

NINO KOKASHVILI

Public sector evolution
under conditions
of political business cycle –
theory and empirical evidence



DISSERTATIONES RERUM OECONOMICARUM
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UNIVERSITY OF TARTU
Press

School of Economics and Business Administration, University of Tartu, Estonia

This dissertation is accepted for the defence of the degree of Doctor Philosophiae (in Economics) on April 13, 2023 by the Council of the School of Economics and Business Administration, University of Tartu.

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The public defence of the dissertation is on June 21, 2023 at 11:00am, Narva mnt 18–1018, University of Tartu.

The publication of this dissertation is granted by the Doctoral School of Economics and Innovation of University of Tartu created under the auspices of European Social Fund and by University of Tartu School of Economics and Business Administration.

ISSN 1406-1309 (print)
ISBN 978-9916-27-190-2 (print)

ISSN 2806-254X (pdf)
ISBN 978-9916-27-191-9 (pdf)

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University of Tartu Press
www.tyk.ee

TABLE OF CONTENTS

LIST OF FIGURES	7
LIST OF TABLES	10
AUTHOR'S PUBLICATIONS AND CONFERENCE PRESENTATIONS	11
LIST OF ABBREVIATIONS	13
1. INTRODUCTION	15
1.1 Motivation for research	15
1.2 Aim of the thesis, main research question, sub-questions and resulting tasks of analysis	17
1.3 The sequence of analyses and organisation of the thesis	19
1.4 Delineations	22
1.5 Definition of key concepts and terms	24
2. THEORETICAL CONSIDERATIONS	28
2.1 The aim of the chapter and connection to other parts of the thesis	28
2.2 The political and economic coordination	28
2.3 The theory of PBC	33
2.4 The political economy of public sector reforms	35
2.4.1 Political economy incentives of public sector reforms	35
2.4.2 The political economy obstacles of public sector reforms	38
2.5 The public and policy	40
2.5.1 Public opinion and the policy process	40
2.5.2 Voters' reactions and utilities	43
2.5.3 Feedback theories	44
2.5.4 Two-party systems	45
3. THE MODEL OF PUBLIC SECTOR EVOLUTION AS A REACTION TO VOTER OUTCOMES	46
3.1 Aim of the chapter and connection to the other chapters	46
3.2 The modelling approach and idea	46
3.3 The model's time structure	53
3.4 Simplified closed economy model	55
3.5 Introducing time periods	61
3.6 The size of initial public production and the lower and upper boundaries	66
3.7 Introducing investment in the model	69
3.8 Introducing money market in the model	75
3.9 Introducing taxation	79
3.10 Introducing the budget concept and the public debt in the model	82
3.11 Introducing the coalition concept in the model	86
3.12 Two-country model	90
3.13 Summary of the findings of the theoretical model	96

4. THE RATIO BETWEEN PRIVATE AND PUBLIC PRODUCTION AND POLITICAL CYCLES IN EUROPEAN COUNTRIES	100
4.1 The purpose of the chapter	100
4.2 The model and the data	101
4.3 Results	107
4.4 Summary of the chapter	110
5. POLITICAL BUSINESS CYCLE IN THE UK: A CASE STUDY	113
5.1 The aim of the chapter and connection to other parts of the thesis	113
5.2 The choice of the UK	113
5.3 Qualitative assessment of public sector reforms in the UK from 1945–2020	116
5.4 Key findings of the qualitative assessment of public sector reforms in UK (1945–2020)	137
5.5 Quantitative assessment: The effect of government ideology on the size of the public sector in the UK	141
6. DISCUSSION AND CONCLUSION	148
6.1 Recapitulation of purpose and findings	148
6.2 Limitations	154
6.3 Future research recommendations	157
6.4 Conclusions	159
7. REFERENCES	161
Annex 1: Descriptive Statistics	173
Annex 2: Robustness checks	175
Annex 3: Qualitative assessment of reforms—Case of the UK	177
Annex 4: Empirical overview of manifestos of the Labour and Conservative parties from 1940–2016	180
Annex 5: Quantitative analyses—UK case study	182
SUMMARY IN ESTONIAN	184
CURRICULUM VITAE	188
ELULOOKIRJELDUS	189

LIST OF FIGURES

Figure 1: Interdependence between economic policies, political processes, economic outcomes and voters	16
Figure 2: Definition of political ideology in this thesis	27
Figure 3: Interdependence between political and economic systems	31
Figure 4: Model of political and administrative coordination of a jurisdiction	32
Figure 5: Mapping of the models of PBC theory	33
Figure 6: Channels of policy influence: Partisan and opportunistic	34
Figure 7: Public influence on policy change	41
Figure 8: Stages of policy process	42
Figure 9: Scheme for the time structure of policy reaction to vote results .	54
Figure 10: Switches of government	56
Figure 11: Development of the private production/public production ratio (w) under political parties A and B	59
Figure 12: Development of the dAST under political parties A and B	60
Figure 13: Development of the private production/public production ratio (w) under political parties A and B, scenario 1	62
Figure 14: Development of the private production/public production ratio (w) under political parties A and B, scenario 2	63
Figure 15: Development of the private production/public production ratio (w) under political parties A and B, scenario 3	63
Figure 16: Possible scenarios for private/public production ratio development under fixed election period	64
Figure 17: Development of the private production/public production ratio (w) under political parties A and B, scenario 3, case 1	65
Figure 18: Development of the private production/public production ratio (w) under political parties A and B, scenario 3, case 2	65
Figure 19: Scenarios based on the size of initial public production	66
Figure 20: Total public production when AST0 is on different levels	67
Figure 21: Development of ratio (w) under different upper/lower boundaries	68
Figure 22: Government's reaction to tighter upper and lower boundaries ...	69
Figure 23: Government's reaction to wider upper and lower boundaries	69
Figure 24: Impact of an increase in investment J on ratio (w)	72
Figure 25: Impact of an increase in interest rate i on ratio (w)	72
Figure 26: Potential government actions in response to changes in investment and corresponding resulting scenarios	73
Figure 27: Investment dependency on interest rate and connection to money market	75
Figure 28: Impact of an increase in volume of money M on ratio (w)	78
Figure 29: Connection between the private/public production ratio (w), investment (L and J), interest rate (i) and volume of money (M)	78

Figure 30: Impact of increase in tax rate (t) on ratio (w)	82
Figure 31: Impact of increase public debt on ratio (w) – tax rate being constant	86
Figure 32: Development of the private production/public production ratio (w) under a coalition government	87
Figure 33: Development of the private production/public production ratio (w) under coalition government, case 1	88
Figure 34: Development of the private production/public production ratio (w) under coalition government, case 2	89
Figure 35: Development of the private production/public production ratio (w) under coalition government, choice of party C	90
Figure 36: Impact of imports and exports on ratio (w)	92
Figure 37: Presence of political ideology in a two-country example	93
Figure 38: Exports and imports under left-wing parties in power in both countries	94
Figure 39: Exports and imports under left-wing party in power in country I and right-wing party in power in country II	94
Figure 40: Exports and imports under right-wing party in power in country I and left-wing party in power in country II	95
Figure 41: Exports and imports under right-wing parties in power in both countries.	95
Figure 42: Post-war taxation policies: UK, USA and France	119
Figure 43: Growth rate of per capita GDP in select developed countries	122
Figure 44: Total government spending and total public debt in the UK	124
Figure 45: Differences between the ideology and policies of the Labour and Conservative governments from 1965–1979; Connection to the theoretical model	124
Figure 46: Development of the private production/public production ratio (w) (from the theoretical model) under Margaret Thatcher’s government	125
Figure 47: Reduction in government spending (government spending [£ bn])	127
Figure 48: Unemployment rate (% of total labour force)	128
Figure 49: Reducing inflation	129
Figure 50: Taxes on income, profits and capital gains (% of revenue)	129
Figure 51: Tax rates (%) under Thatcher	130
Figure 52: Applying the theoretical model to the New Labour governance period	131
Figure 53: 2010 general election results	133
Figure 54: Government debt in the UK as % of GDP	134
Figure 55: Government deficit in the UK as % GDP	135
Figure 56: Unemployment rate, GDP growth and tax rate for 2010–2019 ...	135
Figure 57: Political cycle in the UK: Power shifts between the Conservative and Labour parties (1945–2020)	137

Figure 58: The ratio between private and public production under the Labour and Conservative governments in power in the UK between 1946 and 2020	138
Figure 59: Applying the theoretical model on public sector reformation and political power shifts in UK for 1945–2020	140
Figure 60: Robustness checks, excluding one country at a time	176
Figure 61: Robustness checks, excluding one year at a time	176
Figure 62: Administration system of Great Britain	177
Figure 63: Stages of passing the bill	179
Figure 64: Party preferences over free-market economy	180
Figure 65: Party preferences over controlled economy	180
Figure 66: Party preferences over nationalisation	180
Figure 67: Party preferences over welfare state expansion	181
Figure 68: Party preferences over welfare state limitations	181
Figure 69: Increasing trends of economic variables and corresponding differencing operations	182

LIST OF TABLES

Table 1: Organization of thesis	20
Table 2: Triggers, obstacles and incentives of public sector reforms	40
Table 3: Summary of the findings of the theoretical chapter	98
Table 4: Measurement of political ideology	103
Table 5: Electoral systems	106
Table 6: Executive-legislative relationship	106
Table 7: Model results (without political explanatory variables)	108
Table 8: Model results (with political explanatory variables)	109
Table 9: British main privatizations from 1979–1992	127
Table 10: Estimation results, the ratio between private and public production as a dependent variable	147
Table 11: Countries in the sample	173
Table 12: Summary statistics of model variables	174
Table 13: Correlation table	174
Table 14: Estimation results with left wing ideology as a main explanatory variable	175
Table 15: Changes of political parties in government of the UK (1945– 2020)	177
Table 16: Ministerial departments in the UK and their core functions	178
Table 17: OLS estimation results	183

AUTHOR'S PUBLICATIONS AND CONFERENCE PRESENTATIONS

Publications related to the thesis topic

1. **Kokashvili, N.** and Shin, J., 2020. How political ideology of government affects health system efficiency. Evidence from parliamentary democracies. *International Journal of Public Policy*. *International Journal of Public Policy*, 15(5–6), pp.380–410.
2. **Kokashvili, N.** and Barbakadze, I., 2020. Does a polarized political environment hamper foreign investors? Evidence from parliamentary democracies. *Scientific Annals of Economics and Business*, 67(1), pp. 45–73.

Publications on other topics

1. **Kokashvili, N.** and Shin, Y., 2019. Examining the most important determinants of health-related quality of life (HRQoL). The Machine Learning Approach. *International Journal of Sciences: Basic and Applied Research*, 47 (1), 1–25.
2. Karo, E., Müür, J., Kirs, M., Juuse, E., Ukrainski, K., Shin, Y., **Kokashvili, N.**, Tänav, T., Masso, J. and Terk, E., 2018. Eesti ettevõtete osalemine rahvusvahelistes väärtusahelates ja poliitikameetmed kõrgemat lisandväärtust andvate tootmisprotsesside toetamiseks.

Working papers

1. Alfieri, L. and **Kokashvili, N.**, 2020. Financial safety nets in East Asia and Europe: A political economy assessment. *University of Tartu School of Economics & Business Administration Working Paper No. 121*
2. **Kokashvili, N.**, Barbakadze, I. and Kapanadze, K., 2017. How participating in the shadow economy affects the growth of Latvian firms. *University of Tartu-School of Economics & Business Administration Working Paper No. 101*

Conference presentations

1. **Kokashvili, N.** (2019) Governance reforms leading to public sector evolution under condition of PBC—theory and empirical evidence. 14th Bigsem Doctoral Workshop on Economic Theory, Bielefeld Graduate School of Economics and Management (BiGSEM), Bielefeld University, Bielefeld, Germany.
2. **Kokashvili, N.** (2019) Does polarized political environment hamper foreign investors? The evidence from parliamentary democracies. MIRDEC-14th, International Academic Conference on Contemporary Trends and Multi-disciplinary Issues in Social Sciences, Global Meeting of Social Science Community, Istanbul, Turkey.

3. **Kokashvili, N.** (2019) Financial safety nets in East Asia, political economy assessment. YSI Asia Convening, Hanoi, Vietnam
4. **Kokashvili, N.** (2018) Does polarized political environment hamper foreign investors? The evidence from parliamentary democracies. The Political Economy EIP 2019 Conference, Pula, Croatia.
5. **Kokashvili, N.** (2018) Theoretical model of governance reforms leading to public sector evolution under PBC. 2nd Tongji-UT Economics Seminar: 10 December, Tongji University, Shanghai, China.
6. **Kokashvili, N.** (2018) How participating in the shadow economy affects the growth of Latvian firms. 10th Summer Academy. Firm Behaviour in Central and Eastern Europe. IOS Regensburg, Tutzing, Germany.
7. **Kokashvili, N.** (2018) How participating in the shadow economy affects the growth of Latvian firms. Social Policy in the Baltic States through the Lens of Data, Tartu, Estonia.
8. **Kokashvili, N.** (2018). Theoretical model of governance reforms leading to public sector evolution under PBC. Public Economics Guest Seminar, University of Konstanz, Konstanz, Germany, December.
9. **Kokashvili, N.** (2017) Governance reforms leading to public sector evolution under condition of PBC—theory and empirical evidence. PhD Summer School in Economics, Management, Governments and Politics, Political Science, Law and Public Administration, Poster Session, 26–28 June, Saka Manor, Estonia. 9.
10. **Kokashvili, N.** (2017) Governance reforms leading to public sector evolution under condition of PBC—theory and empirical evidence. Estonian Economic Association Conference, PhD poster session “Meet the practitioner, test your research idea”, 26 January, Tallinn, Estonia.
11. **Kokashvili, N.** (2017) How participating in the shadow economy affects the growth of Latvian firms. 5th International Conference, Entrepreneurship, Innovation and Regional Development EIRD 2017, Smart Growth of the Local Community in the Global World, 29–30 June 2017, Ventspils, Latvia
12. **Kokashvili, N.** (2016) The connection between fiscal policy and government ideological composition—evidence from OECD countries. Students’ Scientific Organization Conference, Vilnius University Faculty of Economics, 1 December 2016.

