursing industrial upgrading, which sheds women from the labour market but allows for higher wages for those employed in industry, and the Charybdis of pursuing expansion of the knowledge economy in the context of proliferation of digital Taylorism of high skill low wage jobs. In the latter situation women and men have more human capital and are more equally represented in the labour market but they all earn less.

The future sustainability of externally dependent re-industrialisation and its impact on female labour vis-à-vis the future of the knowledge economy in FDI-dependent countries is an important question that merits further attention. This is particularly pertinent given that re-industrialisation has been perceived as a panacea in Eastern

Europe and Baltic countries have been seen as 'losers' because of their inability to attract more complex manufacturing (Bohle & Greskovits, 2012). In other words, the trilemma that should be plaguing Eastern European policy makers is that industrial upgrading in combination with dependence on FDI does not allow sufficient fiscal or political room for the expansion of the social investment state, while pursuing social investment and FDI to invest in the knowledge economy does not leave enough fiscal space to concurrently attract more complex manufacturing.

Finally, my data indicates that the tide may have started to turn. We have seen a growing investment into education in CEE over the past years and a growing complexity of manufacturing in the Baltic. Therefore, the trilemma facing policy makers in the region may convert, in the longer-run, into the question of appropriate sequencing of re-industrialisation vs social investment oriented policies rather that of choosing one trajectory over the other.

8.4   Future research agenda

My model opens up room for new theoretical, empirical and normative research on what it means to achieve higher FLFP and the nature of the trade-offs involved. There is room for both horizontal and vertical extension of my theoretical framework. Extensions to other emerging markets, which depend on foreign sources of capital, may produce novel insights. The model could also be expanded to include other components of gender inequality in the labour market, including gender pay gaps, job quality and occupational segregation. Finally, because of the complex structure of causality that I introduce in my model, different avenues for empirical testing could be explored by including other components of quantitative or qualitative research and proposing a more effective way to integrate the model's findings and use it to explore possible equilibria for different countries.

Insights from this thesis may also inspire future research projects that could endeavour to disentangle the relationship between female economic activity, political activism and family policy given the growing trend in CPE scholarship to examine mutual

interactions between economic and political variables and particularly how economic conditions affect political developments (Hall, 2015). This is because female economic activity has important implications for women's political preferences and voting behaviour. Evidence from developed countries shows that women who work vote very differently from women who do not work and from men, (regardless of their working status). Working women tend to be more left-wing as they are supportive of investment in education and healthcare, as well as policies which enable them to work while raising children (Iversen & Rosenbluth, 2006).

A particularly promising research avenue that stems from this thesis is the question of sustainability of the current Eastern European capitalist development trajectories following the Great Recession and the problem of high skill low wage labour in the knowledge economy that is captured in the digital Taylorism argument put forward by Ashton, Brown & Lauder (2010). Questions such as 'What is the potential of Eastern European countries to thrive as knowledge economies?' represent an interesting puzzle for economic modernisation theories and for the unfettered optimism 'bug' of the knowledge economy literature such as Mellander & Florida (2012). Such literature has now begun to 'infect' CPE literature as well, particularly when it comes to theorising the prospect of the knowledge economy improving gender equality. Specifically, an improved understanding of the impact of public sector knowledge-intensive jobs on the generation of knowledge-intensive jobs in the private sector, and the gender dynamics of these processes, is needed.

In light of these advances in scholarship, my thesis calls for a research programme on the dualisation of the knowledge economy, both along the lines of predominantly male high productivity hi-tech jobs and predominantly female lower paid knowledge service jobs in the public sector.

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Appendices

Appendix A3

A.3.1 Background information: Eurostat classification of knowledge intensive services (KIS)

The following economic activity sectors are defined as knowledge-intensive services, abbreviated as KIS (NACE Rev.2 codes - 2-digit level between brackets):

High-tech knowledge-intensive services:

- Motion picture, video and television programme production, sound recording and music publishing activities (59);
- Programming and broadcasting activities (60);
- Telecommunications (61);
- Computer programming, consultancy and related activities (62);
- Information service activities (63);
- Scientific research and development (72)

Knowledge-intensive market services (excluding financial intermediation and high-tech services):

- Water transport (50);
- Air transport (51);
- Legal and accounting activities (69);
- Activities of head offices; management consultancy activities (70);
- Architectural and engineering activities; technical testing and analysis (71);
- Advertising and market research (73);
- Other professional, scientific and technical activities (74);
- Employment activities (78);
- Security and investigation activities (80)

Knowledge-intensive financial services:

- Financial service activities, except insurance and pension funding (64);
- Insurance, reinsurance and pension funding, except compulsory social security (65);
- Activities auxiliary to financial services and insurance activities (66)

Other knowledge-intensive services:

- Publishing activities (58);
- Veterinary activities (75);
- Public administration and defence; compulsory social security (84);
- Education (85);
- Human health activities (86);
- Residential care activities (87);
- Social work activities without accommodation (88);
- Creative, arts and entertainment activities (90);
- Libraries, archives, museums and other cultural activities (91);
- Gambling and betting activities (92);
Sports activities and amusement and recreation activities (93)

Source: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Knowledge-intensive_services_(KIS)

Appendix A4

Graph A-1. FLFP (15-64) in 2008 and in 2010, Baltic and CEE
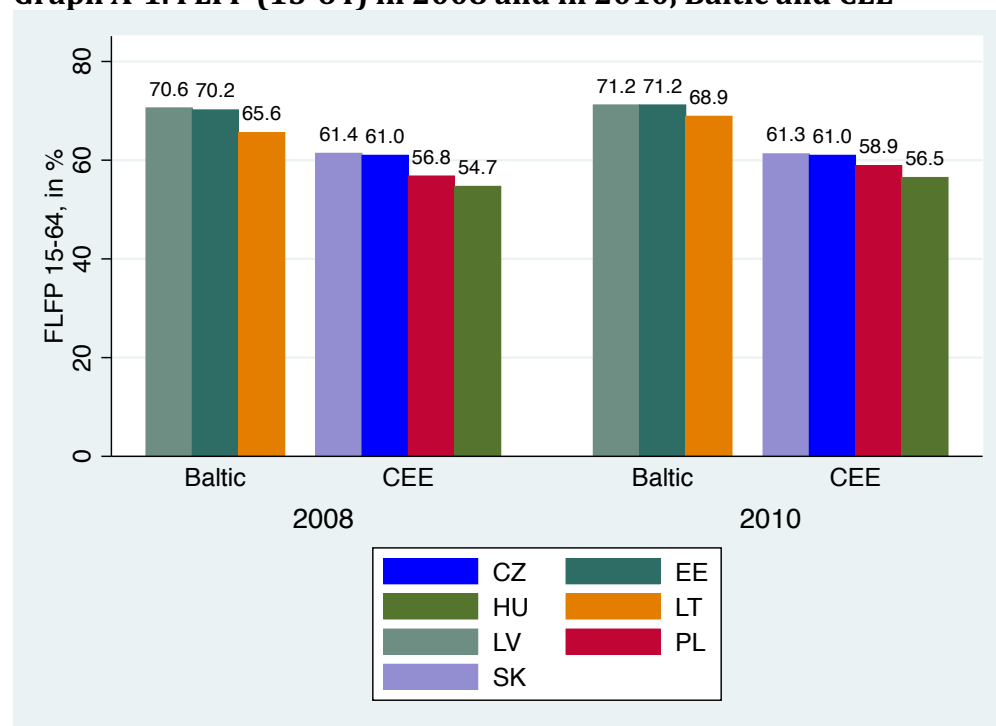
Source: Eurostat.

Graph A-2. FLFP (15-64) in 2008 and in 2010, SEE
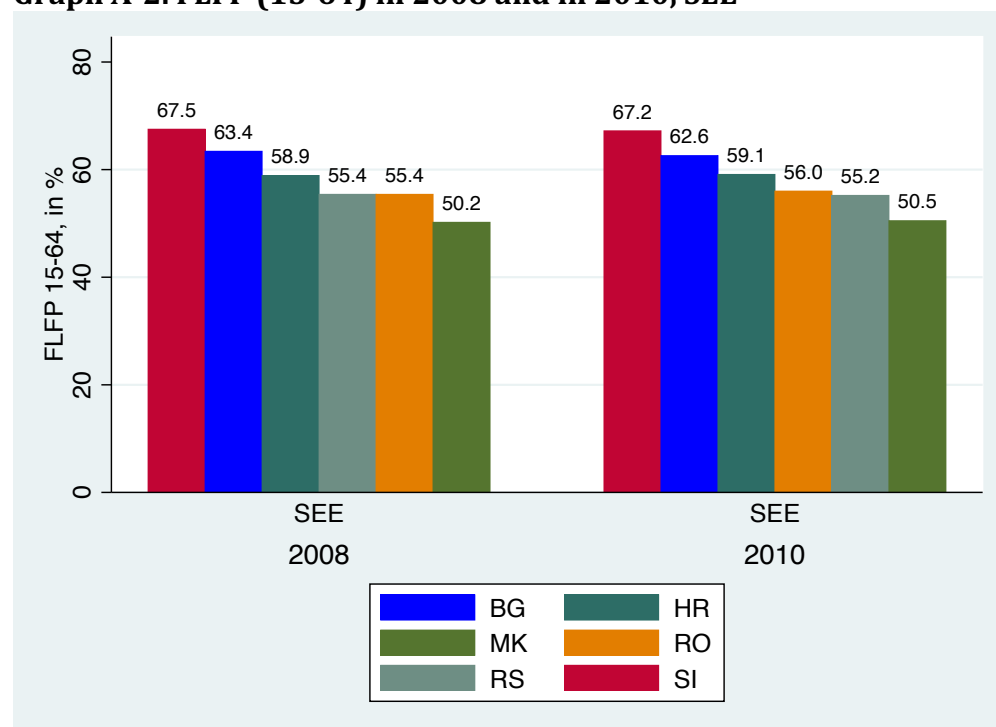
Source: Eurostat.

Graph A-3. GGAP (15-64) in CEE and Baltic (left panel) and SEE (right panel), 1990-2010
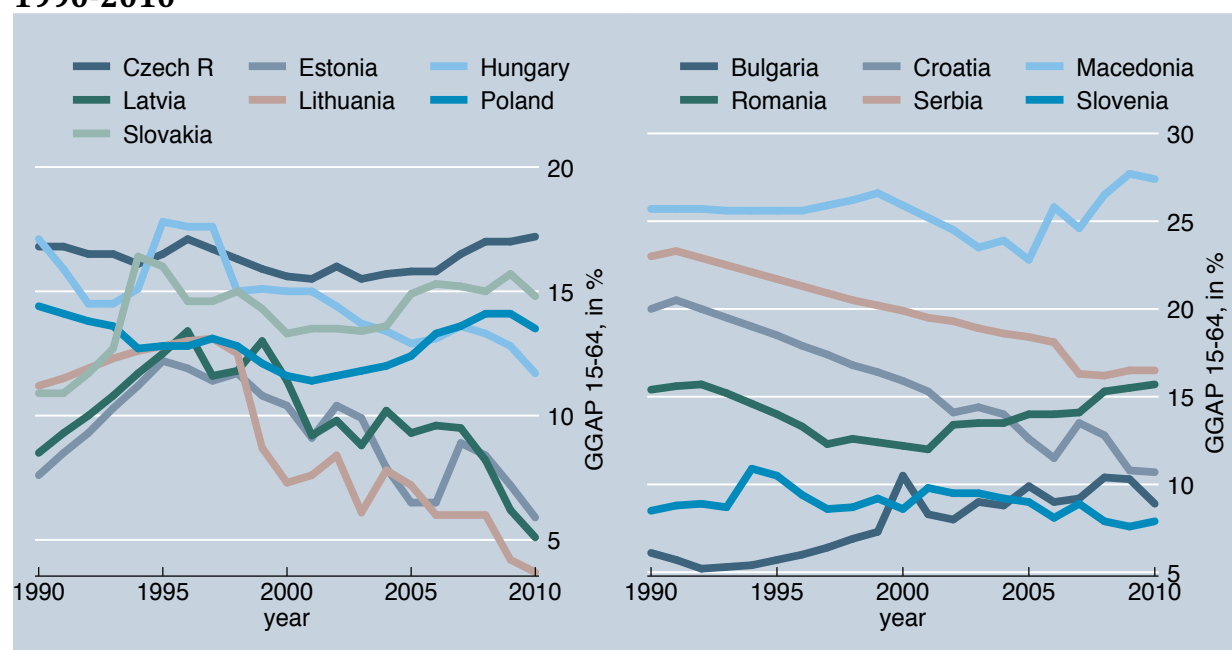
Source: Eurostat.
Note: The range of values on the Y-axis is not identical on the two graphs. This is because equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-4. FLFP (15-64) and GGAP (15-64) in all countries, 2010

Source: Eurostat.