LIST OF ABBREVIATIONS

EU – EU
UK – UK
OECD – Organization for Economic Co-operation and Development
PBC – Political business cycle
PPBC – Partisan political business cycle
OPBC – Opportunistic political business cycle
Thou. – Thousands (of euros, employees, etc.)
NPM – New public management
CG – Central government
LG – Local government
IS – investment savings
YA – volume of public production when party A is in power
YB – volume of public production when party B is in power
 W_A – Upper boundary of the ratio between private and public production
 W_B – Lower boundary of the ratio between private and public production
 y, y_1, y_2 – total production output
 dy – change in total production output
 c, c_1, c_2 – consumption coefficient of private production (marginal propensity to consume)
 k, k_1, k_2 – investment coefficient of private production
 AST, AST_1, AST_2 – total public production output
 $dAST, dAST_1, dAST_2$ – change in total public production output
 y_0 – initial (minimum) private production
 AST_0 – initial (minimum) public production
 w – the ratio between private and public production
 J – Investment demand, private
 dJ – change in investment demand, private
 L – autonomous private investment
 dL – change in autonomous private investment
 i – rate of interest
 di – change in rate of interest
 θ – parameter to explain the sensitivity of investment to the change in the rate of interest
 M_1 – transaction demand for money
 M_2 – speculative demand for money
 p – price level
 M – total demand for money
 dM – change in total demand for money
 β – parameter showing change in demand for real money balances as level of income changes
 h – parameter showing change in demand for real money balances as interest rate changes

T – volume of tax revenue
 dT – change in volume of tax revenue
 t – tax rate
 dt – change in tax rate
 Tr – volume of transfers
 dTr – change in volume of transfers
 PD – volume of public debt (national debt)
 dPD – change in volume of public debt (national debt)
 $Export_1, Export_2$ – volume of exports
 $dExport_1, dExport_2$ – change in volume of exports
 $Import_1, Import_2$ – volume of imports
 $dImport_1, dImport_2$ – change in volume of imports
 FE – Fixed effects
 RE – Random effects
 $FE-IV$ – Panel data with instrumental variable technique

1. INTRODUCTION

1.1 Motivation for research

The role of the state in the political and socio-economic development of society has continuously represented a fundamental challenge (Martinussen, 2015; Robinson and White, 1998). Modern states have resulted from social and political evolution of kinship, religion, private property rights, technological discoveries and economic growth (Pierson, 2012). Through every stage of civilisation, economists and philosophers have investigated governance schemes, the relationship between the state and individuals, the organisation of decision-making and justice systems and the power delegation and allocation of economic activities (Cartledge, 2002; Boner, 2018; Sinclair, 2013; Price, 1997).

The role of the government and the public sector has evolved throughout human history. Classical European economics of the eighteenth century (which contradicted mercantilism) supported the small role of government and a minimum public sector (Eltis, 2000)¹. In the nineteenth century, the role of the state was redefined, and the public sector expanded significantly². The development of Keynesian economics (Keynes et al., 1971), accompanied by technological developments after World War II, provided additional support for increased state activities. Supporting public sector reforms and improving their effectiveness not only reflects the economic and technical capacity of the state but also shows the political upholding and willingness (Bukenya and Yanguas, 2013). Political systems have experienced many radical reformations and a lack of political engagement has often been indicated as a main justification for governance reform.

Public sector reformation has become a more prominent issue, largely because reforms are more political than they were historically (Pollitt and Bouckaert, 2017). Rapid advances in technology and science, as well as global economic disturbances, have caused governments to become more business-like and accountable for the policies they deliver. The field of public administration, which has provided various approaches to analyse public sector reforms, emphasises the politico-economic incentives that distinguish the state sector from the private sector³. The new public management (NPM) approach was intro-

¹ Adam Smith developed the theory of the invisible hand, which explained the benefits of capitalism and the free market economy (Joyce, 2001; Smith, 2006). David Ricardo conceptualised the theory of comparative advantage (Ruffin, 2002). Development of economics in these new directions impacted the policy process; as a result, public offices were privatised, trade policies were liberalised, credit markets increased, and fewer price controls were applied (Newbert, 2003).

² Karl Marx developed the theory of social distribution of resources, thereby advocating socialism and communism by explaining the disadvantages of capitalist states (Fine and Saad-Filho, 2017). As the concept and definition of the state have evolved, the functions of the state have changed accordingly.

³ The most significant approaches include Niskanen's budget maximization model and Dunleavy's bureau-shaping model, which underpinned the concepts of public spending and privatisation (Niskanen, 1998; Dunleavy, 2014).

duced in the public sector of many countries by the Organization for Economic Co-operation and Development (OECD) to integrate private sector management principles into public sector practices (Barzelay, 2001). Such development in administration demands the reinvention and reformation of the government (Osborne and McLaughlin, 2005). In the early 2000s, political awareness increased amongst citizens, leading to increased demands for improved transparency in policymaking and public sector reforms (Pollitt and Bouckaert, 2017).

Policy formation, implementation and delivery, as well as their interconnection with politics, have been evidently pointed out by many economists. The economic literature concerning the rent-seeking and corruption was developed since the second half of the twentieth century (Aidt, 2016). Public finance, a separate discipline emerged after Musgrave published *The Theory of Public Finance* in 1959 (Musgrave, 1959). Public choice theory was first introduced by Duncan Black in *The Theory of Committees and Elections* (Black, 1958). Black's theory was influenced by the works of Arrow (*Social Choice and Individual Values*, 1951) (Arrow, 2012), Downs (*An Economic Theory of Democracy*, 1957). Buchanan and Tullock explained the political organisation of free society in *The Calculus of Consent* (Buchanan and Tullock, 1962), in which they introduced ideas such as Pareto efficiency in the policy process (Mueller, 2003).

Although economists have largely identified the impact of politics on public sector reforms (Fischer and Miller, 2017), the impact of these reforms on the political processes is not fully understood. While politicians intervene in the state of the economy, economic activities also shape and structure policy platforms (Naschold, 2017). Therefore, the relationship between public sector reforms and politics has a reverse causal characteristic (Figure 1).

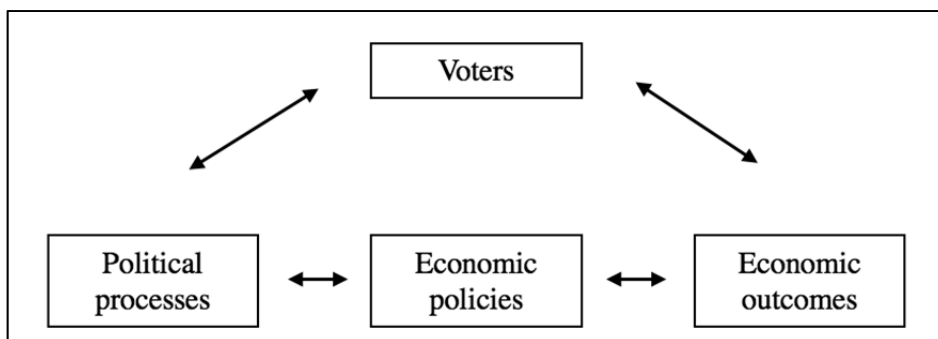


Figure 1: Interdependence between economic policies, political processes, economic outcomes and voters⁴

Source: Author's work

⁴ Political processes mainly refer to elections or any other form of a political change. Voters influence political processes through voting and political preferences. Voters influence economy by making various economic choices.

Partisan theory (Alesina et al., 1997; Alesina, 1987; Nordhaus, 1975; Lindbeck, 1976; Block, 2002; Hibbs, 1977; Frey and Ramser, 1976) elucidates how political developments (e.g., elections, power shifts, political ideology changes, political cycles) and arrangements (e.g., democratisation, internationalisation) affect public policy, thereby causing public sector evolution and restructuring (Suleiman and Waterbury, 2019). However, the challenges of political aspects for public policy formation processes have been seldom studied. Moreover, theoretical models that provide insight into the political dimensions of public sector development are lacking.

A central question of economists is the particular impact that economic developments have on government policy and how exactly government reforms shape the economy (Shalev, 2018; Maor, 2019). The sophisticated institutional and political settings of policymaking, along with the difficulty of estimating or developing economic models, have resulted in the absence of a clear conclusion that provides a logical explanation of events. However, the literature clarifying specific aspects of the relationship between politics and economy is rich. In this thesis, I argue that the connection between political events and economic outcomes, specifically those related to party politics and public sector reforms, is far more complex than previously identified. The literature on political economy, public finance and public management has mainly dealt with the structure, functions and tasks of the state, particularly regarding rulers' influence on decision-makers in the private sector. Some studies have examined private decision-makers' influence on the activities of the public sector through voting. Rarely, the content and volume of public sector activities have been debated, but how the course of activities is influenced through voting, **leading to public administrative reforms**, has been seldom studied. The literature has mostly focused on the relationship between sectors and decision-makers, but it has not incorporated the influence of voters, nor the power and ideological shifts in government. Particularly, the effects on the public sector organisation of majority voting have not been discussed. Considering these political economy perspectives in the public policy implementation and design process by integrating political economy into public sector restructuring will enable society to understand the mechanism of sustainable reform development.

1.2 Aim of the thesis, main research question, sub-questions and resulting tasks of analysis

The purpose of this thesis is to integrate the PBC theory with **public sector evolution**⁵. In other words, it aims to determine whether public sector changes (shown by an increase or a decrease of the public production), follows government changes (or vice versa). Therefore, utilising the PBC theory, the thesis

⁵ Public sector evolution refers to the increase/decrease, modification and transformation of the public sector. Further explanation is provided in sub-chapter 1.5.

analyses how increased public production and decreased private production lead to governmental change and how these governments adjust and reform the public sector (thereby introducing the evolutionary process of public sector development).

The thesis models the relationship between government and the public sector structure, as well as the government's dependency on voter preferences to explain government changes and activate public sector restructuring. The thesis aims to explain the political drivers and consequences of public policy in the context of the ratio between private and public production. Furthermore, it aims to identify the directions and signs of the relationships between main players in the process: politicians, voters and economic units (private and public). Moreover, this thesis explains the outcomes and results of the interdependency between economic and political markets in this context and identifies the links and mechanisms that enable the relationships to exist or change. Additionally, it identifies the cyclicity of government power shifts as a result of economic and political processes that lead to restructuring and transformation of activities.

The main research question to be answered in the thesis is as follows: ***How does the political cycle (also, political business cycle) affect the evolution of the public sector (public sector reformation)?*** In other words, I investigate the relationship between political shifts (ideology shifts) in power and the ratio between private and public production. The ratio summarises substantial shifts in the evolution of private and public production. As such, I operationalise the reformation process with the value of the ratio between private and public production. To achieve the aims of the thesis and answer the main research question, the following research tasks were established:

1. Reviewing theoretical considerations from the existing literature, connecting them to the research aim of the thesis, and identifying existing gaps.
2. Formulating a novel macroeconomic model that underpins the relationships between the economic and political actors and processes that are the main subjects of this thesis.
3. Observing the empirical trends in the democratic world and exploring relationships between relevant variables (econometric analyses).
4. Employing deep-dive analyses of one country case and deriving parallels and implications from the theoretical model in empirical findings (and vice versa: applying implications and findings of empirical observations to the theoretical model).
5. Summarising findings from the theoretical model and empirical observations, thereby deriving implications for policymakers and scholars interested in further research of the topic and providing the main conclusions of the thesis.

1.3 The sequence of analyses and organisation of the thesis

The thesis addresses the questions and challenges stated in the previous section as follows:

- The thesis provides a review of the existing literature on political economy models of public policy, as well as coordination models of political and economic development. This review provides and organises key ideas and theories on public sector reformation facilitators.
- A novel theoretical model was constructed to explain the relationships between political parties in power, the electorate and public production evolution processes. The new macroeconomic model was based on the theories and ideas proposed in the previous literature. The model provides a new setup that enables specific modelling and explanation of the impact of political variables (power shifts) on the development of the ratio between private and public sector production.
- The thesis offers empirical investigation of the research problem by addressing the effects of governments' political ideology on the ratio between private and public production using econometric analyses of the panel data from 26 parliamentary democracies in Europe between 1993 and 2019.
- The thesis describes an in-depth case study of reform processes related to changes in the public sector based on document analyses (electoral programs and policy documents) in the UK from 1945–2020. The qualitative assessment of reforms is complemented by quantitative analyses of data from the same period.
- The thesis summarises the results and provides recommendations and implications of the findings. Furthermore, it suggests model extensions and further research directions. The sequence of analysis and organisation of the thesis's chapters are illustrated in Table 1.

Table 1: Organization of thesis

	Chapters	Specific research questions developed to answer central research question
Theoretical consideration	The Political and economic coordination	1.1 What relationships exist between the political and the economic systems?
	The political economy of public sector reforms	1.2 How is public sector reform defined? 1.3 Which political circumstances cause public sector reforms?
	The PBC theory	1.4 What are the driving forces of politicians considered by PBC theory? 1.5 How do politicians and voters react to political conditions?
	Public and the policy	1.6 How can these politician and voter reactions be expressed in relation to the public sector?
	Two party systems	1.7 How can the shown development be expressed for a two-party system case?
Theoretical consideration	The size of public sector	1.8 How does the public sector develop in different democracies?
	Introduction to the model	2.1 How is the course of reforms influenced if it depends solely on voter behaviour?
	Baseline model	2.2 Which macroeconomic models for a two-party, democratic parliamentary state should be elaborated to incorporate politically initiated PSRs?
	Closed economy model	2.3 What are the features of a baseline model for a closed economy in which reforms are related to public expenditures?
	Introducing investment in the model	2.4 How are the ratio of private to public production and reform activities influenced by private investments and by introduction of money market, taxes and public debts, as well as fiscal policy and growth in the model?
Model	Introducing money market in the model	2.5 How are the reforms influenced by economic changes, such as the amount of money, public debts, taxation, import/export, etc.?
	Introducing taxes and public debt in the model	
	Two-country model	2.6 How should the model be elaborated for a two-country model? How are flexible voting terms and coalitions considered in the model?

Chapters		Specific research questions developed to answer central research question
Empirical chapters	The ratio between private and public production and political cycles in European countries	3.1 Is the relationship expressing w (the ratio between public and private production) the determining factor for the administrative reforms, or do other factors play a decisive role? 3.2 Can the relationship between the political ideology of the government and the ratio between private and public production be investigated through real data? How should such analysis be organised? Which countries and economic and political circumstances should be included? 3.3 Do econometric analyses and their results support the business cycle model of administrative reforms? 3.4 What are the limitations of econometric analyses, and how can econometric analysis be improved to overcome these limitations?
	Political business cycle in UK: A case study	4.1 Is UK a relevant case study for the research purpose of this thesis? 4.2 How has the UK government changed over time in terms of main political parties (regarding changes in the political ideology of the government)? 4.3 Are there accompanying changes in administrative and public sector reforms? 4.4 Do any other topics than public sector reforms influence voting behaviour, and if yes, what are they? 4.5 Does quantitative evidence of the impact of government ideology on the size of public sector exist in UK? 4.6 Does the example of the UK support the basic hypothesis of the macroeconomic PBC reform model?
Conclusion	Extensions of the model	5.1 Which future extensions of the model should be made by weakening the restrictions resulting from the delineations?
	Recommendations and future research	5.2 What are the limitations of the current study and how that can be developed further? 5.3 What implications can be derived based on the findings of the model and empirical chapters? What are the main findings?

Source: Author's own work

1.4 Delineations

Delineation of the content:

- The analyses of this thesis are concentrated on parliamentary democracies; the aim of the work is not to study other institutional arrangements, and the research does not consider federal structures. This approach is justified because partisan theory is only relevant for democratic systems (Hibbs, 1992), and the aim of this thesis is to study the effects of partisan political cycles on public sector reform. The work is largely based on two-party systems.
- The thesis restricts the factors and determinants of public sector development, as well as the main hypothesis on economic and political variables. Focus on the effect of the ruling party and its ideological motives on public sector reforms was maintained. Thus, this research does not consider the impact of wars, natural or man-made disasters or epidemics, among others. However, some factors were considered in model extensions, such as coalitions, exports and imports.
- The work does not discuss specific reforms, and the analyses does not address the details of territorial reforms, tax reforms, functional reforms⁶.
- Analyses of the UK case were restricted to an investigation of the political and economic processes relevant to the research question of this thesis. Although other factors influence public sector reforms, these additional factors were mentioned only in the context of UK reform development, and focus on the reform drivers that reflect the research aims of the thesis was maintained. However, limited analyses of external factors were considered in some circumstances.

Regional delineation:

- Regionally, the thesis concentrates on western parliamentary democracies. Dictatorships, autocratic or socialist and Islamic countries were not included in the analyses.
- The empirical study of European countries applied econometric analyses to 26 parliamentary democracies from the OECD and/or European Union (EU) member countries.
- The UK case study provides empirical observation of policy processes under political cycles. The choice of the UK as a case study was due to the country's long and stable political platform in which the two-party system and changing administration reforms are evident.

⁶ Reforms undertaken to improve institutions, public financial management, systems and controls. Functional reforms include shuffling of competences among levels of governments; public employment reforms; special sector reforms considering military, education and health services; or new balancing among executive, legislative and judicial bodies.

Delineation of the period:

- The time horizon of literature analyses of theoretical and empirical consideration was from the ancient period until 2020.
- The time horizon of the case study of the UK was from 1945–2020.
- The time horizon of the panel data analyses was from 1993–2019, as the data for political variables were only available for a limited period.

Delineation of methods

- This thesis consists of three main parts, each of them using different approaches. These are the theoretical consideration, model and empirical (econometric analyses and qualitative assessment of reforms) chapters.
- In the theoretical considerations, narrative approach is presented based on previous literature in the field. The model chapter is based on the macroeconomic model-building task. The first part of the empirical chapter provides the econometric analyses to illustrate the research problem and the relationship between political ideology and the ratio between private and public sector production. Finally, the second part of the empirical chapter uses narrative approach based on document analyses and interpretation of policy reforms and electoral programs in the UK from 1945–2020, as well as econometric analyses of the empirical data from the same period.
- The thesis concentrates on economic theory-oriented methods rather than methods from economic history, law interpretation, analysis of ideologies, those prevailing in the theory of economic policy and welfare theory, among others. **The work concentrates on the sequences of reforms; therefore, the approach to modelling is different from approaches presented in previous public choice literature (Downs, 1957; Buchanan and Tullock, 1962; Mueller, 1986; Grofman and Norrander, 1990).** Reforms are ideological until the election is lost. Thus, the aim of the model was not to reshape the public choice theory but to consider the partisan aims of politicians who attempt to realise their ideologically based policies until the loss of elections.
- The theoretical macroeconomic model constructed in this study is similar to Keynesian economic models. This approach was taken due to the nature of the research problem. Public sector-related instruments are better described and modelled in Keynesian macroeconomic models than in classical models. Furthermore, computable general equilibrium (CGE) models were not used because sufficient modelling of public sector was unavailable. Additionally, Keynesian macroeconomic models are most appropriate for tackling public management concepts and business administration problems of the public sector (Blinder, 2008; Clerc and Ferreira, 2020). The model formulated in this thesis provides a good illustration of the connection between PBC theory and the public sector reformation process. Stochastic macroeconomic modelling (Aoki, 1998) was not applied because the work aims to model economic and political reasoning, not to provide impact or economic policy analyses.

- The model formulated in this thesis is based on a static approach to show the effect of the ruling party's political ideology on the ratio between private and public production. The ratio operationalises the reforms that increase or decrease public production (these reforms are not focused on changes in the size of government expenditure but show changes in the volume of production⁷). If the government reaction is dynamic, the model develops into a chaotic approach with an extremely large number of potential solutions. In this instance, it does not provide the ability to interpret or understand results. Therefore, this thesis examined the dynamic process by applying a static solution every period. In other words, the model assumes that the political party in power decides the public production-increasing/decreasing reform in each period and is interested in the outcome of the period. By investigating the development of the ratio between public and private production in each period, the model becomes dynamic, providing the ability to account for dynamic affects and interpret the results accordingly.
- With respect to econometric analysis, the fixed effects (FE) regression model for panel data was used for analyses of European countries. Most previous studies exploring the effects of political variables on the public sector have been based on country-level investigations. The main advantage of using the FE panel data model was its ability to control for unobserved heterogeneity.
- Regarding the UK case analyses, various methods were combined and applied to derive relevant conclusions. First, narrative approach based on policy documents and electoral manifestos were used to describe the policy reforms and political environment for respective periods from British history. Second, problems and findings were illustrated using economic data, and parallels were derived from the theoretical model. The qualitative assessment of UK reforms is complemented by quantitative analyses of the data for the same period. In this case, the Prais-Winsten estimation model (Prais and Winsten, 1954) was chosen to determine with the serial correlation.

1.5 Definition of key concepts and terms

Before entering into the theoretical debate and modelling of the research problem (and tasks) formulated in the previous sections, I will define key terms and concepts used in the thesis, explaining their meaning in the context and scope of this research. Clear definitions will enable readers to follow the thought development of this work from the beginning. Additionally, explaining the main terms of the work minimises any possibility of deviation from the

⁷ The difference in the definition of government expenditure and public production (used in this thesis) is further explained in section 3.2. Additional details on the measurement of the public production are provided in section 4.3.

context due to misuse and misunderstanding of the actual definitions and meanings attached to these key concepts.

Governance reforms:

- Governance reforms are one of the most difficult topics to debate and define (Farazmand, 2017) as the word *governance* has various interpretations (Keping, 2018). According to the Oxford English Dictionary, *governance* is a political power that controls influence, the authority to order, methods for management and the system of regulations, among others. In economics, particularly political economy, the term governance is generally understood as a policymaking authority of government/institutions that directs political, economic and social activities and thus leads to certain economic, social or other outcomes (Dixit, 2015).
- While the above-stated definition of governance reforms is applied in this thesis, the focus of the term's interpretation is narrowed. For this research, the area of interest regarding governance reforms lies in public sector governance (PSG) reforms (PSGRs). PSG is the collective decision-making ability of central government (CG), institutions, organizations and agencies to create conditions, implement policies and deliver services for the public sector. Therefore, the governance reforms discussed in this thesis are CG reforms related to public sector services and their delivery; this doctoral thesis concentrates on public sector reforms that deal with either increase or decrease of the size of the public sector. The PSGRs discussed, modelled and analysed throughout the thesis are defined as the modifications that lead to an evolution in the public sector by changing the public sector economic units, such as the volume of public production or number of public offices or public enterprises.

Public sector/public sector evolution:

- The term *public sector* has diverse definitions and understanding across disciplines (Lane, 2000). The existing literature on political economy has often discussed the public sector as the size of the government (Horn and Horn, 1995). Furthermore, the size and/or volume of the public sector have been previously quantified, modelled and observed in terms of public expenditure (Burkhead and Miner, 2007), general government revenue (Afonso and Furceri, 2010) and public employment (Lights, 1999), among others. In this thesis, the concept of the public sector size has a specific meaning, representing the volume of all publicly produced goods and services. However, in certain cases, I use different indicators (public consumption, employment and expenditure) as proxies to measure the public sector.
- Public sector evolution refers to the increase/decrease, modification and transformation of the public sector. This definition aligns with that used by Friedrich and Ukrainski (2016). Public sector evolution, as discussed in this thesis, is mainly the result of political shifts in government. In exceptional cases, other factors of public sector drivers are introduced, but discussions of

these factors are positioned in relation to political changes and/or electoral preferences.

Government

- In this thesis, government is defined as the institution of state decision-making, a definition similar to the one applied by Lane (2000). This simple definition of government is used because it underlines one of the key aspects of this research—the decision-making function of the government. The borderline between ideologically left- and right-oriented governments lies on the application of state activity (Imbeau et al., 2001). Throughout this research, the term *government* is specifically used to describe the ruling party (or parties) in the government.

Political business cycle

- Various ideas are related to the concept of PBC, which will be discussed later in the thesis. This section does not aim to provide the theoretical background or argumentation of PBC models but rather to define the concept in which they are used. Many studies have introduced the concept of PBC, typically defining it as a cycle of certain changes in economic policy caused by elections (Drazen, 2000; Alesina et al., 1997; Nordhaus, 1975; Hibbs, 1977). These changes are various, including macroeconomic, fiscal and monetary changes. For the purpose of this doctoral thesis, the PBC theory is interpreted as a concept that describes cycles in PSGRs following elections (i.e., the cycles that occur in the development of reforms that increase and decrease public sector production following the election of a new government).

Political ideology

- The political spectrum is multidimensional (Feldmon, 2013). While political parties hold certain economic beliefs, their preferences may differ in areas such as human rights, environmental issues and foreign policy, among others (Adams, 2001). This thesis examines political ideology in terms of its economic dimension. More specifically, the term *political ideology* is used to refer to political parties' support of increased or decreased state activities in the economy. Therefore, the left-right dimension of political ideology in this thesis should be understood as follows (Figure 2):
- Left-wing political parties are in favour of increased public sector production.
- Right-wing political parties support the decrease of public sector production.

Partisan politicians

- In this doctoral thesis, I assume that governments are formed by partisan politicians. The term *partisan politician* has various interpretations throughout the literature, and it is typically defined as those who have different

ideological aims in their political behaviour, as represented by social, economic and political values that are implemented in their policies (Hibbs, 1992). However, in this doctoral thesis, the concept of *partisan politician* is narrowed and defined as follows: partisan politicians are those who ideologically differ by support either for increase or decrease of public sector production. The idea of partisan behaviour is rooted in the PBC theories discussed further in the next sections.