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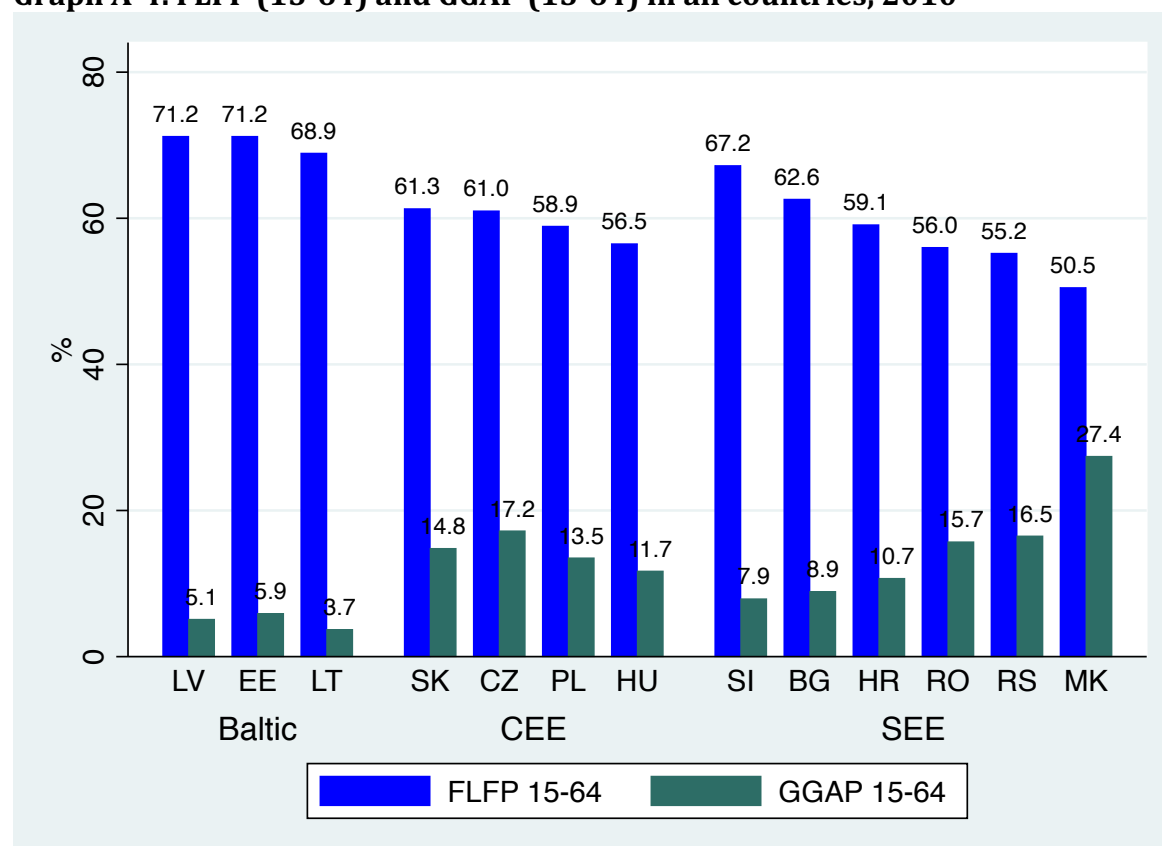
Graph A-5. Female unemployment rates in CEE and Baltic (left panel) and SEE (right panel), 1990-2010
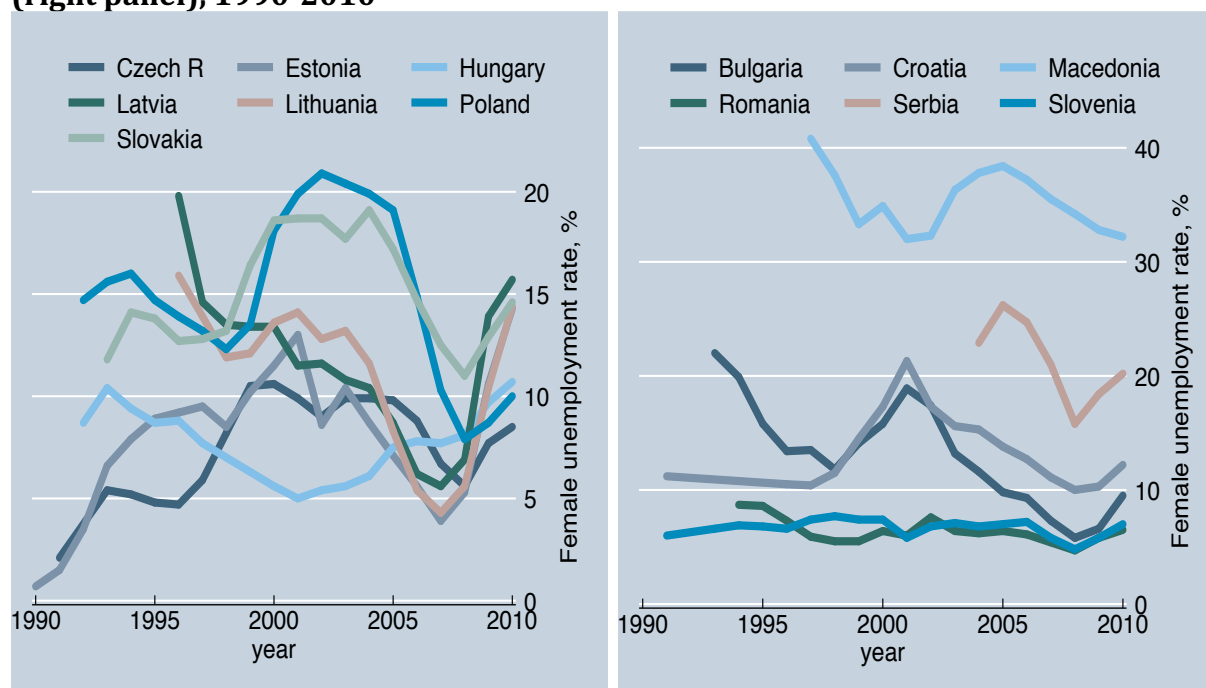
Source: Eurostat.
Note: The range of values on the Y-axis is not identical on the two graphs. This is because equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-6. Female employment rates in CEE and Baltic (left panel) and SEE (right panel), 1995-2010
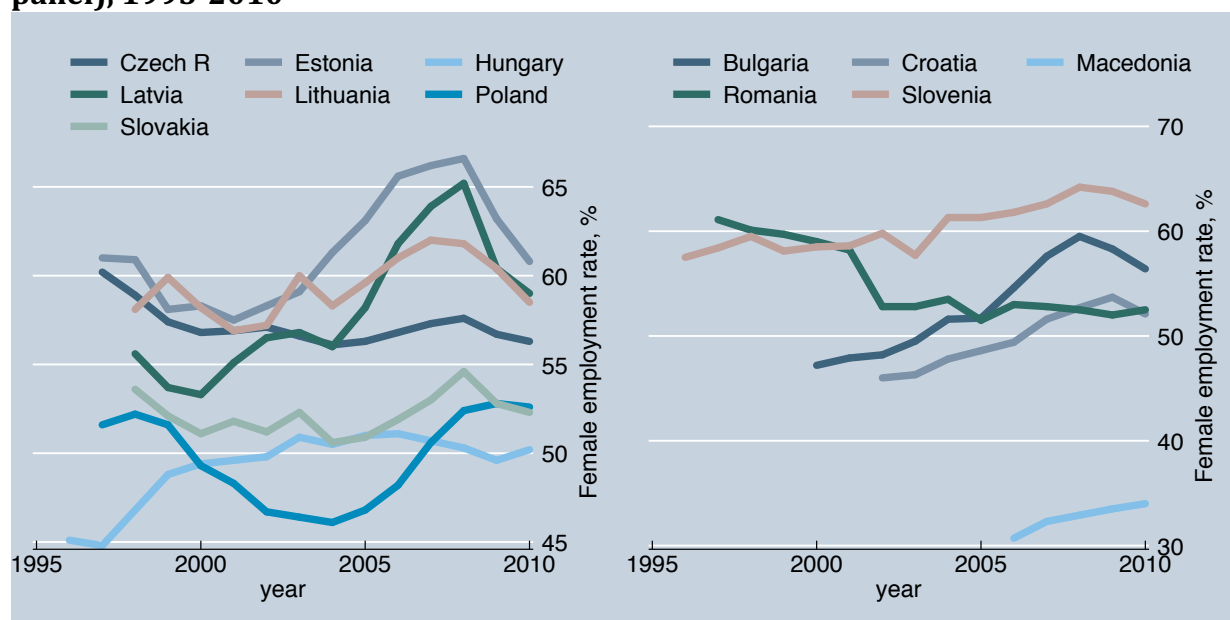
Source: Eurostat.
Note: 1) Data is missing for Serbia. 2) The range of values on the Y-axis is not identical on the two graphs. This is because equalisation of values on the Y-axis would have made it difficult to read the data off the graphs. 3) Data is not available before 1995.

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Graph A-7. Gender gap in employment in CEE and Baltic (left panel) and SEE (right panel), 1995-2010
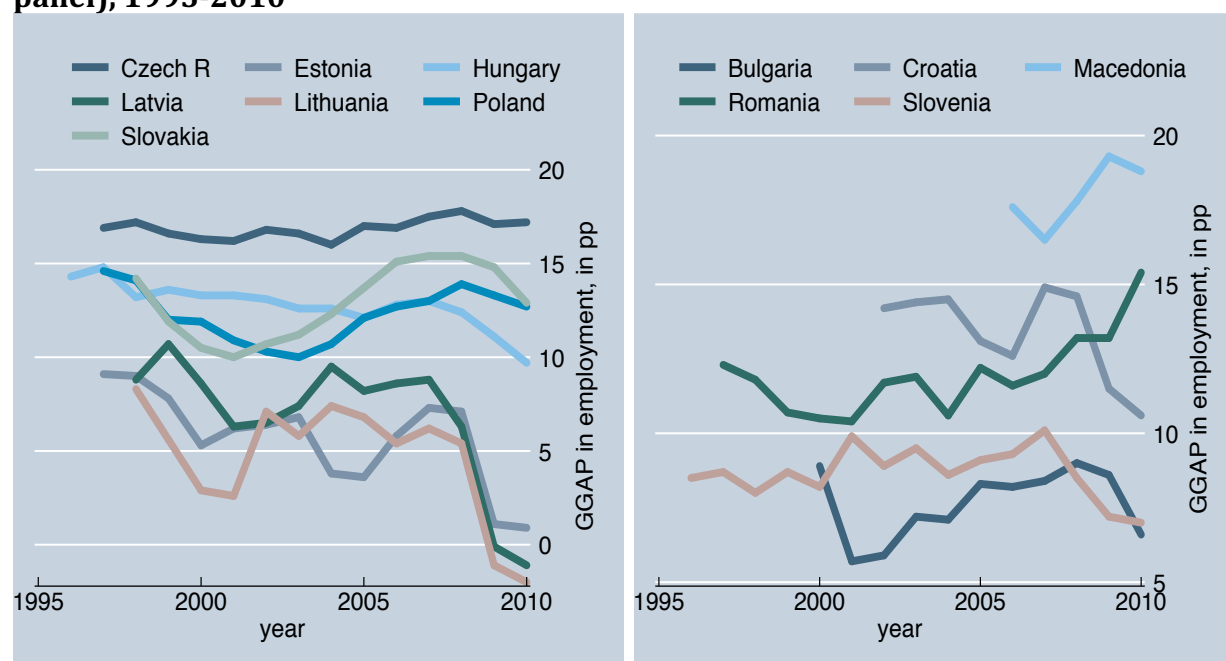
Source: Eurostat.