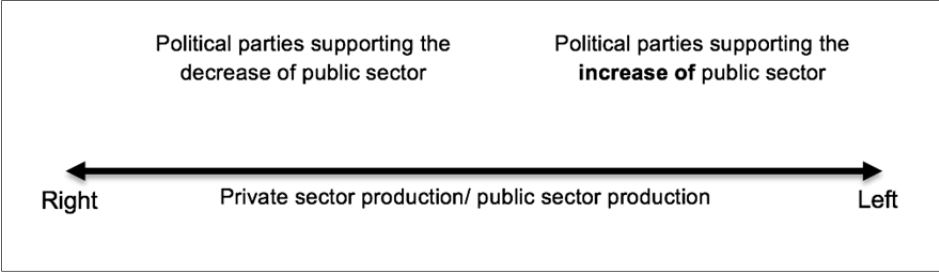


Figure 2: Definition of political ideology in this thesis

Source: Author's work

2. THEORETICAL CONSIDERATIONS

2.1 The aim of the chapter and connection to other parts of the thesis

This chapter aims to explore, review and summarise the existing literature on economic theories of public reforms, political cycles and voting behaviours from a political economy point of view. The main objective of the chapter is to provide answers to questions underpinning the theoretical background of the model-building exercise described in the next chapter (see Table 1). To provide a concise review of appropriate considerations from previous work, the chapter is further divided into seven sub-sections. Each section focuses on specific topics from the existing literature; thus, this chapter comprises the following six sections:

1. **Political and economic coordination:** Explains the existing coordination models between economic and political markets
2. **The theory of PBC:** Reviews PBC, with a special focus on the partisan and opportunistic branches of the theory
3. **The political economy of public sector reforms:** Summarises key political-economic incentives of the public sector
4. **Public and the policy:** Explains the relationship and interdependency of the policy direction and voters' preferences
5. **The size of the public sector:** Provides an overview of the size of the public sector in existing political systems
6. **Two-party systems:** Discusses the specificities of two-party systems
7. **Chapter conclusions:** Summarises the findings of the chapter and provides conclusions

2.2 The political and economic coordination

A wide body of general literature concerns the recent efforts in European countries to implement structural and fiscal policy reforms that hold serious risks (Gruner, 2013). Reforms may not be politically viable over the long term if they lack the necessary social balance (Alesina et al., 2006), as voters may reconsider the reforms and change their voting behaviours (Herrera et al., 2008). Thus, introducing a new or modified reform requires fiscal and political coordination both on the national and regional level (Grazzini and Ypersele, 2003). The policy process is complex and dynamic, connecting multiple players (i.e., local and national administrations, political units, individuals) under various laws and regulations (i.e., bureaucratic procedures, constitution, administrative rules). Mapping those connections, particularly through economic modelling, is important for explaining process outcomes, such as the poor performance of the policy, or clarifying future strategies for policy-makers. The outcomes of the political system establish governing rules for economic activities and markets. For example, the legislative body formed as the result of an election is respon-

sible for specifying and interpreting regulations and laws and providing the framework to enact the laws. Governance of the economic market is also modified by the executive and judicial branches of government.

Government offices are important coordinating devices. For example, the legislative body of government combines political actors with distinctive ideas and interests. In theory, political institutions should be formed in a way to reflect social and economic beliefs, as well as preferences, costs and benefits (Dixit et al., 1997). However, in practice, the complete coordination between political system and economic activities is seldom achieved. Moreover, failures in economic markets are often results of political system failures, and vice versa (Jessop, 1998). Although the impact of politics on economic processes is significant, economic theories have not been fully integrated with political decision-making systems of economic units and outcomes in a unified, general equilibrium model (Shalev, 2018). Theoretical challenges of this nature are often solved by treating political processes as exogenous factors, and a large body of political economy literature has aimed to combine different models or create new ones specific to narrow aspects of the problem (Maor, 2019).

Both empirical and theoretical considerations in the literature have addressed the coordination of political processes with economic activities. In such frameworks, political economy equilibrium (Magee et al., 1989) is often used to investigate economic and political factors and understand the political/economic scenarios that shape the policy process (Isard et al., 1968). Political processes and economic activities are interdependent; however, they use different tools and mechanisms in their applications. Politics involve power allocation to accomplish aims, while economy concentrate on resource exchange (Fritz et al., 2009). Figure 3 illustrates this interdependence. Political markets influence economic markets, and economic markets impact political markets.

Various methods for investigating the channels of connection between political activities and economic outcomes exist. The political economy literature on this connection is rich and complex. The evolutionary computable general political economy equilibrium (CGPE) model by Henning et al. (2008) is one such model that summarises different channels of communication and influence between the political and economic systems. The CGPE model has been investigated from multiple perspectives and extended to various related theories and models. Similar propositions have been stated as basic assumptions in political economy literature since Downs (1957). However, the CGPE model by Henning et al. (2008) is used as an example in this thesis because it provides a more comprehensive summary of the existing research in the field. It also illustrates the channels of connection between politics and economy according to the scope of this thesis. Those channels are as follows (according to Henning et al. [2008]):

- **A legislative decision-making module**
 - Policy A is formed as a result of aggregated policy preferences.
 - The policy decision is modelled.
- **An economic module**
 - Policy A is converted into economic outcome a .
- **An interest mediation module**
 - Society's welfare $W(a)$ is converted by electoral competition (or lobbying) into political support $P(W(a))$.
 - Voters' behaviour is modelled.
- **A belief formation module**
 - Political views of political parties, policy-makers and voters are revised based on the information exchange between them.
 - The belief function of voters and politicians is modelled.
- **A policy learning module**
 - Political views of political parties, policy-makers and voters are amended based on experiences (learning) from previous terms.

As discussed above, the interaction between politics and economics is multi-dimensional. This thesis aims to explain transformations in the public sector as a result of political movements. Various theories from previous research have indirectly modelled these drivers; however, certain theories are more applicable than others. For this thesis, the best illustration of the coordination mechanism is multi-level administrative scenarios, such as the model of political and administrative coordination of jurisdiction (see Figure 4) created by Batey and Friedrich (2000). This framework provides an insight into the political and administrative processes that represent key institutional schemes that provide a solid basis for later discussions in the thesis. Understanding connections between different layers of government and the interdependence of voters' utilities and those of different administrative units in the government provides a solid groundwork for the modelling exercise described in the next chapters.

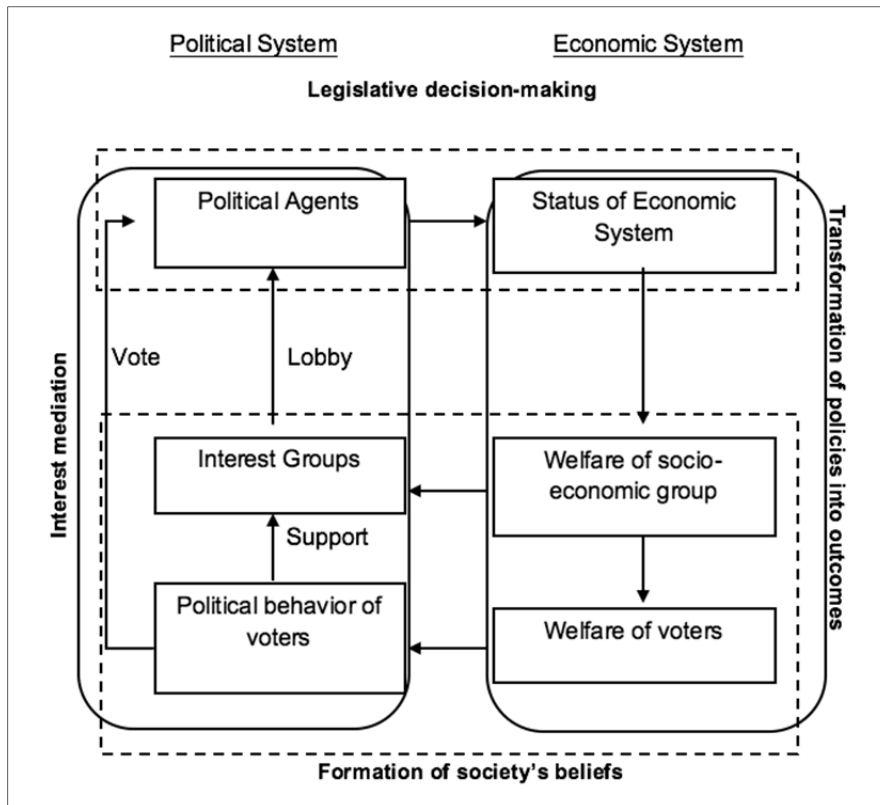


Figure 3: Interdependence between political and economic systems
Source: Based on Henning and Hedtrich (2018) and Henning et al. (2008)

According to Batey and Friedrich (2000), the following three administrative levels exist:

1. Public offices
2. Regional directory
3. Government/ministries

Public offices are on the first level and have a certain production, utility function and budget that must cover labour and material costs. The regional directory (ministry of finance or similar) is on the second level and holds responsibility for budget allocation to public offices. Ministries are on the third administrative level, and their goal is to maximise votes (Figure 4).

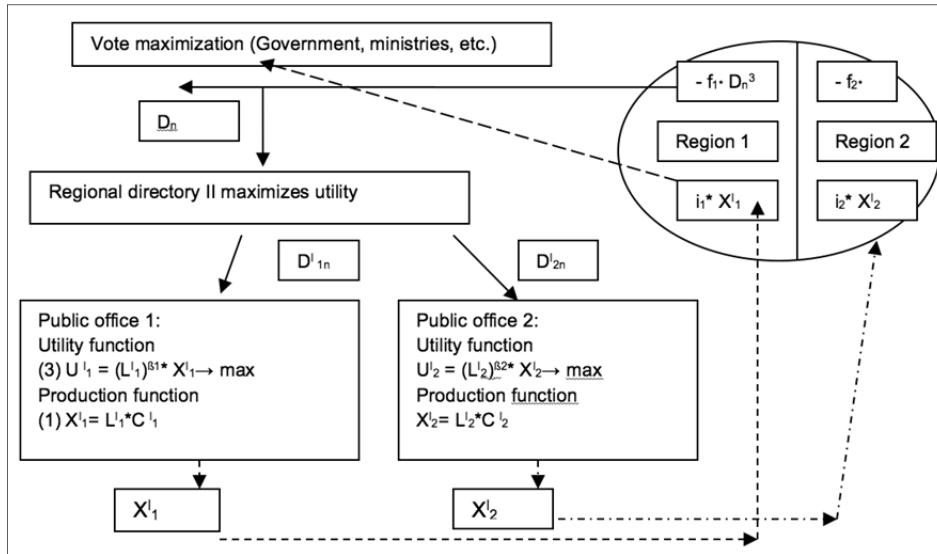


Figure 4: Model of political and administrative coordination of a jurisdiction

Source: Batey and Friedrich (2000)

The model by Batey and Friedrich (2000) illustrates the following key aspects:

1. Aim of the government is to maximise votes (*maximisation of the vote function*) to get re-elected.
2. Aim of public offices is to maximise their utility functions.
3. Voters are sensitive to the output of public offices and the budget⁸.
4. The coordination of administration is set based on the *budget optimisation problem*.

The model of political and administrative coordination by Batey and Friedrich (2000) can be formulated in various ways (for example, Friedrich and Xiao (2002) modelled several jurisdictions with different voting bodies, e.g., in a federation). The model becomes connected to the model developed in this thesis because it shows changes in the public sector initiated by changes in voting.

In the model constructed in this study, an indicator of the mix of goods provided by the public sector and the private sector was used. Higher public sector production is related to greater amounts of public services and public political activities. Shrinking public sector production leaves room for higher private-sector production to exist. As the aim of the government is to maximise votes, and since voters are sensitive to changes in the public sector, changes in voting outcomes affect the public policy. The process is cyclical, and political changes

⁸ They do not like higher budgets because they expect a reduction in consumption of privately produced goods as their disposable income may be cut. They also do not like a low budget.

are followed by transformations in the public sector. Thus, addressing the problem of public sector development also depends on political shifts. The theory about shifts in politics and their effect on economic outcomes, as well as the cyclicity of these shifts, are often referred to as the PBC theory (discussed in the next chapter).

2.3 The theory of PBC

The model constructed in this thesis elucidates public sector development under conditions of the PBC theory. The ideas underlying the model were highly influenced by various developments and implications of PBC theory and the related research. The literature on PBC theory (Figure 5) has advanced in two separate directions: opportunistic theory and partisan theory (Alesina et al., 1997; Alesina, 1987). While the OPBC model discusses a cycle as the result of politicians' will to get elected or re-elected (Nordhaus, 1975; Lindbeck, 1976; Block, 2002), the partisan model focuses on different party policies based on different ideologies and economic goals (Hibbs, 1977).

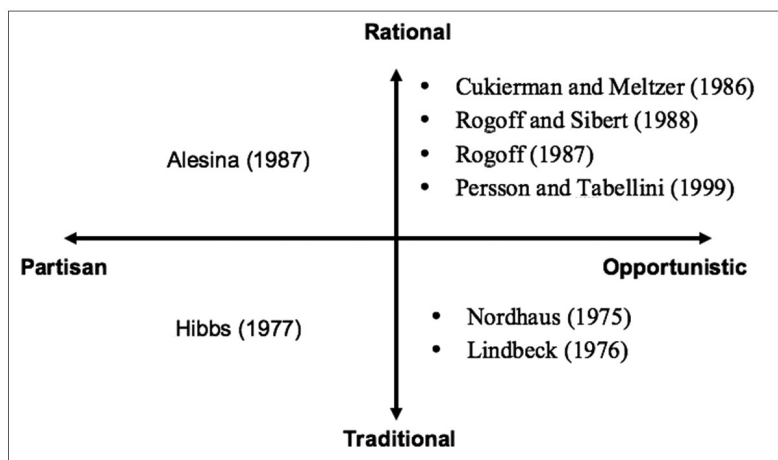


Figure 5: Mapping of the models of PBC theory

Source: Author's work based on Alesina et al. (1997).

The first theory, the “opportunistic” motivation of politicians, was created in the mid-1970s (Nordhaus 1975; Lindbeck, 1976). This theory eliminates party-specific policy preferences and emphasises the importance of maximising the chance to win the election. In contrast, the second direction of literature, the partisan model of PBC theory (Hibbs, 1977), underlines the partisan motivation of politicians that results from the different ideological orientation of political parties. Moreover, the partisan theory argues that policymakers also act according

to ideological beliefs after the election period. Older models that attempt to explain different aspects from both theories of PBC also exist, such as the model of economic and political decision-making by Rothenberg (Rothenberg, 1965). In addition to the partisan/opportunistic dimension of PBC theory, the literature has also separated the “traditional” and “rational” models of PBC. While traditional models argue that governments can predict and impact economic conditions, the rational models (Kyddland and Prescott, 1977; Barro and Gordon, 1983) introduce the concept of rational expectations, emphasising that politicians’ influence on the economy is limited. Later rational expectation models of PBC were incorporated in both partisan (Alesina, 1987) and opportunistic (Cukierman and Meltzer, 1986; Persson and Tabellini, 1988) PBC models.

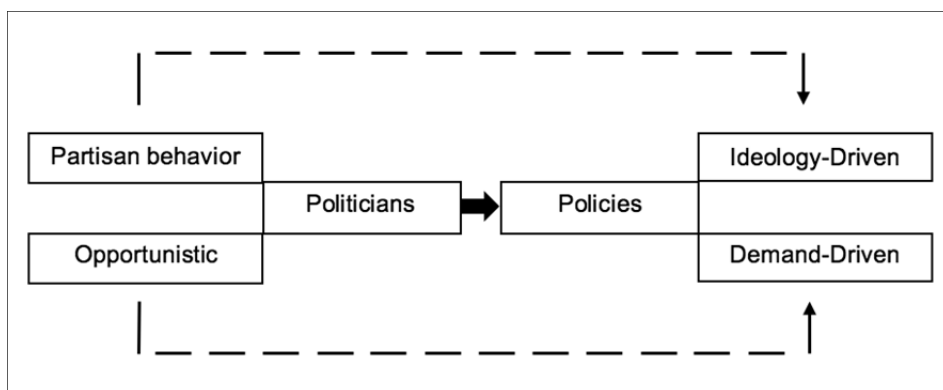


Figure 6: Channels of policy influence: Partisan and opportunistic

Source: Author’s work

The hypothesis of this thesis is based on the PBC theory similar to that created by Frey and Schneider (1978). According to Frey and Schneider and other scholars (Frey and Schneider, 1978; Frey and Lau, 1968; Lau and Frey, 1971), ideology is one of the key drivers of economic policy decisions, but not the only one. Frey and Lay (1968, 1971) showed a certain trade-off in which government must maximise the “felicity function”, which is a combination of both ideological satisfaction and voters’ preferences. Similarly, Naurin (2011) utilised three main aspects of party behaviour—vote seeking, office seeking and policy seeking—to derive a united model. In other words, policies offered by political parties are influenced through two main channels (Figure 6). First, policies are demand driven, and politicians adjust policies based on the needs of society (Cusack, 1997). Second, policies are ideology driven, and politicians design policies based on their ideological beliefs (Hibbs, 1977).

In this study’s model, the following assumption is made: political parties display ideological aspects in their behaviour and support either increased or decreased public production. Furthermore, these partisan differences are in-

fluenced by opportunistic goals to be elected or to remain in office (Figure 6). The model developed in this study focused on politicians' partisan aims to maximise their utility function based on their ideological preferences. Additionally, it considered the opportunistic aims of the political party to get elected (or re-elected).

2.4 The political economy of public sector reforms

In this section, I discuss models and empirical findings that provide the basis for investigating the influence of PBC on the structure of public sector (i.e., the effects of political changes on reforms of CG administrations and municipalities).

2.4.1 Political economy incentives of public sector reforms

Political economy incorporates political motives with economy to explore the dependency and associations amongst states, markets and citizens (Wetterberg and Brinkerhoff, 2015). Within these associations, formal and informal institutions function under certain circumstances and regulations. Political-economic research has focused on the circumstances that create obstructions or stimulus for change (Bunse and Fritz, 2012). The literature on these topics is rich; however, it lacks consistency and does not provide a clear and systematic approach. A majority of this literature focuses on case studies, neglecting political economy perspectives. Moreover, analyses of different types of reforms are extremely rare. Kingdon (1995) identified three aspects that play a major role in policy formation and implementation:

1. Politicians (also citizens) identify the problem (or create the problem, such as international political conflicts and disputes).
2. Politicians develop a policy idea that solves the identified problem.
3. Policy-makers use politics to implement the policy (including changing the government through elections if the policy idea is designed by the party in opposition).

Often, these three aspects are combined to achieve successful implementation of the desired policy. Especially for public sector policies, the alignment of different factors is crucial. Public sector changes are most significant when fiscal facilitators are combined with power shifts in government and the political spectrum (Bangura and Larbi, 2006). Although the literature has not offered a consistent research structure for the political economy of public sector reforms, it has provided groundwork for systematisation of reform drivers and analysis of the impact of political aspects. Thus, a conceptual framework can be derived. A large body of literature has also addressed the political and economic determinants of public sector changes, such as private sector productivity, the political environment (ideological spectrum of political space and elections) and

economic development (Kingdon, 1995; Dreher et al., 2009). Political economy reform drivers are often identified as those that impact public welfare as well as the public sector, such as politicians' aims with elections and votes (remaining in office). While politicians likely do not support reforms that are uncertain, electoral programs may include policy plans only to win elections.

The availability and quality of public service delivery have been linked to institutional conditions, electoral cycles and political circumstances (Batley et al., 2012). Green (2007) found that political competition between political parties is a key driver for government responsiveness and effectiveness. The individual roles of politicians also play a large role in implementing public sector reforms (Dreher et al., 2009). Finally, the role of institutions in restructuring the public sector is important (Bouckaert and Kuhlmann, 2016). While improving the quality of public services has been a topic of attention and an urgent priority for many economists (Hartley, 2005; Pollitt and Bouckaert, 1995; Ramseook-Munhurrun et al., 2010), the deficient relationship between decision-makers and the electorate has been highlighted as a major concern by various scholars (Nelson, 2007).

The impacts of political variables on public sector reforms have been recognised (Bunse and Fritz, 2012; Suleiman and Waterbury, 2019; Bertelli, 2012). However, relatively little is known about what types of public sector reforms are more effective (in terms of voter satisfaction, economic benefits and social well-being) than others or what scenarios and contexts encourage the implementation of certain changes. Researchers in political economy are attempting to address these uncertainties. Political economic determinants of the public sector and welfare state include politician aims and plans for vote maximisation, their will to remain in office and their rent-seeking behaviour (Keefer, 2011). Moreover, politicians and political entities do not typically support reforms that possess uncertainty regarding voters' support prior to the election period. However, scholars have identified reform promises in electoral programs that are not supported by relevant political capital⁹.

Despite the unattractiveness of public sector reforms and other obstacles that politicians face while addressing the public policy process, many countries undergo various changes in public administration. In these cases, political support for reforms is often tied to long-term goals (or catastrophes, epidemics, wars, climate change, etc.), which could be sustainable for a long period. The literature has proposed the following specific political economy facilitators:

⁹ Conceptualizes the accumulation of resources and power that is built using relationships, trust, goodwill, influence which politicians earn from public through the policies which public respects (Nee and Oppen, 2010).

1. Political ideology:

- Change in public policy is developed from the ideological beliefs of political parties. For example, left-wing parties advertise expansionary public policy and implement reforms that facilitate public services (Hibbs, 1977; Frey and Schneider, 1978).

2. Demand from citizens and adjusted electoral programs:

- The political support for public sector changes may arise from public/electorate demand. As politicians attempt to maximise their votes, policies are adjusted accordingly. Often, electoral programs reflect citizens' demand for changes, and when political parties come to power, they follow their pre-election promises. Communication between the government and electorate plays a crucial role in the public policy process and relies upon an open information exchange between political actors and citizens (Tendler, 1997). The electorate only supports political parties with public policy reforms if the policy outcomes are clear and meaningful for the electorate (Khemani, 2007). Therefore, policy reforms must be coordinated with economic results and must be relevant to the public sector and individuals.

3. Historical political setting:

- Government legitimacy is an important driver for public sector reforms in non-democratic settings (e.g., in China and Vietnam, where one-party systems exist). For example, to build the legitimacy of the government after the handover of sovereignty in 1999, Macao's government largely relied on public sector reforms (Chou, 2012). Public sector reforms are influenced by the political order and history of the country (Fukuyama, 2011).

The above-mentioned reform drivers and obstacles are relatively specific factors that have emerged in the literature in relation to stakeholders and their will, motivation and capability to implement policies and impact the public sector. Additionally, macro-facilitators of public sector reforms are global, wide drivers that play a significant role in the process. These factors, along with political economy facilitators, create motivation and a climate for public sector modification. Although various challenges and obstacles are related to public sector reform initiatives, many countries undergo major changes in public administration. Modification of the public sector is related to certain incentives. The literature on public sector reforms has emphasised the following main drivers, institutional variables and economic facilitators:

1. Recent democratisation:

- The increased participation of citizens in political processes, such as elections, has positively influenced the demand for improved public sector services (Schneider and Heredia, 2003; Kiragu, 2002). However, scholars have highlighted the importance of other circumstances, arguing that increased democratisation only provide positive signals for reforms under certain conditions.

Public sector reforms are also affected by a decrease in democratisation (e.g., China, Iran).

2. Fiscal pressures:

- Fiscal crises are key incentives for reforms (Schneider and Heredia, 2003; Suleiman and Waterbury, 2019)
- Public debts are a major challenge for many developing countries, and public sector reforms are required to manage limited resources optimally (Kiragu, 2002). Fiscal crises impact the interest groups and can create possibilities for change (Brinkerhoff, 2000).

3. Economic transformation:

- Institutional changes are required to implement public sector reforms successfully (Tomassi, 2003); for example, changes to the economic and political order were an important influential factor in Eastern European states regarding public sector transformation. Intensive growth in the economy is a strong incentive for public sector policies (Gaetani, 2003). While crises may be a cause for public sector reformation, certain possibilities for reforms only emerge with economic growth.

4. Globalisation, regional integration:

- The high degree of international competition facilitates innovation and administrative reforms (Schneider and Heredia, 2003). Introducing new reforms and restructuring the public sector also helps governments increase exporting potential (Bangura and Larbi, 2006).

5. Regional contagion:

- Neighbouring countries often imitate reforms (domino effect) and spread policies throughout regions (Kiragu, 2002). Public sector reforms might be incentivised by international organisations (e.g., International Monetary Fund, World Bank) as a lending condition, especially for developing countries (Baimyrzaeva, 2010). Public sector reforms are affected by other international integrations, such as the EU, and disintegrations, such as Brexit.

2.4.2 The political economy obstacles of public sector reforms

The political economy determinates of the public sector are various, and both negative and positive facilitators of reforms exist. The literature on public sector reforms has identified five main challenges that are present when designing policy reforms. These obstacles are as follows:

1. Time horizon:

- Implementation of public sector reforms is related to significant short-term costs and long-term gains (Bunse and Fritz, 2012). For decision-makers, such

reforms are not attractive. Therefore, governments often abstain from the initial investment in public sector reforms.

2. The presence of limited access and a high degree of clientelism:

- Shortage of certain resources (land, labour and capital) and limited access to important functions (trade, education and warfare) provide political elites with the advantage of control over parts of the economy and rent (Robinson and Verdier, 2013). Clientelism refers to exchanging material goods in return for electoral support (Stokes, 2011). High levels of clientelism are related to increased costs and reduced incentives for public sector changes (Hicken, 2011).

3. Bureaucracy:

- Public sector reforms undergo various bureaucratic procedures (legislative barriers, approval requirements on national and regional levels, other laws related to reform implementation procedures, international laws, etc.), which are often assumed to be a key resistance factor in the implementation process (Bunse and Fritz, 2012).

4. Limited demand for reforms:

- Decision-makers and civic society may have a different understanding and needs for public sector-restructuring activities. As a result, demand for reforms can be low (Stokes, 2011).