Note: 1) Gender gaps are defined as positive if they disadvantage women in comparison to men, and negative if men are disadvantaged. Convergence of the gender gap towards zero represents gender equality within the sphere a particular indicator measures. 2) Data is missing for Serbia. 3) Data is not available before 1995. 4) The range of values on the Y-axis is not identical on the two graphs. This is because equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-8. Average FLFP (left panel) and GGAP (right panel) by decade and world region, before 1990
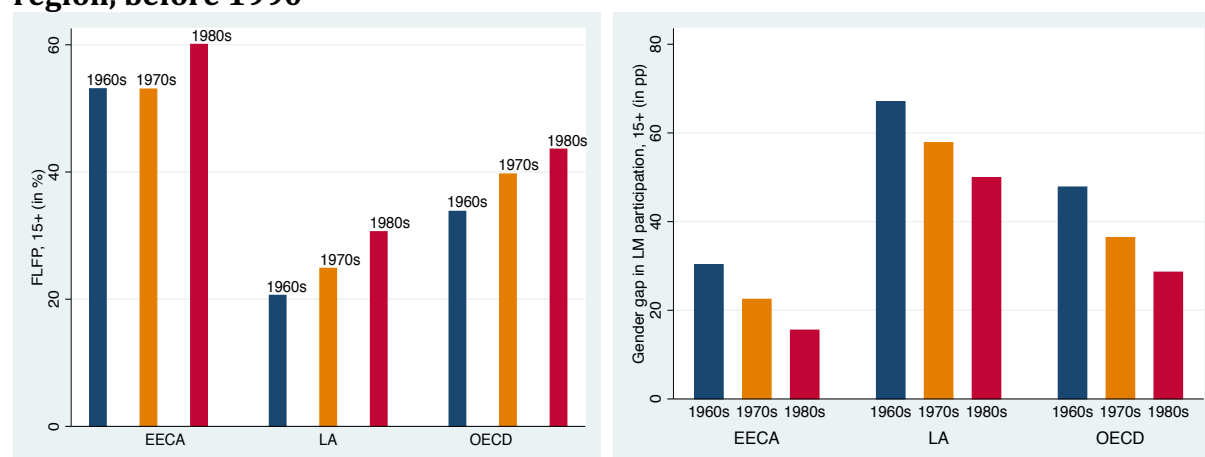
Source: Author's own calculations based on data from ILO Laborsta database.

Notes: 1) EECA stands for Eastern Europe and Central Asia and includes countries that at the time comprised Eastern Europe and USSR.

2) Data does not comprise all years and all countries, especially for EECA (it includes some years for the following countries: Belarus, Bulgaria, Czechoslovakia, Estonia, Germany GDR, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, USSR and Yugoslavia).

3) Yugoslavia pulls down the overall average for EECA.

4) Latin American data excludes Caribbean islands.

5) OECD data is without the current Eastern European members.

Graph A-9. Share of young women (left panel) and elderly women (right panel) in the total working age population of women
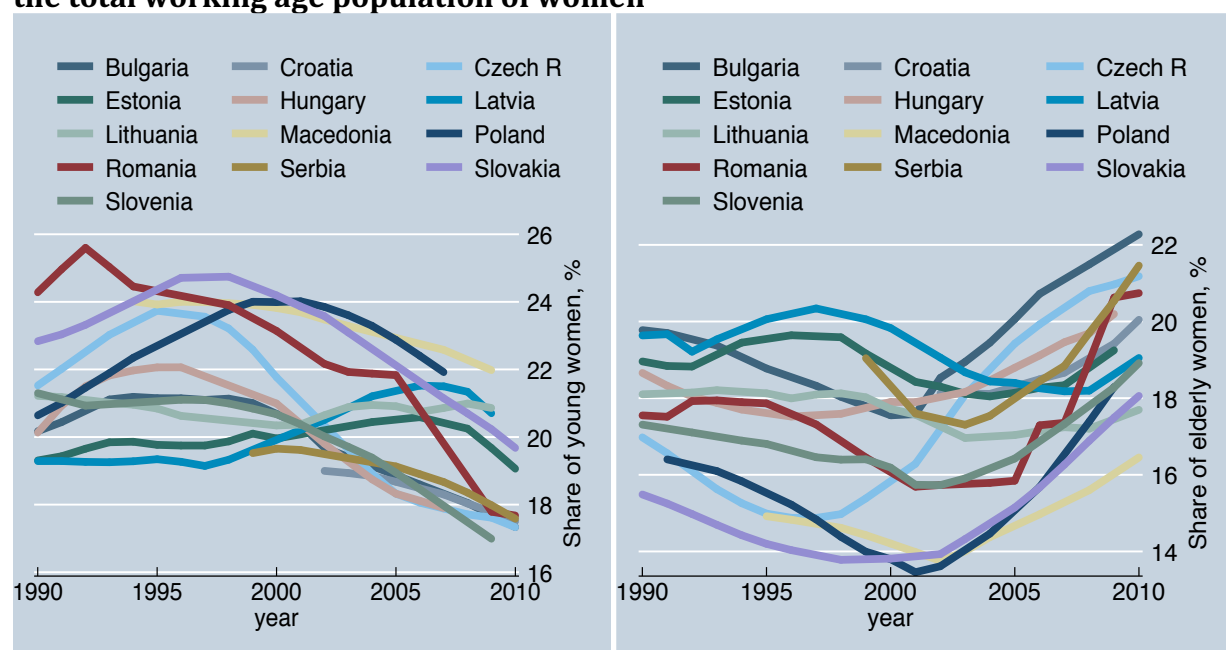
Source: Eurostat.

Graph A-10. GGAP by age group, 2008
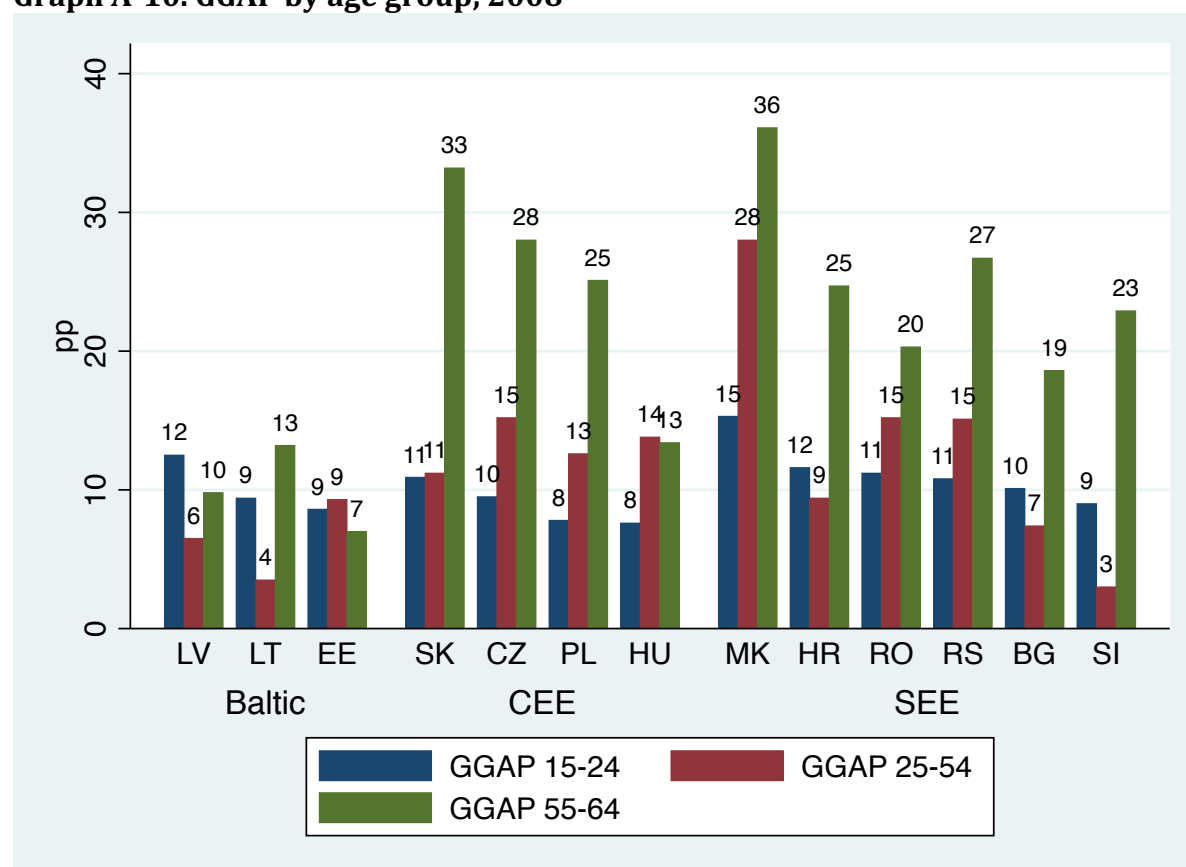
Source: Eurostat.

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Graph A-11. Economic development in Slovenia, 1990-2010
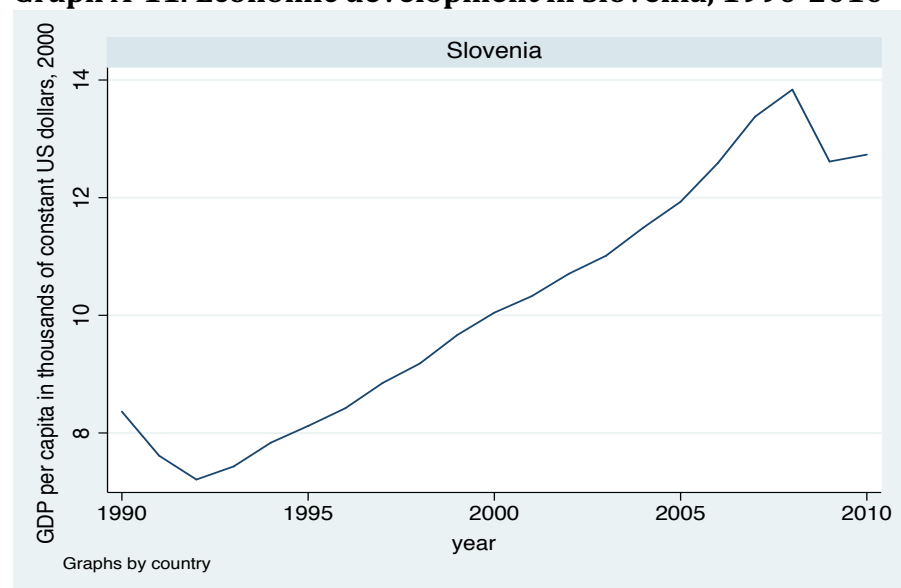
Source: World Development Indicators, The World Bank.