5. Specific institutional incentives:

- Politicians (political parties) may have different views due to ideological differences or electoral/party systems (Imbeau, 2001). Political settings (regimes)—autocratic or democratic—may create an obstacle for decision-makers for initiating public sector reforms (Haggard and Kaufman, 1992). Public sector modification is influenced by the design of executive and legislative bodies and the relationship between these bodies (Bunse and Fritz, 2012).

Many countries undergo public sector changes and reforms. However, the reform facilitators and their impact differ amongst nations, especially those that display political economy dynamics. Table 2 summarises the literature on positive and negative drivers of public sector reforms identified in political economy.

Table 2: Triggers, obstacles and incentives of public sector reforms

Categories of public sector drivers	POLITICAL ECONOMY CIRCUMSTANCES
Incentives that trigger and initiate PBC reforms	Fiscal pressures
	Democratisation
	Economic integration
Obstacles of PBC reforms	Time horizon
	Bureaucracy
	Rent-seeking behaviour
	Limited demand of reforms
	Proportional electoral system
Incentives for PBC reforms	Economic growth
	Post-crisis dynamics
	Government's aim to gain legitimacy
	Majoritarian electoral system
	Partisan political parties (ideology)

Source: Based on Bunse and Fritz (2012)

2.5 The public and policy

2.5.1 Public opinion and the policy process

In the previous chapter, I underlined the main political determinants of public sector reforms. While political system (or a party in power) affects policies, the structure of public policies also significantly impacts the changes that occur in politics (Trebilcock, 2014). The literature on policies' effects on different interest groups is extensive (Batley et al., 2012). However, theoretical models regarding these relationships are scarce (Benoit, 2013). As this thesis aims to model the dependency between policy and political groups, the existing literature on the relationship between policy and political groups must be discussed. The main political groups that engage in the policy process are politicians (parties) and voters. In the previous chapter, I addressed topics explaining the impact of political parties on public policy, both before and after the election period. In this section, I will discuss the relationship between the public (voters) and policy.

Figure 7 explains the influence of political groups on policy change, in which public pressure is identified as a key driving force of changes in policy. Without relevant public attention, designed policies cannot not often be implemented (Page and Shapiro, 1983; Soroka and Wlezien, 2010). Thus, political parties in power direct their resources to identify events that influence voters and keep public attention on issues that are considered important for a future policy initiative (Green-Pedersen and Mortensen, 2012).

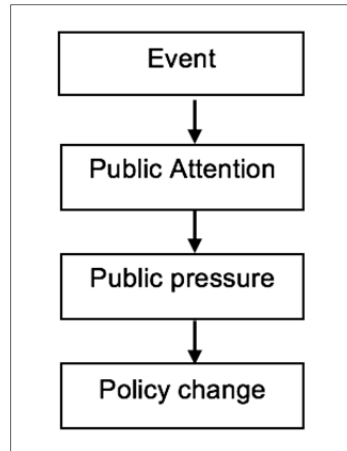


Figure 7: Public influence on policy change

Source: Based on Burstein (2003)

Public opinion impacts policy, and multiple layers of this influence have been identified in the literature (Burstein, 2003; John, 2013). Different phases of the policy process have been acknowledged in the literature: a pre-election phase, a campaigning phase and a governance phase (Schleicher and Peters, 1971). Figure 8 summarises the process and explains the different stages through which policy formation occurs. The figure presents two scenarios of the policy formation process. While, in practice, more scenarios are possible, those presented in the figure best explain the main aspects of the relationship between the public and policy. Policy initiative formulation represents the first stage of the policy process (Hill and Varone, 2014). According to the first scenario, policy formulation occurs during the pre-campaign period. The second scenario explains initiative formation as part of the post-election process. In reality, a hybrid system occurs most frequently, and policy ideas are often initiated during both the pre-election and post-election periods. However, for simplicity and clarity, Figure 8 presents the two separately.

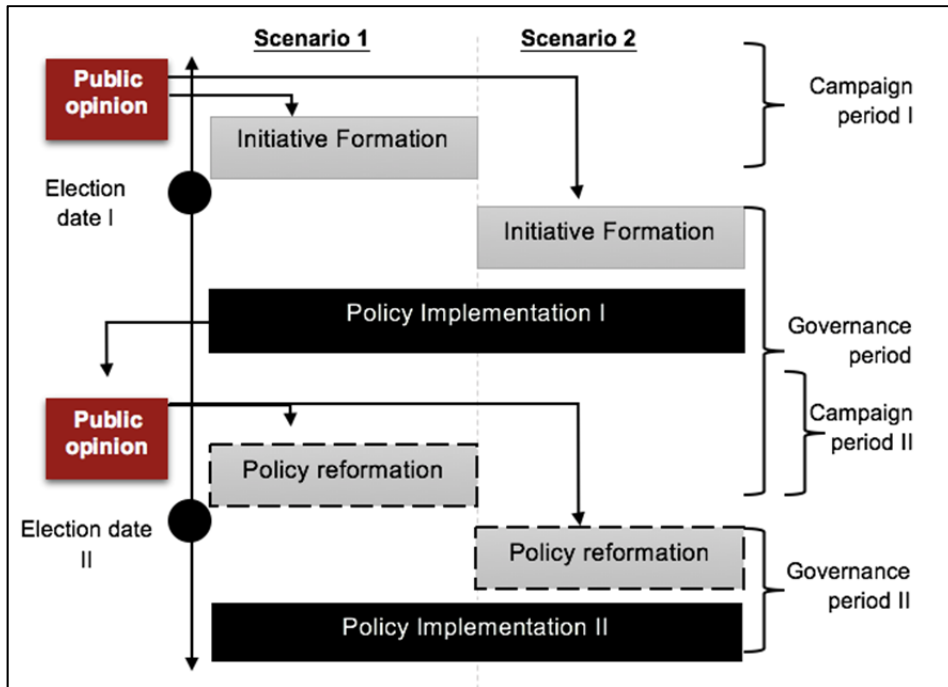


Figure 8: Stages of policy process

Source: Author's work based on Hill and Varone (2014)

The second stage of the policy process is policy implementation (Hill and Varone, 2014). Policy implementation occurs during the governance period of the political party of interest. According to scenario 2, the policy idea can be initiated and implemented simultaneously during the governance stage. However, in traditional political systems, political parties do not often deviate vastly from voter preferences. Policy implementation is followed by the learning process—both by the government (political parties) and voters (by changing/adapting preferences). As a result, the final or next stage in the policy process is policy reformation, in which political parties consider voter reactions regarding the implemented policy and improve the policy (Steward, 2009). This idea was also mentioned in section 2.2 in the explanation of the CGPE model by Henning and Struve (2008).

Voters are sensitive to policies and make election choices in complicated institutional and political settings (Kedar, 2009). Because policy implementation is influenced by public opinion, voter preferences play a role in policy design and formation. The first channel of the impact between the public and policy emerges during the pre-election period, in which political parties form their electoral manifestos and consider the demand from the electorate. The second channel of the influence between the public and policy emerges during the policy reformation stage, during which the learning process takes place (the

public learns about the outcomes of preferred policy, and politicians learn about the utilities/policy satisfaction of voters). Therefore, the policy effect has two main channels: (1) voters' policy preferences and (2) voters' reactions to the policy outcome. These two channels of influence are never fully separated and form a common direction of the effect on the process. However, the time horizon and political drivers, as well as the economic determinants of these two channels, are different, and they play an important role in the policy design/implementation process. A large body of literature has aimed to explain both channels of influence (Tavits, 2007). Some of these theories are further explained in the following section; they are important underlying considerations for the theoretical model that is discussed in later chapters of this thesis.

2.5.2 Voters' reactions and utilities

Not only has the effect of the electorate on party policy shifts been examined, but the nature of the policy shifts has also been widely discussed as an important domain in this field of research (Tavits, 2007; Adams and Merrill, 2005). Given that adopting policy stances is often the most efficient tool for political parties to increase voter support, the research interest in this direction has increased (Calvo and Murillo, 2019; Pennings, 2005). Understanding how and why voters react to policy and policy shifts is important for political parties and the policy process. This understanding elucidates voter preferences, the electoral game and its outcomes (Adams and Merrill, 2005). Furthermore, uncovering how and why voters react to policy shifts provides additional insight into strategy design for political parties to gain votes. This is also an important consideration for this thesis, as the main research task of this work is to explain electoral effects on public policies. Two conflicting ideas on party strategies exist in the literature. According to the first, political parties are incentivised to remain in the range of existing preferences and do not adapt or change their policies (Adams et al., 2005). In contrast, the second argues that this does not always hold true; political parties tend to change their stance because they do not often occupy the optimal position in the ideology spectrum (Adams et al., 2005; Kollman et al., 1992; Laver, 2005).

Supporters of both theories rely on the assumption that if the electorate demands change, political parties will behave accordingly. Tavits (2007) argued that whether policy shifts are damaging or rewarding depends on the policy domain. In cases in which the public expects pragmatic responses from the government, policy deviations are highly supported and tolerated. However, in instances where voters prefer principled statements compared to pragmatic solutions, policy shifts are not welcomed or tolerated. Researchers have argued that economic policies are subject to high levels of fluctuation because voter preferences change as the economy develops (Stevenson, 2001). For example, preferences may differ in pre-election and post-election periods. Moreover, they can change after the policy is implemented. As such, political parties must

operate in a dynamic environment in which they adapt their policies according to the electorate's demand.

2.5.3 Feedback theories

The topic of partisan politics of public sector development is often related to studies of the policy feedback effects that explain the relationship between public opinion and policy, elections, political changes and public reforms (Mettler and SoRelle, 2014). The positive feedback theory (Pierson, 1992) explains the self-reinforcing feedback effects, stating that policies provide resources, information and incentives that create a dependency on the mechanism. These mechanisms operate in different ways, influencing both politicians and the electorate. Positive feedback generates a certain consensus that is resistant to change. For example, welfare states are assumed to be difficult to demolish since both public and political actors are used to them. In these states, the self-reinforcing feedback effect of policies works as inertia, pushing political actors and parties to adjust their ideologies to current mechanisms (Pierson, 1992). In contrast with the positive feedback theory (Pierson, 1992), the theory of negative effect (Weaver, 2010) argues that public opinion pushes the government to implement new policies. In other words, the public has a tendency to desire new, opposite policy from the one that is currently implemented. This theory strengthens the link between policy feedback and policy changes. Weaver (2010) argued that negative feedback effects are more frequent and have a significant impact on policy formations. Moreover, while positive feedback has stability-seeking nature, negative feedback is a driver of change. However, under certain conditions, both mechanisms often operate simultaneously, providing interactive effects that explain radical changes in policies (Weaver, 2010). This idea is further developed in the works of Wlezien (1995) and Soroka and Wlezien (2005) through the model of "public as thermostat". This model provides progressive insight into the link between citizens and policy-makers. Furthermore, the approach aligns with the negative feedback theory and furthers the theory in the sense that it provides additional explanation of conditions when the effect occurs.

The theoretical framework of the model is based on conditions of a democratic regime that implies citizens are informed about policies implemented in the country and supposes the public to form preferences (either increased or decreased support of certain policies) according to expected policy outputs. According to Soroka and Wlezien (2005), the public will behave as a thermostat and maintain policy "temperature" on a desired set point. In other words, whenever policy outcome increases/decreases beyond the accepted level for the public, the public will adjust its preference regarding the policy. Similar ideas are disclosed in the system theory, also known as the Eastonian model (model by Easton), which implies that policy outputs have a "feedback" effect on public input (Easton, 1953; Kast and Rosenzweig, 1972).

2.5.4 Two-party systems

Two-party systems and their role in economic modelling are important (Chhibber and Nooruddin, 2004; Sayar, 1996). As the research scope of this thesis mainly concentrates on political changes related to power shifts between ideologically left- and right-oriented governments, theoretical consideration on this topic is essential. Two-party systems are defined as systems with two main political parties that hold a realistic chance of forming a majority in the parliament (Caramani, 2008). Examples of traditional two-party systems are the United States of America (USA) and the UK, where parties other than the two major political parties have minimal or no power and representation in the parliament. In two-party systems, the electorate usually faces a choice between parties that occupy either ideologically left or right positions (Mair, 2002; Dalton, 2008). This particular characteristic of the two-party system provides the ability to specifically observe voters' reactions and choices regarding ideology, as well as the opportunity to understand how political shifts are initiated and why political parties adopt certain policies that differ or are similar to the party in opposition. In contrast, multiparty systems are characterised as systems in which several parties stand on both sides of the left-right dimension of the ideological spectrum (Nicholson et. al, 2018). While the two-party system is a relatively simplified political model, multiparty systems are more complex.

The main goal of the thesis is to explore the consequences of political shifts on the economy, particularly on the public sector. Therefore, narrowing down the research area to the modelling of two-party systems provides the ability to concentrate on the power shifts and their economic impacts, as well as the policy modifications based on changes in the electoral will. Although the key model discussed in later chapters is based mainly on the two-party system assumption, the model extends beyond the topic of two-party systems, as it provides a macroeconomic model of public sector evolution in relation with political changes and incorporates various aspects of the political space, such as coalitions.

3. THE MODEL OF PUBLIC SECTOR EVOLUTION AS A REACTION TO VOTER OUTCOMES

3.1 Aim of the chapter and connection to the other chapters

The *theoretical consideration* chapter discussed and summarised selected existing economic theories and models from the previous literature regarding the topics of public sector development, political and economic coordination, election and voter preferences and PBC theory. While political drivers of the public sector are one of the most widely discussed issues in 21st-century economic research, the dynamic view of public sector reforms and their evolution based on the interconnection of political and economic markets are topics that have not often been tackled.

This doctoral thesis will attempt to answer the following questions: What is known about the changes in political power and the direction of public sector transformation and its evolution over the long term? Do the political systems and their design lead to certain reforms in the public sector? What is the role of the electorate in this process? How are election results related to government policies? Is the relationship between voters' preferences and policy reforms causal? What lessons can be derived from economic theory, and how can they be used to explain the interdependency between political decisions, voting and public sector changes? This thesis aims to extend the research in this field and create an economic model that explains how political power changes are connected to public sector restructuring activities, as well as the factors that influence this connection. For this purpose, I develop a macroeconomic model that gives insight into public sector evolution when governments of different ideologies come to power.

Given the complexity of the subject and the diverse nature of reforms and policies associated with the public sector, the scope of the thesis is narrowed. **I explicitly focus on public and private production development** and how the ratio between them changes as governments change. Observing and modelling public and private production represents a fundamental approach taken in previous theoretical research of economics. Throughout economic history, theories and models connecting the state and state-related activities in terms of production functions have been well-developed. The "political shock" generated by using this knowledge and applying a new dimension provides an opportunity for this thesis to derive profound new findings and implications.

3.2 The modelling approach and idea

In this section, I explain the main setup of the model and the initial intuitive idea, which will be mathematically formulated in later sections. As stated in

previous sections, the aim of the model is to connect voter preferences and reactions to policies, electoral cycles and public sector reforms. Economic models provide important insights but often have limited value for generating policy advice. Predicting economic outcomes is difficult due to the large volume of external factors, such as military interventions, large scale disasters and pandemics, which shape and influence policy (Frey and Schneider, 1978). However, modelling and understanding some of the actions and reactions of main players in relation to political-economic relationships helps policy advisors and economists derive a set of measures that governments should adopt in certain situations to reach particular outcomes (Frey and Schneider, 1978).

The previous literature has provided a well-established basis for integrating the economic and political sectors of society (Henning et al., 2008; Batey and Friedrich, 2000; Burstein, 2003), and the development of public choice literature (Buchanan and Tullock, 1962; Mueller, 2003) has renewed interest in this direction. A huge theoretical and empirical debate exists in the research on the inflation-unemployment trade-off (Phillips, 1958). Other models have investigated restrictions on decision-makers and the political business cycle (Hibbs, 1977; Nordhaus, 1975).

The model formulated in this thesis is not a direct extension of the traditional public choice literature (Downs, 1957; Buchanan and Tullock, 1962; Arrow, 2012; Mueller, 2003; Niskanen, 1998; Frey and Schneider, 1978; Frey and Lau, 1968; Lau and Frey, 1971). **The aim of the model is not to reshape public choice theory but to consider the partisan aims of politicians who attempt to realise their ideologically based policies until the loss of elections.**

This thesis provides an analysis of political institutions and the behaviour of government, political parties, the electorate and other interest groups. However, **the model formulated in the thesis is explicitly focused on reform sequence.** The economic literature on reform sequence in transition economies is rich (Barlow and Radulescu, 2005; Roland, 2002; Genberg, 1991). However, relatively less is researched on the reform sequence in stable political platforms, where the reforms are due to changes in the political ideology of the political party in power without major political transformations (e.g. revolutions, wars, a complete change of the political regime and et.). Institutional changes have been pointed out as a driving force of governance reforms (Kukhlammann, 2009), but the literature on reform sequence is not integrated with voters' preferences and electoral decisions. Reform sequence in this thesis is defined as a series of public sector reforms or the order which they follow each other. I explicitly focus on public sector reforms that are related to the increase or the decrease of public production.

The model constructed in this thesis represents a political-economy model. Politico-economic models, often referred to as political business-cycle models, investigate the interactions between economy and politics by studying the behaviour of interest groups (Frey and Schneider, 1978; Frey and Lau, 1968; Lau and Frey, 1971). Such models are often a simplification of reality, but they still provide useful insights into certain processes and can be

extended. **The model described herein explicitly focuses on a circular political-economy system.** Therefore, I analyse the state of the economy that affects voters' electoral decisions, as well as governments that use economic policy instruments to impact the state of the economy.

The model constructed in this study is a **new theory** that uses the classical Keynesian economic structure to describe relationships between political changes of power and public sector transformation. I modelled the Keynesian framework to apply public finance analyses. In my work, the labour market is not explicitly modelled, and the equilibrium between "goods" and "money market" is assumed¹⁰. **I have chosen a Keynesian approach because of the research scope of this work.** The aim of my thesis is to model political and economic determinants of public policy and reforms, the interdependency between political and economic markets and the connection between the main players of these markets. **My purpose is to integrate the state into a macroeconomic model in the public finance literature where dominantly Keynesian types of models are used** (Musgrave, 2008; Stiglitz and Rosengard, 2015; Batey and Friedrich, 2000). Keynesian macroeconomic models explain the influence of state policies better than classical approaches (Barro, 1979; Blinder, 2008); classical models are market driven in which other coordination types are prevailing. **I used a Keynesian model because I specifically am interested in government policies and their effects.** Moreover, the Keynesian framework provides a solid basis for modelling the public sector and incorporates public management concepts better than general equilibrium and classical macro models (Hughes, 2012; Bornemann, 1976). Furthermore, the Keynesian framework provides an opportunity to connect PBC theory and public sector transformation through fiscal policy from the public choice perspective.

Questions that the Keynesian macroeconomic models answer are directly related to the research aims of my work. However, my research aims are different from those of Keynes. While Keynes explained the consequences of fiscal expansions by connecting IS and LM curves, I am interested in fiscal expansion and its determinants and consequences from a political economic point of view. As such, my primary task is to link Keynesian thinking with the political economy and election game, which allows me to explain political influence on the economy and economic drivers of political changes. In other words, my model is a novel version of the Keynesian macroeconomic model that incorporates political changes (election of a new political party) as a "shock" on the economy through changes in fiscal policy. **This is a unique framework from other settings, as I explicitly focus on understanding the "political shock", which is a result of a political and economic process, as well as voters' reaction to policy and government reaction to vote results.** My model explicitly focuses on the reform sequence.

¹⁰ In further developments of the model, the labour market could be also modelled (please see the chapter on future research recommendations).

In my model, I explicitly model the ratio between public and private production. This ratio better reflects the scarcity relationship between public and private production (or vice versa) than the share measure of public production in the overall economy or general government expenditure as a percent of GDP. An intensive discussion on the definition of public production exists. More supply-oriented definitions, underlying the measurement of state production in national accounting, are results of evaluating public production by factor costs. Demand-oriented concepts of public production, such as public goods, are usually used to detect which goods should be offered by private or public economic units. These demand-oriented definitions of public production are not within the scope of my model. In my model, I follow the definition of public production used in national accounting¹¹. I use this definition because reform activities need specific production—whether private or public. Public production in the context of this model is defined as goods and services, individual or public, produced by public economic units that belong to the government. Public production is different from government spending, which besides public production, covers other economic activities¹².

The model formulated in this thesis is dynamic, as it shows the sequence of the ratio (between public and private production) in different periods. However, the effect determination for the relevant period is static (explained further in section 3.5).

The model constructed in this thesis describes a two-party system, in which each party has a concrete ideological position. A two-party system was chosen as the underlying framework of the model because it provides the ability to observe how voters' preferences change to generate certain election outcomes. Moreover, the two-party system represents a typical political platform in many traditional western democracies (the UK, USA, etc.) and has been used in various similar theoretical setups as an initial step for modelling exercises (Swank, 1998; Dewan and Shepsle, 2008; Batey and Friedrich, 2000). While a two-party system was used as an initial framework for the basic model of this thesis, in later sub-chapters (3.11; 3.12), the model is further developed to address multi-party systems and derive respective implications. The model provides the opportunity to observe public sector development cycles even when a typical two-party system does not exist but when the coalition government in power or the government does not change. The model's main framework represents a case when political parties (two parties) differ in terms of views and thus support contrasting policies. Voters' have their own preferences on existing

¹¹ System of National Accounts (SNA)

¹² Government expenditures encompass the following economic transactions: intermediate consumption (i.e., goods and services that are consumed in a production process within the economic territory and during the accounting period), subsidies, property income, social benefits, other current expenditures (mainly current transfers) and capital expenditures (i.e., capital transfers and investments) and compensation of employees (SNA).

policies, and the change in their preferences leads to a change in election outcomes. This process is explained in detail below.

In the model, two parties are denoted as A and B. Political party A supports an increase in public production, while political party B favours a decrease in public production. There are two policy choices: “a” and “b”. Policy “a” is the one that favours increased public production, while policy “b” supports decreased public production.

Party A: Supports increased public production → Policy “a”
Party B: Supports decreased public production → Policy “b”

The volume of public and private production depends on which party is in power. Party A, which supports increased public production, implements policies that are closer to policy “a”. Party B, which supports decreased public production, implements policies closer to policy “b”.

In my model, I do not examine the decision process of the party in a specified moment, such as in a game theoretic approach¹³. Rather, I assume that party A and party B follow ideological ideas. Similar assumptions have been made in the previous literature (Frey, 1978; Frey and Schneider, 1978, 1981; Friedrich, 1976). This literature has been characterised by Price (1997) as “opportunisticly partisan”, in which political parties in power pursue ideological objectives where electoral constraints allow. Chrystal and Alt (1981) criticised the model by Frey and Schneider (Frey and Schneider, 1978, 1981), while Schultz (1985) and Price (1996a, 1996b) supported the model. Price (1997) explained that Frey and Schneider’s work was unjustly neglected.

Studies on voter behaviour (Kramer, 1971; Downs, 1957) have modelled voters’ choice between alternatives as a utility maximisation problem. Voters are sensitive towards the production of public and private goods and services. In my model, the marginal utility of voters decreases with higher public production, while the marginal utility of private production increases with lower private production¹⁴. Voters’ preferences on policies “a” and “b” change according to the amount of public and private goods produced. The electorate will vote for party A until policy “a” (implemented by party A) aligns with voter preferences and the volume of publicly produced goods does not oversize the private sector production with an amount that is unacceptable to voters. Similarly, voters support party B until policy “b” (implemented by party B)

¹³ A more game theoretical approach can be combined with the model in future research, providing a bridge to a more general stream of literature (please see the chapter on future research recommendations).

¹⁴ I do not mathematically define voters’ utility functions in my model. Utility functions can be introduced in the model in future research (please see the chapter on future research recommendations).

corresponds to their preferences and provides the favourable size of public production. At a certain point of development, a portion of voters who previously elected the party in favour of public production-increasing policies (Party A) realise they are losing too much private production and give their support to the opposition (Party B). After reaching a critical point in popularity, the switch in governments occurs, and the party in favour of increased private production/decreased public production (Party B) comes to power.

The same procedure is followed after the private production-supporting party (party B) takes power. Again, at a certain point of development, a portion of voters who previously elected the party in favour of public production-decreasing policies (party B) realise they are losing too much public production and given their support to the opposition (Party A). After reaching a critical point in popularity, the switch in government occurs again, and the party in favour of increased public production comes to power (Party A).

The changes in voter preferences described above and their effect on election outcomes are based on considerations from previous literature. My model is most similar to the one developed by Frey and Schneider (1978). For the purpose of their research, Frey and Schneider (1978) first separated the economy and politics, describing them using macroeconomic models and the election approach, respectively, and then combined them in one model. Frey and Schneider (1978) identified the interaction between political and economic markets as the central interest of their research. A similar approach is adopted in this thesis, and my model explicitly concentrates on the interaction of political and macroeconomic models. The work of Frey and Schneider (1978) assumed governments to possess the goal of remaining in power, to be re-elected and, at the same time, to put their political ideology into polity practice. These assumptions of government behaviour align with assumptions usually made in the public choice literature.

In my model, similar assumptions are adopted to describe government behaviour. My model assumes that political parties A and B implement policies “a” and “b”, which reflect ideological differences. Furthermore, policy “a” and policy “b” change according to the state of the economy and voters’ preferences. **My model differs from other mainstream public choice literature (Black, 1958; Buchanan and Tullock, 1962; Muller, 2003) as it deals with the sequence of reforms. Reforms in the model are ideologically driven,** and the governments follow the ideology as long as they are going to lose votes.

Theories on **reaction functions** (Jottier et al., 2012) explain that the preferences of political parties are partially the result of analyses of the outcomes of their actions. Reaction functions, ideological preference functions and economic conditions form policies that political parties propose before and after elections (Dewan and Shepsle, 2011). The voters’ reactions incorporated into my model are similar to the popularity function developed by Frey and Schneider (1978). However, while Frey and Schneider (1978) focused on economic variables, such as inflation, unemployment and per-capita consumption, **I explicitly con-**

centrate on voters' reactions to the policies related to changes in public production.