Table A-1. Descriptive statistics, 1990-2010

	Obs.	Mean	SD	Min	1st Q	Median	3rd Q	Max
FLFP 15-64	273	60.4	6.4	46.7	55.8	61.6	64.9	75
GGAP 15-64	273	13.7	5.2	3.7	9.8	13.3	16.2	27.7
GDP pc	263	4.3	2.6	0.6	2.0	4.1	5.7	13.8
GDP pc²	263	25.1	31.3	0.4	4.1	16.5	32.4	191.4

Table A-2. Correlations between variables (with p-values), 1990-2010

	FLFP 15-64	GGAP 15-64	GDP pc	GDP pc²
FLFP 15-64	1.000			
GGAP 15-64	-0.787	1.000		
	0.000			
GDP pc	0.3506	-0.3777	1.000	
	0.000	0.000		
GDP pc²	0.2848	-0.3174	0.9454	1.000
	0.000	0.000	0.000	

* p<0.1; ** p<0.05; *** p<0.01

Table A-3. Economic development and FLFP: econometric estimates

| | FLFP 15-64 | | FLFP 25-54 | |
| | All countries 2000-2010 | | All countries 1990-2010 | |
	(9) PCSE	(10) FE	(11) PCSE	(12) FE
GDP pc	2.105	0.418	2.381	-2.483
	(10.90)***	(0.76)	(10.81)***	(6.07)***
GDP pc^2	-0.087	0.018	-0.101	0.186
	(5.68)***	(0.47)	(5. 85)***	(6.47)***
_cons	52.455	57.433	70.593	84.195
	(110.17)***	(34.21)***	(114.87)***	(74.57)***
R^2	0.30	0.08	0.18	0.14
N	143	143	263	263

- $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-4. Economic development and GGAP: econometric estimates

| | GGAP 15-64 | | GGAP 25-54 | |
| | All countries 2000-2010 | | All countries 1990-2010 | |
	(9) PCSE	(10) FE	(11) PCSE	(12) FE
GDP pc	-1.605	-0.163	-1.875	0.376
	(11.92)***	(0.43)	(11.10)***	(1.23)
GDP pc^2	0.075	-0.001	0.076	-0.070
	(7.70)***	(0.04)	(5.47)***	(2.49)**
_cons	18.527	13.825	18.192	11.814
	(54.53)***	(11.95)***	(50.61)***	(13.95)***
R^2	0.18	0.01	0.16	0.06
N	143	143	263	263

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-5. Logit regression results with real regional dummies: Baltic vs CEE vs SEE

	Q48A	Q48D
1bn.region	-0.712	1.231
	(54.64)***	(32.37)***
2.region	-0.887	1.748
	(78.97)***	(49.89)***
maritalst	0.001	0.050
	(0.06)	(4.41)***
sex	-0.283	0.286
	(6.67)***	(6.03)***
age	0.026	0.000
	(3.20)***	(0.03)
age2	-0.000	-0.000
	(2.56)**	(1.43)
educ	-0.174	0.207
	(10.42)***	(5.84)***
emplst	0.030	-0.038
	(3.90)***	(4.19)***
191bn.country	0.745	-0.400
	(90.84)***	(27.31)***
203.country	0.630	0.031
	(54.33)***	(2.33)**
233.country	-0.203	0.827
	(17.64)***	(35.16)***
348.country	0.557	-0.096
	(40.92)***	(4.58)***
428.country	-0.079	1.661
	(16.54)***	(121.65)***
616.country	1.274	-0.417
	(94.72)***	(16.38)***
642.country	0.020	-0.412
	(2.57)**	(42.21)***
688.country	0.530	-0.404
	(53.54)***	(34.25)***
705.country	0.051	-0.666
	(5.34)***	(60.83)***
807.country	1.061	-0.450
	(69.56)***	(27.06)***
_cons	-0.931	-2.275
	(4.45)***	(8.72)***
N	17,385	17,685

* p<0.1; ** p<0.05; *** p<0.01

Table A-6. Logit regression results with placebo regional dummies[1]

	Q48A	Q48D
1bn.region2	0.531	-0.047
	(85.78)***	(8.61)***
2.region2	-0.530	0.404
	(53.54)***	(34.25)***
maritalst	0.001	0.050
	(0.06)	(4.41)***
sex	-0.283	0.286
	(6.67)***	(6.03)***
age	0.026	0.000
	(3.20)***	(0.03)
age2	-0.000	-0.000
	(2.56)**	(1.43)
educ	-0.174	0.207
	(10.42)***	(5.84)***
emplst	0.030	-0.038
	(3.90)***	(4.19)***
191bn.country	-0.316	0.050
	(27.21)***	(5.36)***
203.country	0.276	-0.083
	(24.37)***	(8.31)***
233.country	0.154	-0.517
	(8.37)***	(29.67)***
348.country	0.202	-0.210
	(28.05)***	(24.08)***
428.country	-0.253	0.363
	(13.94)***	(21.00)***
440.country	0.887	-1.748
	(78.97)***	(49.89)***
616.country	0.388	-0.484
	(34.65)***	(38.28)***
642.country	0.020	-0.412
	(2.57)**	(42.21)***
703.country	-0.886	-0.067
	(53.96)***	(3.39)***
705.country	0.051	-0.666
	(5.34)***	(60.83)***
_cons	-1.288	-0.930
	(6.33)***	(3.83)***
N	17,385	17,685

* *p*<0.1; ** *p*<0.05; *** *p*<0.01

[1] Placebo region 1: Czech Republic, Hungary, Estonia and Serbia; Placebo region 2: Croatia, Latvia, Macedonia, Poland and Slovakia; Placebo region 3: Bulgaria, Lithuania, Romania and Slovenia.

Table A-7. Fertility rate and GGAP (15-64): econometric estimates

	All countries 1990-2010		Without RS & MK 1990-2010		All countries 2000-2010	
	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
Fertility rate	6.224	0.034	1.148	-0.318	6.478	0.359
	(3.68)***	(0.06)	(1.45)	(0.56)	(1.98)**	(0.24)
GDP pc	-0.897	-1.298	1.251	-1.348	-1.366	-0.182
	(4.91)***	(4.99)***	(3.93)***	(5.12)***	(6.47)***	(0.47)
GDP pc^2	0.031	0.058	-0.105	0.061	0.058	-0.002
	(2.60)***	(3.21)***	(4.43)***	(3.33)***	(4.07)***	(0.06)
_cons	7.570	17.594	7.408	17.139	9.039	13.451
	(2.75)***	(14.75)***	(5.41)***	(13.40)***	(1.82)*	(6.68)***
***R*^{2}**	0.20	0. 15	0. 10	0.17	0.20	0.01
N	256	256	221	221	143	143

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

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Table A-8. Descriptive statistics, 1997-2008

	Obs.	Mean	SD	Min	1st Q	Median	3rd Q	Max
D femshare	123	42.17	5.16	33.09	38.28	40.92	47.32	53.01
E. complex	146	0.85	0.49	-0.23	0.55	0.79	1.31	1.65
E. complex²	146	0.96	0.84	0.00	0.30	0.62	1.72	2.73
KIS femshare	105	43.95	8.01	22.67	41.24	46.66	49.8	54.01
KIS emp	123	36.98	5.36	21.22	35.63	38.05	40.77	45.48
KIS pop	123	22.02	4.12	12.42	18.97	22.61	24.74	31.09
PUB femshare	119	65.17	5.24	47.77	62.86	65.98	67.86	75.12
PUB emp	123	23.18	3.17	13.37	21.79	23.72	25.43	28.26
PUB pop	12	13.77	2.31	8.71	11.95	14.21	15.45	18.14
Edtert total	100	15.29	5.58	7.50	11.20	14.05	18.05	35.30
Edtert female	100	17.07	7.40	6.80	10.95	15.50	21.65	39.80
Ed. exp.	121	4.74	0.87	2.65	4.02	4.79	5.43	7.22

Note: Label 'femshare' refers to share of women in that sector, label 'emp' refers to share of that sector in total employment and label 'pop' refers to the share of that sector in the total population.

Graph A-12. Manufacturing employment as share of total working age pop in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
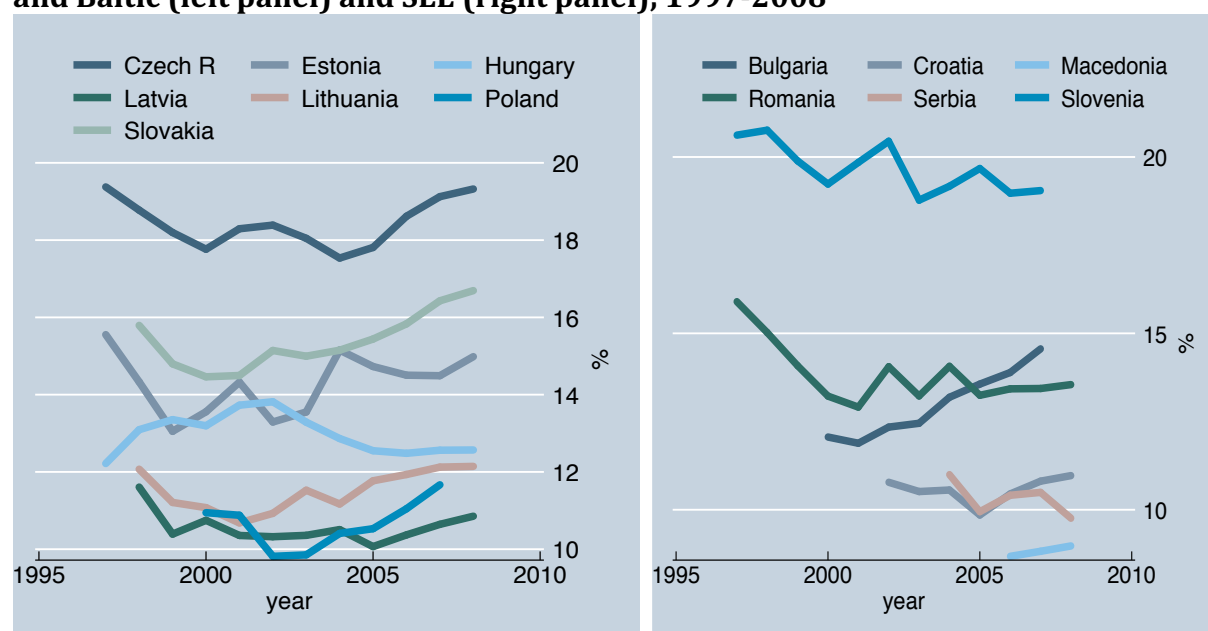
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.
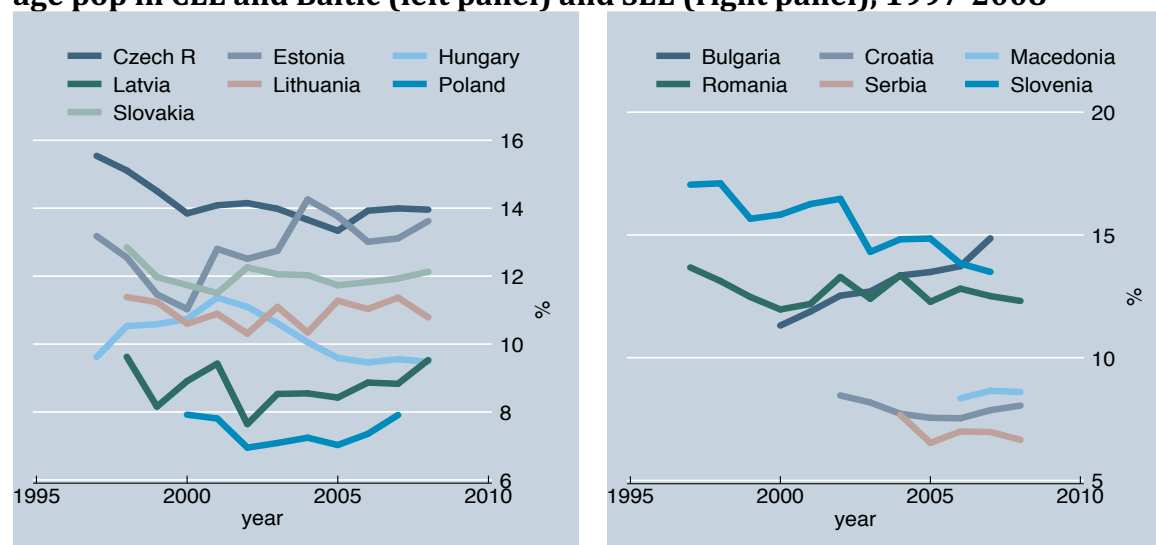
Graph A-13. Female employment in manufacturing as a share of female working age pop in CEE and Baltic (left panel) and SEE (right panel), 1997-2008

Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Table A-9. Economic complexity and share of women in manufacturing: econometric estimates, restricted sample (excl. MK, RS & SI) 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	-8.562	-1.326	-11.628	4.658	-9.087	6.510
	(12.15)***	(1.12)	(2.88)***	(1.89)*	(2.17)**	(2.63)***
Economic complex²			1.625	-4.379	1.504	-3.982
			(0.90)	(2.75)***	(0.80)	(2.57)**
GDP pc					-0.803	-0.615
					(6.57)***	(2.73)***
_cons	50.485	43.973	51.655	42.867	53.261	43.703
	(70.31)***	(40.87)***	(26.56)***	(38.44)***	(24.99)***	(39.01)***
R^2	0.49	0.01	0.50	0.09	0.54	0.16
N	104	104	104	104	104	104

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-10. Economic complexity (with squared term) and FLFP (15-64): econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	12.766	1.041	-0.702	-0.864	-1.074	-1.021
	(7.35)***	(0.44)	(0.22)	(0.30)	(0.33)	(0.36)
Economic complex²	-5.789	1.594	-0.679	0.812	-1.655	1.242
	(6.51)***	(1.05)	(0.40)	(0.47)	(1.01)	(0.71)
KIS pop			0.743	0.331	0.618	0.615
			(9.78)***	(2.11)**	(9.54)***	(2.36)**
GDP pc					0.612	-0.574
					(8.47)***	(1.36)
_cons	54.941	57.837	46.112	53.796	47.120	50.145
	(81.13)***	(53.17)***	(18.17)***	(18.81)***	(19.49)***	(12.80)***
R²	0.16	0.06	0.35	0.08	0.38	0.09
N	146	146	120	120	120	120

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-11. Economic complexity and FLFP (15-64): econometric estimates, restricted sample (excl. MK, RS & SI) 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	-3.063	3.122	-4.220	0.276	-4.887	0.875
	(5.23)***	(2.31)**	(13.65)***	(0.15)	(7.08)***	(0.46)
KIS pop			0.643	0.291	0.584	0.609
			(9.60)***	(1.61)	(10.51)***	(2.19)**
GDP pc					0.268	-0.679
					(1.17)	(1.50)
_cons	63.789	58.339	50.688	54.534	51.362	50.057
	(102.06)***	(48.37)***	(33.02)***	(16.68)***	(39.44)***	(11.35)***
R²	0.07	0.05	0.36	0.05	0.36	0.07
N	120	120	104	104	104	104

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-12. Industrial upgrading and population with tertiary education: econometric estimates, restricted sample (excl. MK & SI) 2000-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PCSE	FE	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	-7.428	1.379	-14.777	-4.237	-11.878	-10.545	-23.583	-15.139
	(12.16)***	(0.70)	(18.62)***	(2.19)**	(2.17)**	(2.56)**	(7.35)***	(4.29)***
Economic complex²					2.284	8.547	4.424	7.929
					(0.90)	(3.23)***	(3.26)***	(3.60)***
GDP pc			2.388	1.687			2.449	1.639
			(12.24)***	(5.62)***			(11.11)***	(5.87)***
_cons	22.204	14.152	17.255	11.044	24.014	16.601	20.634	13.404
	(25.79)***	(7.81)***	(22.22)***	(6.78)***	(9.21)***	(8.88)***	(15.53)***	(8.12)***
R^2	0.25	0.01	0.52	0.30	0.25	0.13	0.54	0.40
N	88	88	88	88	88	88	88	88

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Note: Serbia does not need to be excluded because its educational data are not in the Eurostat database.

Table A-13. Industrial upgrading and educational expenditures, restricted sample (excl. MK & SI) 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	PCSE	FE	PCSE	FE	PCSE	FE	PCSE	FE
Economic complex	-0.595	-0.544	-1.234	0.067	-1.181	-1.968	-1.942	-1.483
	(4.76)***	(1.75)*	(5.50)***	(0.18)	(1.68)*	(3.05)***	(2.55)**	(2.34)**
Economic complex²					0.313	1.059	0.375	1.201
					(0.94)	(2.50)**	(1.02)	(2.96)***
GDP pc			0.217	-0.159			0.219	-0.176
			(3.45)***	(2.86)***			(3.48)***	(3.27)***
_cons	5.235	5.190	4.794	5.384	5.457	5.441	5.055	5.691
	(37.08)***	(18.55)***	(27.68)***	(19.32)***	(16.55)***	(18.72)***	(13.87)***	(19.78)***
R^2	0.08	0.03	0.18	0.10	0.09	0.09	0.19	0.18
N	111	111	111	111	111	111	111	111

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

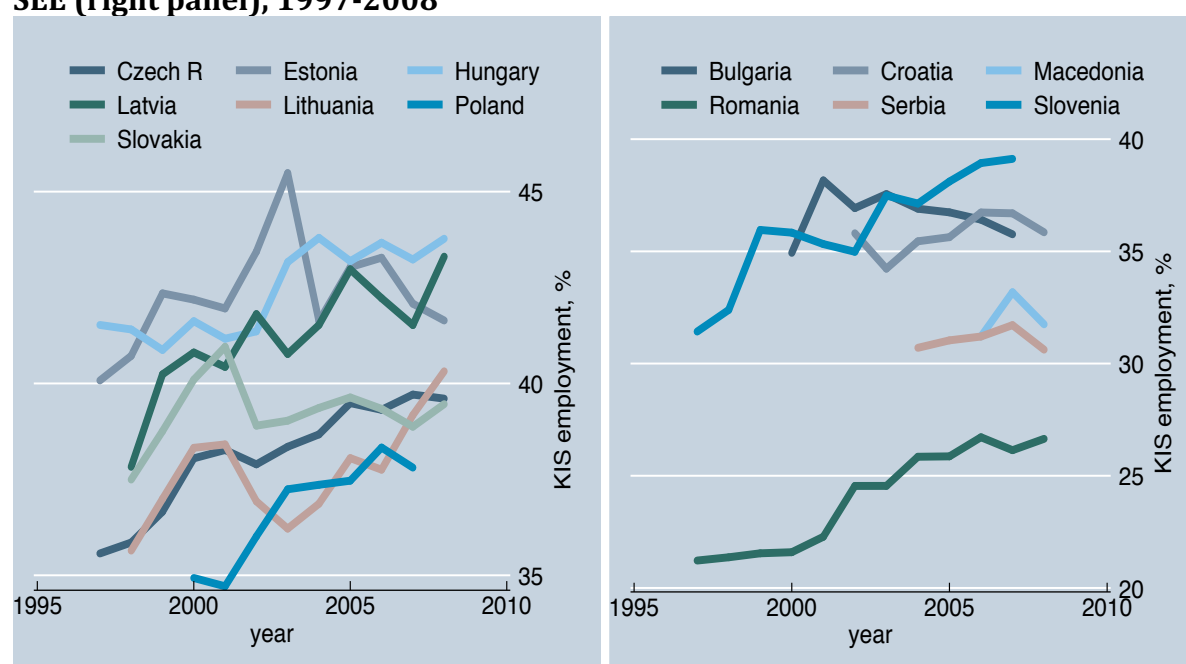*Note:* Serbia does not need to be excluded because its educational data are not in the Eurostat database.

Graph A-14. Share of KIS in total employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008

Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-15. Share of women in KIS in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
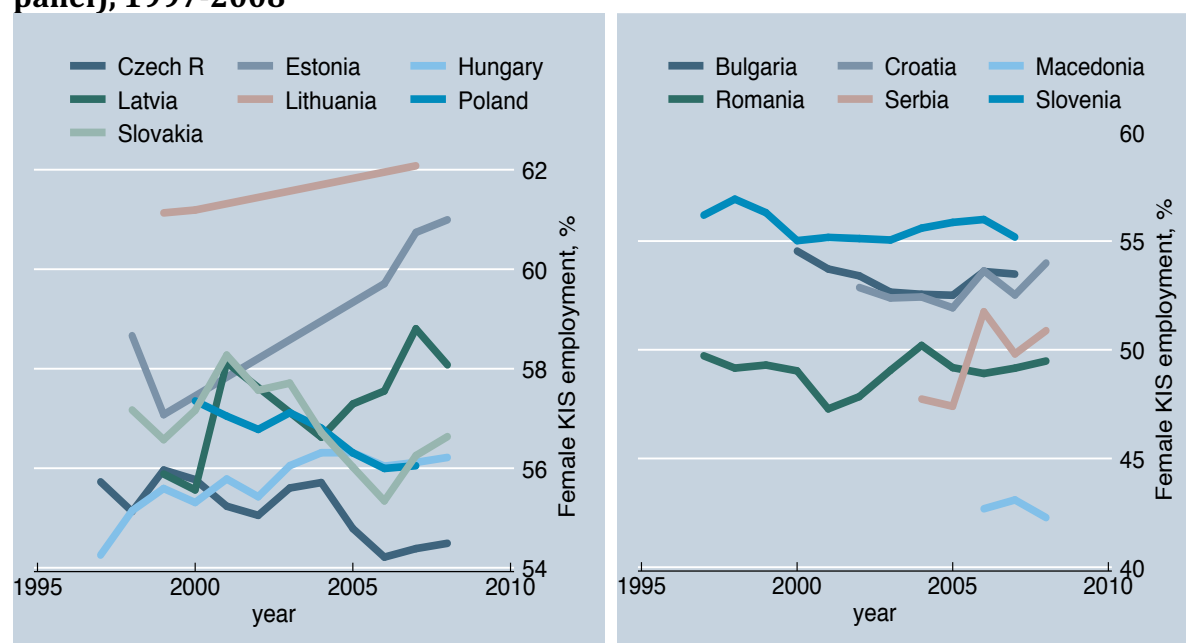
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Table A-14. Ratio of services to industry VA and the share of women in KIS: econometric estimates, all countries 1997-2008

	(1) PCSE	(2) FE	(3) PCSE	(4) FE
Services to industry	6.237 (7.99)***	4.345 (4.05)***	7.044 (8.73)***	3.001 (3.97)***
GDP pc			1.595 (22.27)***	1.368 (9.96)***
_cons	31.398 (19.27)***	35.206 (16.26)***	21.568 (15.70)***	30.872 (19.75)***
R^2	0.13	0.15	0.43	0.60
N	105	105	105	105

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-15. Share of KIS in total working age pop. and the share of women in KIS: econometric estimates, all countries 1997-2008

|	(1) PCSE	(2) FE	(3) PCSE	(4) FE
KIS pop	1.583 (13.64)***	0.979 (10.60)***	1.552 (10.65)***	0.612 (3.19)***
GDP pc			0.080 (0.82)	0.638 (2.17)**
_cons	9.837 (3.95)***	22.848 (11.45)***	10.098 (3.72)***	27.472 (9.51)***
R^2	0.69	0.55	0.70	0.57
N	105	105	105	105

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-16. Share of KIS in total employment and the share of women in KIS: econometric estimates, all countries 1997-2008

|	(1)	(2)	(3)	(4)
	PCSE	FE	PCSE	FE
KIS emp	1.416	1.221	1.351	1.048
	(73.05)***	(28.43)***	(58.45)***	(22.08)***
GDP pc			0.290	0.431
			(6.71)***	(5.79)***
_cons	-7.683	-0.600	-6.836	3.493
	(11.31)***	(0.38)	(10.04)***	(2.30)**
R^2	0.96	0.90	0.97	0.93
N	105	105	105	105

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Graph A-16. Share of public services in total employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
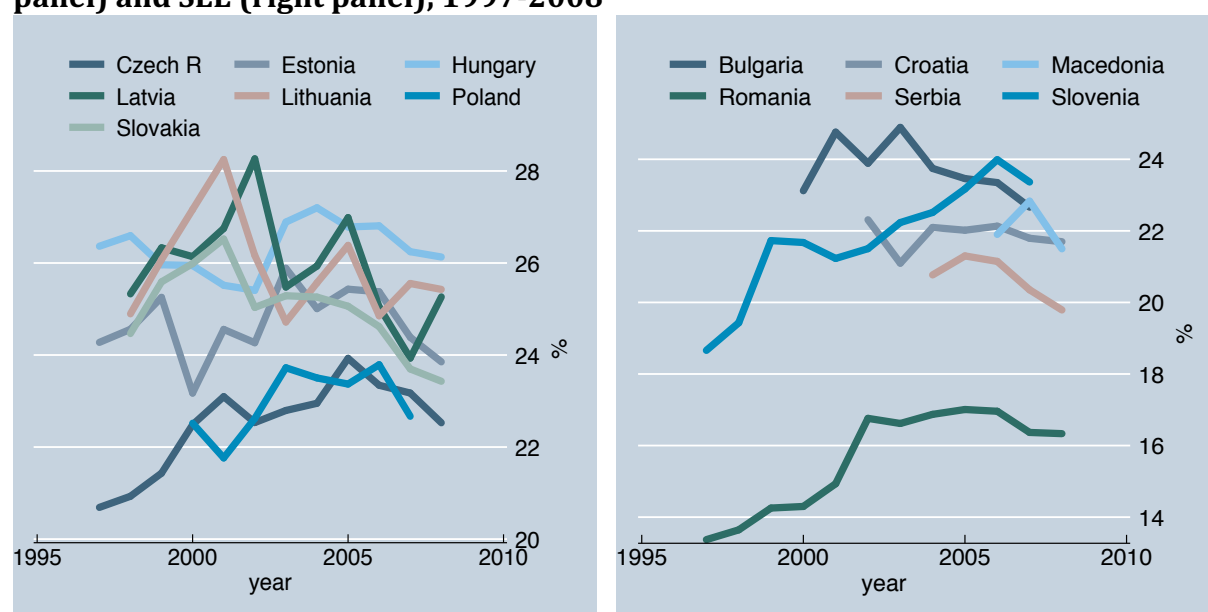
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-17. Share of women in public service employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
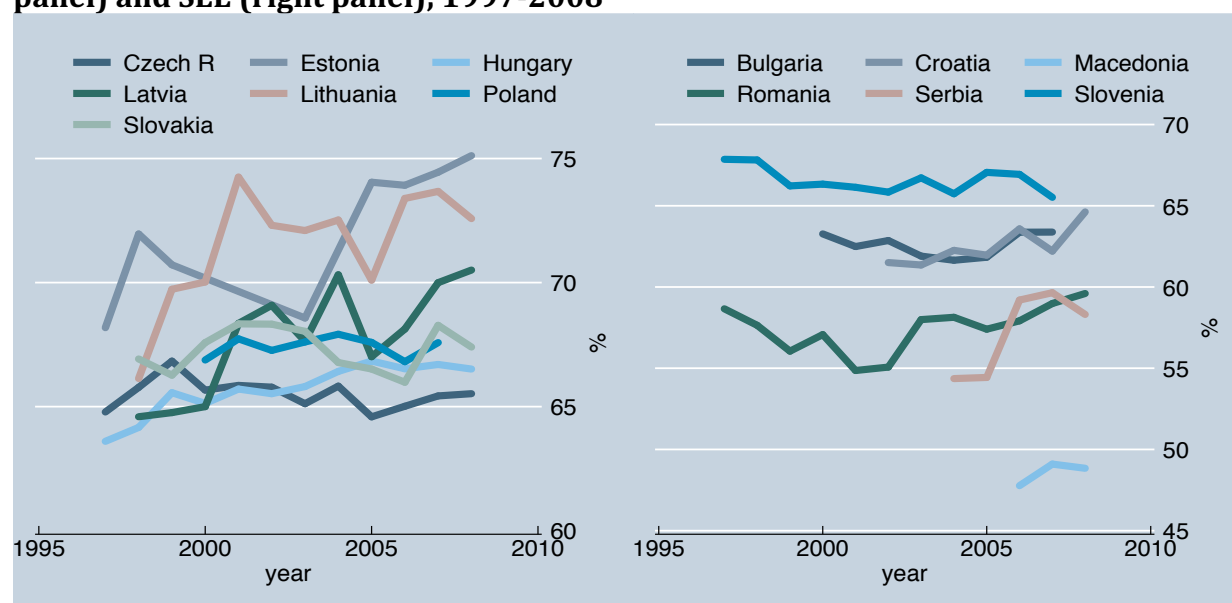
Source: Eurostat.

Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.
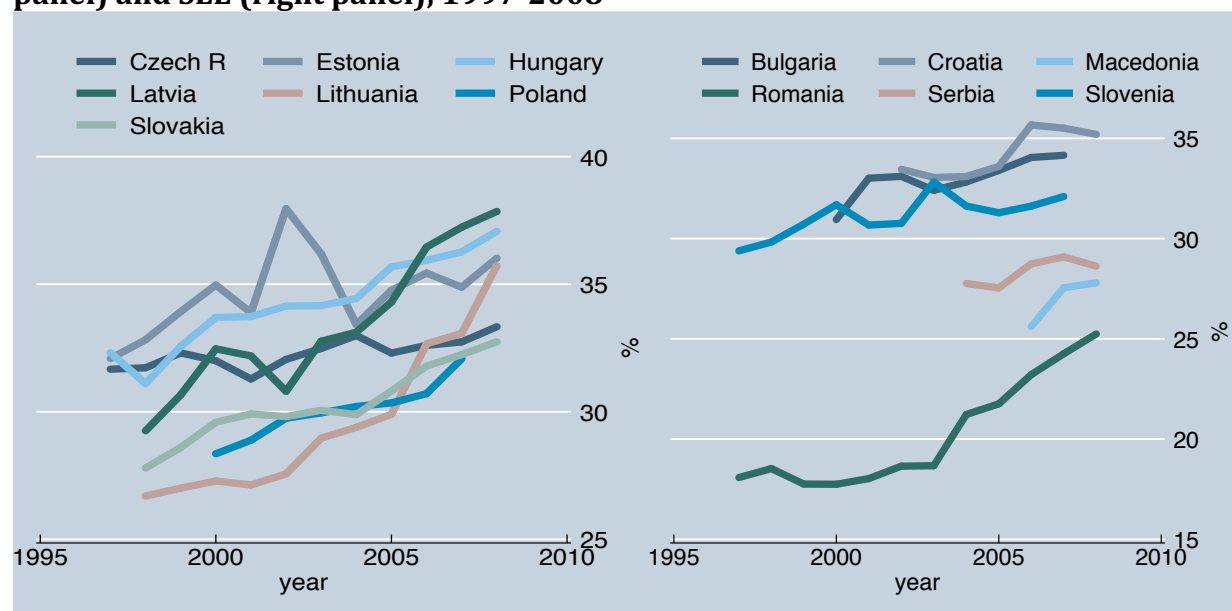
Graph A-18. Share of private services in total employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008

Source: Eurostat.

Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.
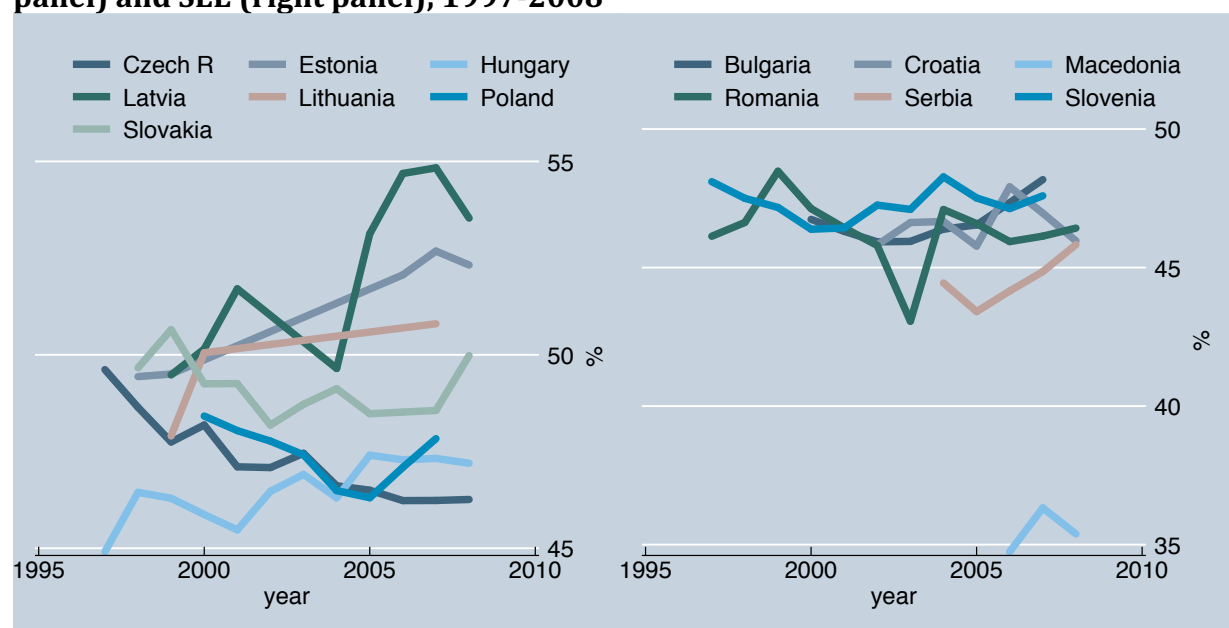
Graph A-19. Share of women in private service employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008

Source: Eurostat.

Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Table A-17. Public sector employment as share of working age population and FLFP (incl. squared term for economic complexity): econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
PUB pop	1.064	0.441	0.961	0.447	0.886	0.646
	(11.34)***	(1.37)	(6.97)***	(1.26)	(5.91)***	(1.68)*
PRIV_KIS pop	0.276	0.278	0.466	0.244	0.265	0.584
	(2.40)**	(1.06)	(2.12)**	(0.85)	(1.24)	(1.51)
Economic complex			-0.186	-0.775	-0.442	-0.991
			(0.06)	(0.27)	(0.13)	(0.34)
Economic complex²			-0.776	0.739	-1.815	1.213
			(0.45)	(0.42)	(1.10)	(0.69)
GDP pc					0.636	-0.564
					(12.73)***	(1.30)
_cons	44.109	52.670	45.029	52.925	45.799	49.935
	(26.72)***	(15.36)***	(16.80)***	(14.18)***	(17.59)***	(11.43)***
R^2	0.35	0.07	0.35	0.08	0.39	0.09
N	123	123	120	120	120	120

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-18. Public sector employment as a share of total employment and FLFP (15-64): econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
PUB emp	0.164	-0.496	0.150	-0.586	0.157	-0.670
	(1.74)*	(2.71)***	(1.62)	(3.26)***	(2.41)**	(3.90)***
PRIV_KIS emp	0.030	-0.063	0.014	-0.310	-0.195	-0.593
	(0.28)	(0.63)	(0.11)	(2.60)**	(1.74)*	(4.31)***
Economic complex			0.100	5.586	-4.781	3.798
			(0.11)	(3.47)***	(3.84)***	(2.37)**
GDP pc					1.313	0.983
					(14.19)***	(3.59)***
_cons	56.308	74.489	57.188	79.229	61.259	86.509
	(15.57)***	(14.39)***	(15.55)***	(15.28)***	(21.66)***	(16.28)***
R^2	0.02	0.07	0.01	0.16	0.20	0.26
N	123	123	120	120	120	120

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-19. Share of women in public sector employment and FLFP (15-64): econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	PCSE	FE	PCSE	FE	PCSE	FE
SPUB femshare	0.053	0.171	0.028	0.265	-0.161	0.270
	(0.79)	(1.12)	(0.33)	(1.25)	(2.43)**	(1.26)
PRIV_KIS femshare	1.097	0.890	1.111	0.924	1.243	0.925
	(9.11)***	(4.95)***	(8.16)***	(4.76)***	(10.89)***	(4.74)***
Economic complex			0.158	-0.901	-2.917	-1.565
			(0.27)	(0.45)	(10.64)***	(0.66)
GDP pc					0.866	0.137
					(12.28)***	(0.53)
_cons	4.919	7.088	5.709	0.332	10.145	-0.113
	(1.58)	(0.67)	(2.03)**	(0.02)	(3.81)***	(0.01)
R^2	0.50	0.27	0.48	0.27	0.57	0.28
N	105	105	102	102	102	102

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Table A-20. Interactive effect of KIS employment and educational attainment on FLFP (15-64): econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)
	PCSE	FE	PCSE	FE
KIS pop	0.107	-1.124	-0.017	-0.837
	(1.24)	(3.04)***	(0.18)	(1.94)*
Edtert total	-0.740	-1.546	-0.733	-1.506
	(7.43)***	(4.18)***	(6.71)***	(4.07)***
KIS pop* Edtert total	0.039	0.073	0.040	0.072
	(10.32)***	(4.42)***	(10.65)***	(4.36)***
GDP pc			0.237	-0.539
			(4.01)***	(1.27)
_cons	56.230	83.811	57.174	80.108
	(26.09)***	(10.90)***	(26.96)***	(9.77)***
R^2	0.52	0.28	0.53	0.30
N	97	97	97	97

* p<0.1; ** p<0.05; *** p<0.01

Table A-21. Interactive effect of KIS employment and educational expenditures on FLFP (15-64): econometric estimates, all countries 1997-2008

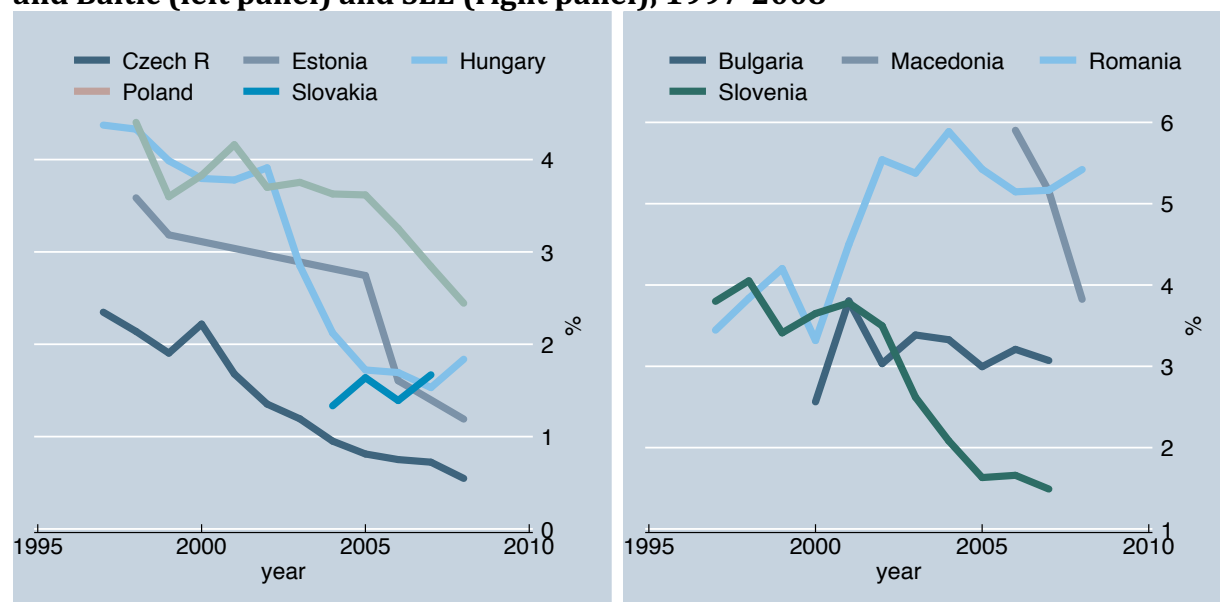|	(1)	(2)	(3)	(4)
	PCSE	FE	PCSE	FE
KIS pop	-1.181	-1.631	-1.234	-1.446
	(3.62)***	(3.22)***	(3.98)***	(2.36)**
Ed. exp.	-9.361	-9.807	-9.532	-9.504
	(5.68)***	(4.11)***	(5.91)***	(3.86)***
KIS pop* Ed. exp.	0.422	0.435	0.430	0.418
	(5.84)***	(4.29)***	(6.12)***	(3.94)***
GDP pc			0.054	-0.209
			(0.94)	(0.54)
_cons	86.662	97.587	87.513	94.827
	(12.16)***	(8.21)***	(12.72)***	(7.31)***
R^2	0.37	0.28	0.37	0.28
N	107	107	107	107

* p<0.1; ** p<0.05; *** p<0.01

Table A-22. Interactive effect of public sector employment and educational attainment on FLFP (15-64): econometric estimates, all countries 1997-2008

	(1)	(2)	(3)	(4)
	PCSE	FE	PCSE	FE
PUB pop	-0.043	-0.953	-0.390	-0.713
	(0.21)	(1.57)	(2.07)**	(1.06)
Edtert total	-1.315	-1.582	-1.409	-1.528
	(6.69)***	(3.59)***	(7.57)***	(3.43)***
PUB pop* Edtert total	0.097	0.106	0.106	0.104
	(7.50)***	(3.70)***	(9.04)***	(3.61)***
GDP pc			0.345	-0.266
			(10.92)***	(0.85)
_cons	60.328	75.068	62.739	72.784
	(19.85)***	(8.87)***	(22.71)***	(8.18)***
R^2	0.56	0.28	0.58	0.29
N	97	97	97	97

* $p<0.1$; ** $p<0.05$; *** $p<0.01$
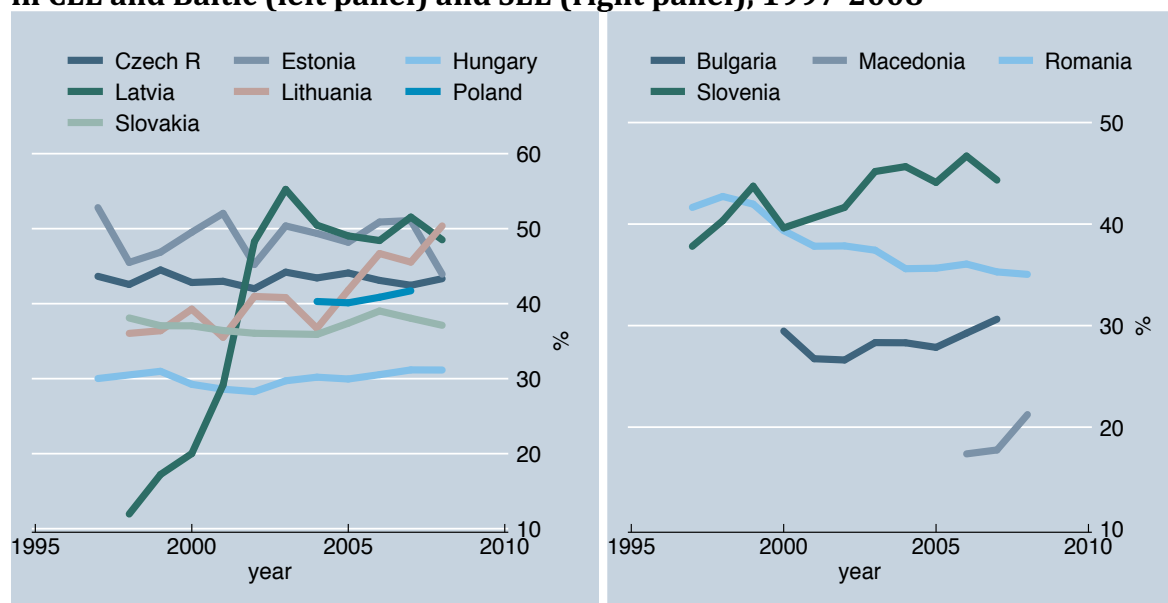
Appendix A7

Graph A-20. Share of leather tanning in total manufacturing employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008

Source: Eurostat.
Notes: 1) All sectors are classified under NACE Rev. 1.1 two-digit level. 2) Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-21. Share of women in leather tanning manufacturing employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
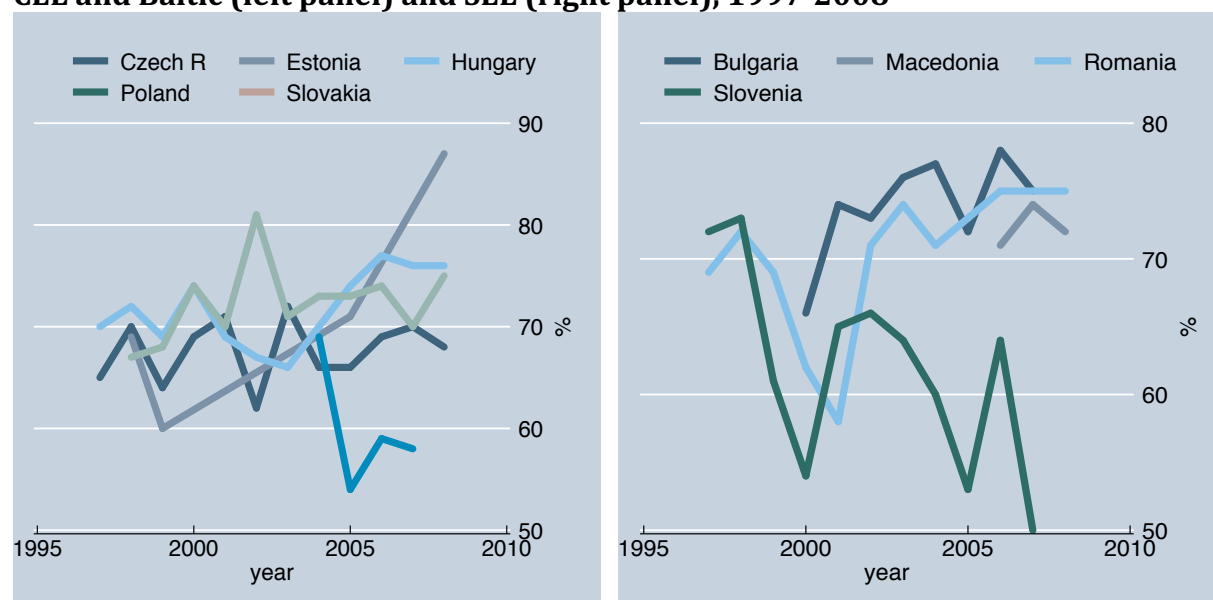
Source: Eurostat.
Notes: 1) All sectors are classified under NACE Rev. 1.1 two-digit level. 2) Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-22. Share of male dominant sectors in total manufacturing employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008

Source: Eurostat.

Note: 1) All sectors are classified under NACE Rev. 1.1 two-digit level. 2) Male dominant sectors include: fabricated metal products; furniture; machinery and equipment; non-metallic mineral products; transport equipment; wood and of products of wood and cork. 3) Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-23. Share of women in male dominant manufacturing employment in CEE and Baltic (left panel) and SEE (right panel), 1997-2008
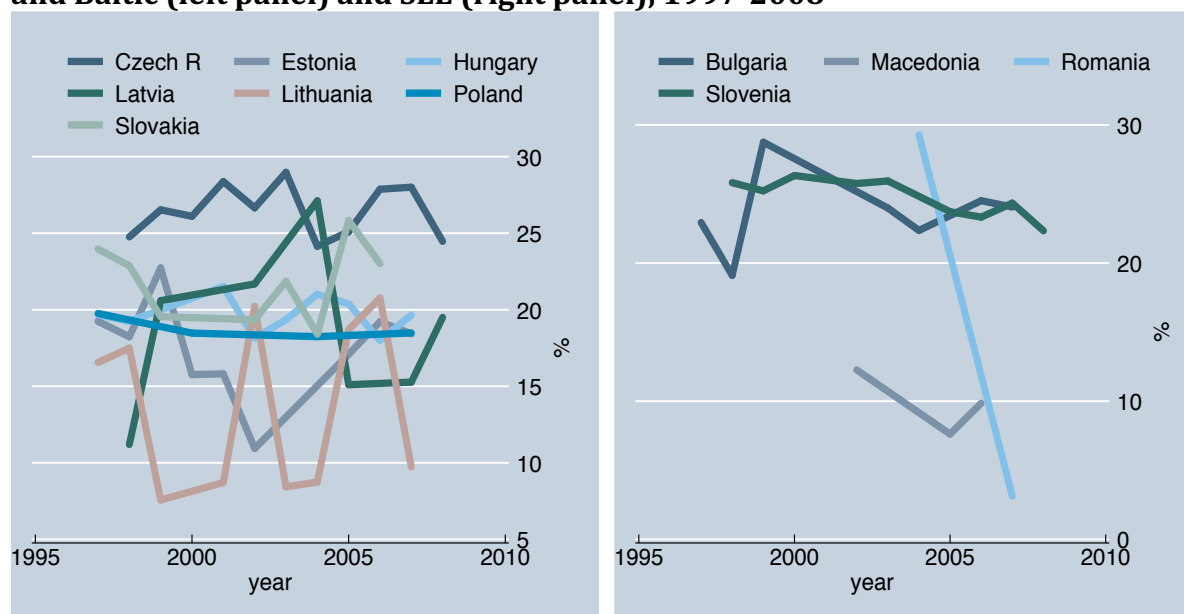
Source: Eurostat.

Note: 1) All sectors are classified under NACE Rev. 1.1 two-digit level. 2) Male dominant sectors include: fabricated metal products; furniture; machinery and equipment; non-metallic mineral products; transport equipment; wood and of products of wood and cork. 3) Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.
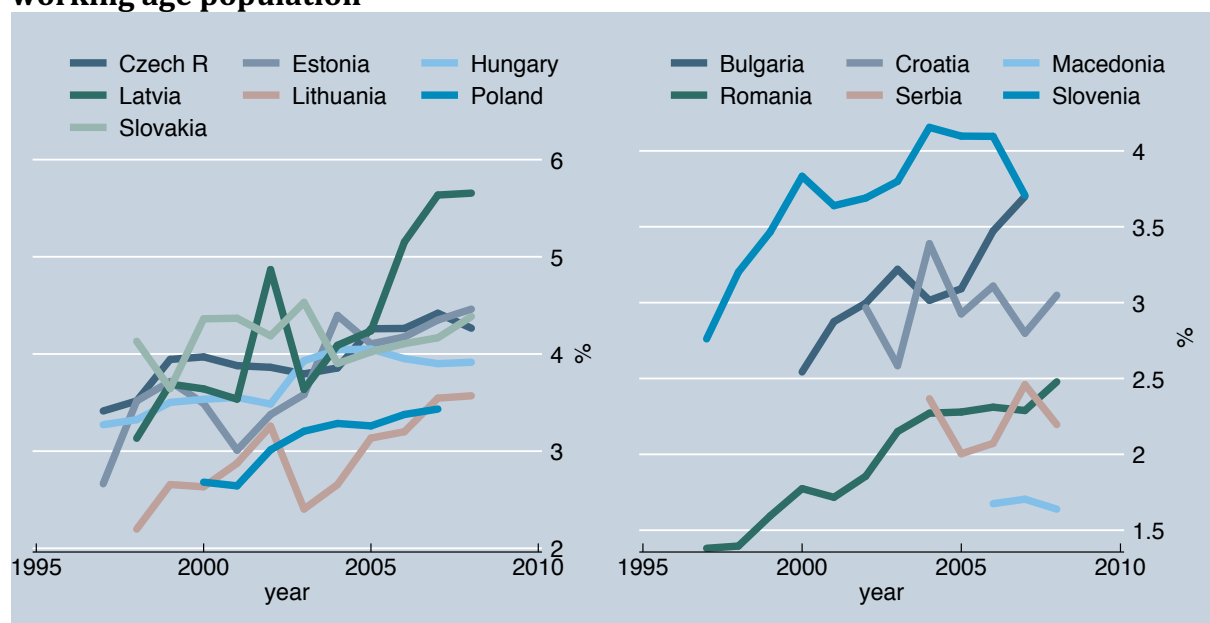
Graph A-24. Public administration employment as a share of total working age population
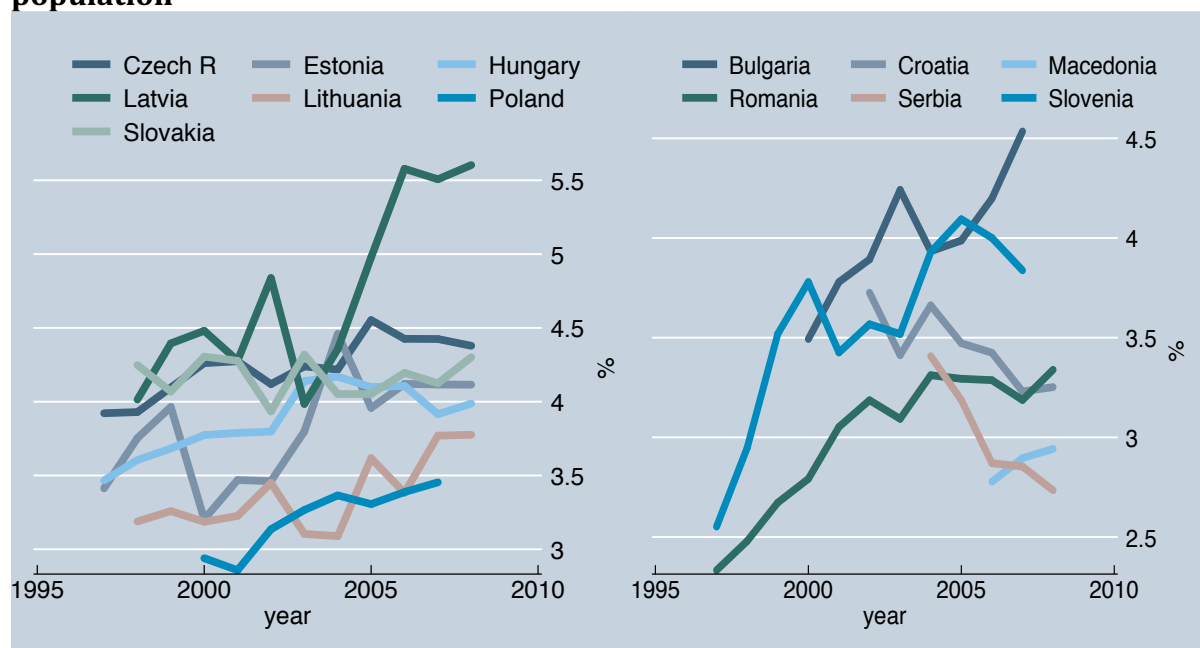
Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.
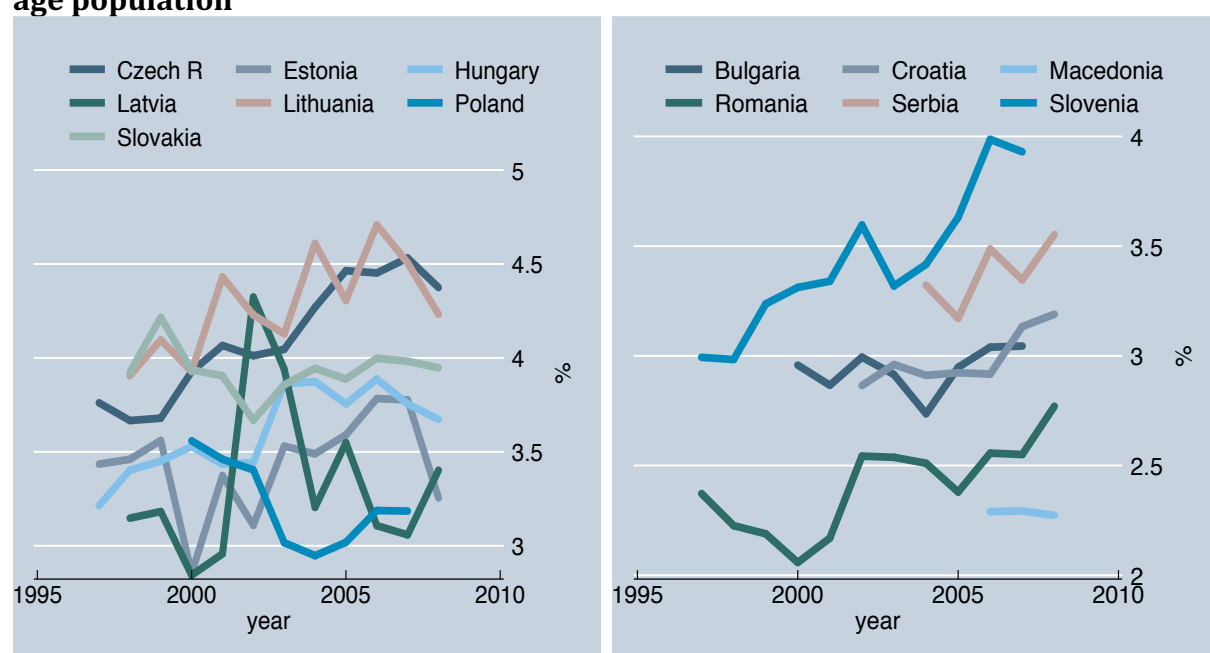
Graph A-25. Female employment in public administration as a share of female working age population

Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.
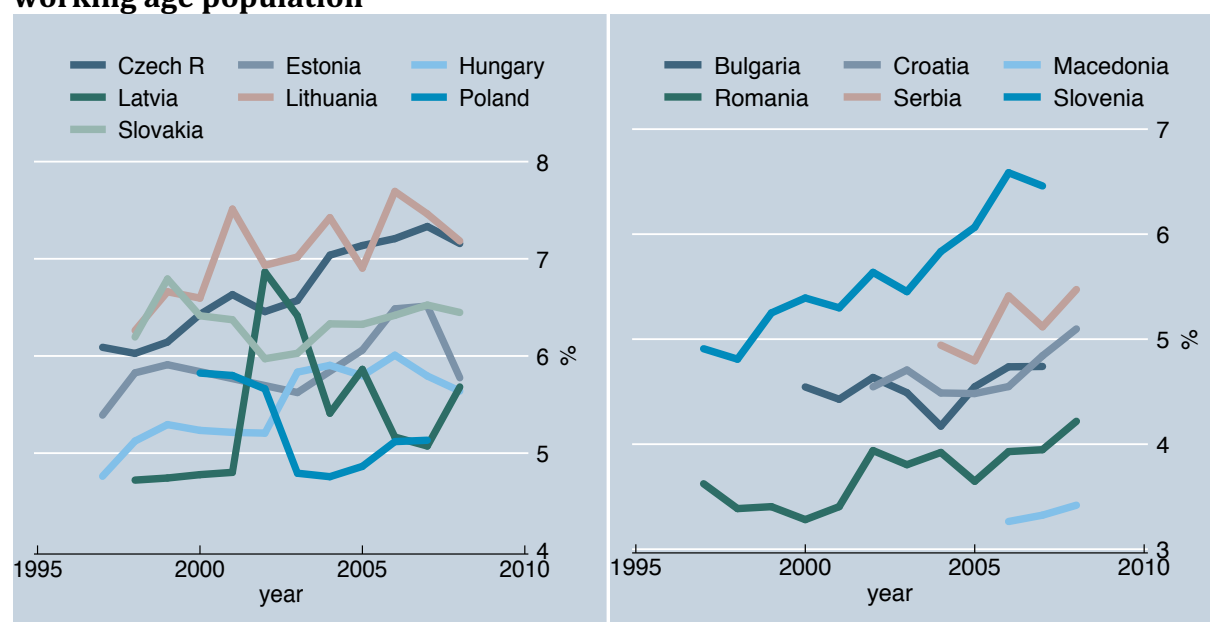
Graph A-26. Employment in health and social services as a share of total working age population

Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.

Graph A-27. Female employment in health and social services as a share of female working age population

Source: Eurostat.
Note: Trends for SEE are shown in a separate panel of due to lack of analytical clarity when trends for all 13 countries are shown on a single graph. The range of values shown on the Y-axis is purposefully not the same on the two graphs. Equalisation of values on the Y-axis would have made it difficult to read the data off the graphs.