Popularity functions have been derived in many theoretical works and tested in various empirical settings (Lewis-Beck and Stegmaier, 2013). The main objective of previous studies has been to show how voters can influence the election process. However, studies investigating the impact of voters and thus the impact of election results on economic outcomes, as well as the role of political parties in power and opposition, have been scarce (Veiga and Veiga, 2004). Particularly, the interaction of the above-described processes with public sector reforms has received little attention.

My model fills this gap in the research and presents a novel perspective for connecting PBC models with public sector reform. Moreover, the model incorporates the endogenous nature of the government sector in relation to policy decisions. The endogeneity of government is often observed in situations when short-term policy effects are chosen over long-term ones to increase popularity and chances of re-election. As such, including this aspect of government behaviour improves the forecasting capabilities and accuracy of my model and provides better tools for constructing policy advice.

Similar thinking underlines various other models in economic theory. One of the most widely used theories on voters' behaviour, the median voter theorem, holds similar assumptions and explains that if voters' preferences are single-peaked, the package favoured by the median voter stands to win (Caplin and Nalebuff, 1991; Gerber and Lewis, 2004). As such, the simple majority rule requires the smallest possible majority being able to win the voting game (Barberà and Gerber, 2017; Muller, 1979).

Similar to the median voters' theorem, which was also used as a basis for the model of this thesis, the election outcome is dependent on an electorate that holds the middle ground of the policy and moves from supporting one party to another. The model of this thesis explains these movements in relation to voters' reaction to the level of public and private production. One of the best examples of voters' reactions to policy and changing voting behaviour according to the volume of the policy is derived through the model of "public as thermostat" by Soroka and Wlezien (2005) and Wlezien (1995). In this model, the electorate behaves as a thermostat and regulates policy in the desired range (in the case of this thesis, this is the desired range for the level of public and private production). For further information on theories regarding voters' preferences, please see section 2.5.3.

In sum, the process described above results in the cyclicity of changes in public sector reforms and the governance reaction to vote results. The volume of public production depends on the election results, while the election results depend on the changes in public production. Voters' reaction to policy creates the cyclicity in public production development. The model is further explained in the following sections.

3.3 The model's time structure

In this section, I explain the time structure underlying the model. I begin the chapter by explaining theories related to this topic in the existing literature and then relate them to this thesis and the model.

Two timing options of policy choice have been identified in the literature: pre-election politics, also known as the commitment period, and the post-election politics, also known as the no commitment period (Kogan et al., 2018; Gersen, 2011). Public production-increasing and/or -decreasing reforms are different before and after campaign periods.

Figure 9 explains governments' purpose of implementing policies for both pre and post-election periods. The governance period (the period between election I and election II) consists of two stages: stage 1 (pre-election) and stage 2 (post-election). In both stages, political parties act according to two drivers, the ideology and opportunistic aim (to be elected or be re-elected). However, the ratio between these two drivers changes.

Stage 1: the pre-election policy;
Stage 2: the post-election policy;

During the first stage (pre-election stage), political parties have higher flexibility in terms of shrinking or expanding the public sector compared to the second stage of the policy process (post-election stage). In the second stage (post-election), the ruling party observes voters' preferences and introduces economic policies accordingly. As political parties in power have already implemented the desired policy, the room for changes in the public production becomes smaller each year. As a result, policy "a" and policy "b" (explained in the previous chapter) have a decreasing tendency over time.

Public production increasing/decreasing policies are implemented with falling rate.

Voters' preferences are introduced in two categories: m and n , the public production-increasing and public production-decreasing reforms, respectively. These preferences influence both the pre-election and post-election stages. Election manifestos (first stage) of political parties are developed according to the political support of the electorate. Additionally, reforms that are implemented during the second stage reflect voters' preferences, which are observed to help the government remain in office during the next election period.

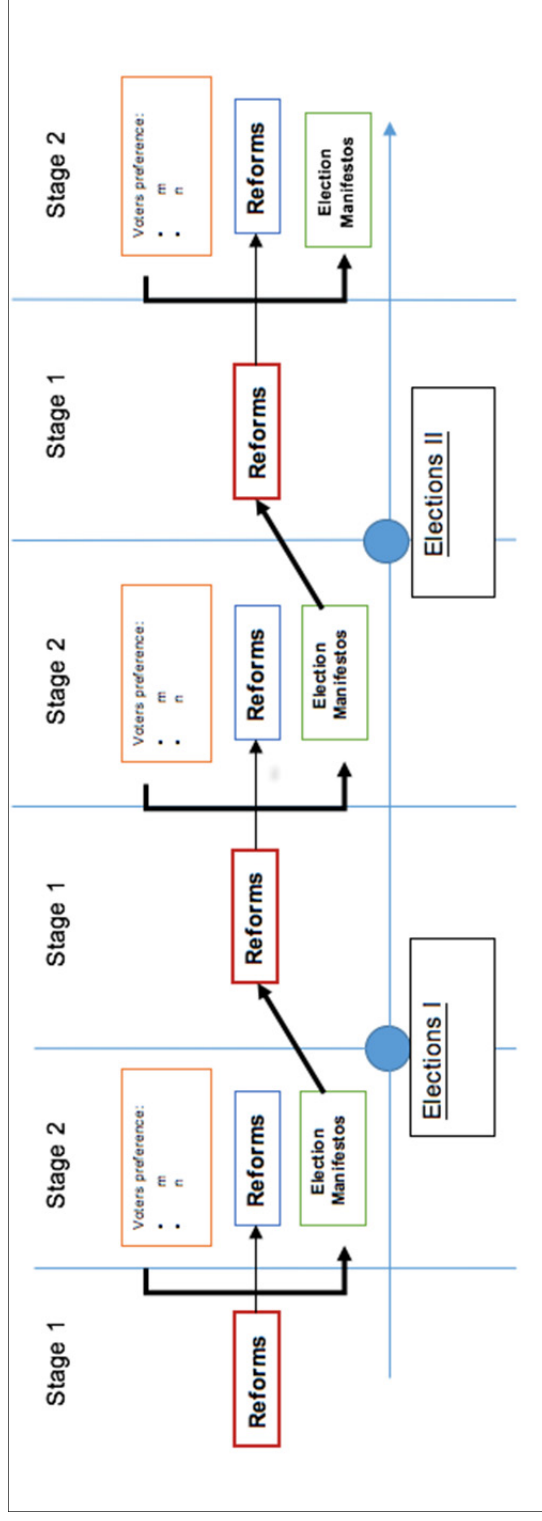


Figure 9: Scheme for the time structure of policy reaction to vote results
Source: Author's work

In my model, both timing options are considered and aggregated into a single policy. Therefore, policy “a” and policy “b” represent both pre-election (commitment) and post-election (no commitment) attitudes of the policy formation/implementation process. Policy “a” and policy “b” reflect partisan (ideological) values of political parties (pre-election phase). Moreover, the speed of implementing policy “a” and policy “b” after the election decreases in each period (post-election phase). In later sections, aspects of each policy timeframe and scenarios based on different policy stages will be analysed.

3.4 Simplified closed economy model

In this section, I introduce the model of governance reaction to vote results created by Friedrich and Ukrainski (2016). This model stands as the basis for the macroeconomic model developed in this study and corresponds to the idea of the model and timeframe introduced in previous sections. In the model by Friedrich and Ukrainski (2016), policy “a” and policy “b” are represented by the following mathematical formulations:

$$Y_A = KE_1 \times \left(1 - \frac{k}{t}\right), \text{ where } k < 1 \text{ and } t = 1, n; \quad (1)$$

$$Y_B = \frac{KR_1}{t}, \text{ where } t = 1, n; \quad (2)$$

Equation (1) shows the volume of public production when party A (supporting increased public sector) is in power. Y_A represents the level of public production in period 1. Value KE_1 and constant k , which is smaller than 1, determine the initial value of production. Output increases during every period, as the expression $\left(1 - \frac{k}{t}\right)$ increases when t increases, where t denotes time. However, the increase of public production occurs with a falling rate due to organisational resistance and scarcity of resources. Thus, Y_A represents the expansion of public production. Equation (2) shows the volume of private production when party B (supporting decreased public and increased private production) is in power. Y_B represents the reduction of public production. Value KR_1 provides the production value at period t when the party B (supporting decreased public production) comes into power. Value KR decreases in every period. Furthermore, the contraction of public production occurs with a falling rate due to organisational resistance and resources sunken into old structures.

The relationship between private and public production is defined as w (private production/public production ratio). The ratio w decreases under public production-expanding policies until W_B is reached and increases under public production-shrinking policies until W_A is reached. W_A and W_B represent the upper and lower boundaries of the ratio w . The expansion or contraction of public production depends on election results, as voters are sensitive towards the ratio. Voters support political party B (public production-decreasing party) when they experience the scarcity of privately produced goods and services. When the

ratio reaches the lower boundary W_B , voters feel adequate scarcity of privately produced goods and services that their marginal utility decreases; thus, they change their voting behaviour to support political party B (public production-decreasing party). Voters support political party A (public production-increasing party) when they experience the scarcity of provision of public services. When the ratio reaches the lower boundary W_A , voters perceive scarcity of the public sector, their marginal utility decreases, and they support political party A (public sector-increasing party). The distance between the relationship of W_A and W_B can be interpreted as a maximal adjustment gap between private and public production. Thus, a change in government occurs when the ratio w reaches the lower boundary W_B , and consequently, government changes when the upper limit value W_A is reached (Figure 10). For simplicity, in Figure 10, the private production is assumed to be constant. At the switch point, when the upper boundary (upper limit) W_A is reached, the public production-increasing function is changed by the falling function. Similarly, at the switch point when the lower boundary (lower limit) W_B is reached, the public production-decreasing function is changed by the increasing function. The new function of increase or decrease is determined by choosing the value of Y at the switch point, and the new value of Y is inserted into the ratio w for the next period. Thus, the model is dynamic, although each value for production is determined statically for a specific period.

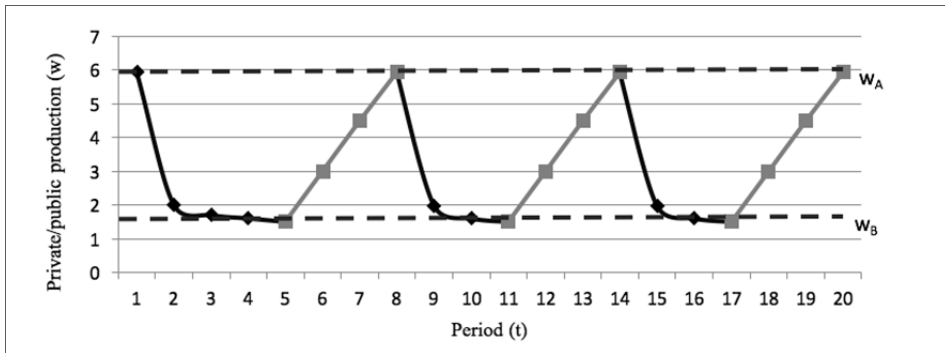


Figure 10: Switches of government

Source: Friedrich and Ukrainski (2016)

Equations 1 and 2 show that the political party in power follows ideological reform agendas as long as possible¹⁵. Parties in power might, after a longer period (when w comes to the level not tolerated by voters), lower their reform activities to smooth the development of ratio w . However, this is not effective enough to

¹⁵ Implementing policies according to ideology is possible until the development of the ratio w reaches a level that is not satisfactory for voters and as a result party in power changes.

prevent the loss of votes for various reasons (e.g., the party and the connected interest groups are not willing to follow, they block changes in administrations, the legal system cannot be changed [adapted] quickly enough). The party in power realises ideologically based reforms as long as possible. This is also related to the point that the party in power does not have a model of future development for the economy or external political situation, among others.

Therefore, the model is dynamic, as it shows the sequence of the ratio w in different periods using Equations (1) and (2). However, determination of the effect for the relevant period is static. In other words, the model formulated in this thesis uses a static approach to identify the effect of the ideology on reforms using a dynamic process, since the development of the ratio is analysed in different periods. More specifically, the model assumes that the political party in power is interested in the outcomes of the next period only and is influenced by political ideology. The model is formulated in this way because developing a control theoretical model or a final value model is not possible, as these models do not fit an ideologically driven government. Theoretically, if the decision-maker has other, nonlinear reactions, the model will end up in a chaotic situation with a nearly infinite number of solutions. This case corresponds to chaos theory, which deals with dynamic systems whose irregularities are governed by underlying patterns highly sensitive to initial conditions. The chaos theorem states that the present is a determining factor of the future, but the future cannot be determined by approximating all present factors, as many influential aspects are random (Rosser, 1990). Therefore, in the present model, I consider the effect of ideology using a static approach and determine the behaviour of government in each period separately. By doing so, I avoid the above-described chaos. However, the model is also dynamic because the development of ratio w is observed in different periods¹⁶.

My aim is to further develop the model of Friedrich and Ukrainski (2016) by formulating a microeconomic model in which public and private production activities are also presented. First, I concentrate on the goods and services market to explain the political-economic drivers and consequences of fiscal policy. Then, I link it to the money market, similar to Keynes, who incorporated these two markets (goods and services with money market). In the context of this thesis, fiscal policy is defined as a variation of government receipts and expenditures that have the purpose of influencing the national income (Batey and Friedrich, 2000). Fiscal policy impacts the fiscal planning of government offices and their economic activities and thus production related to public units. Furthermore, fiscal policy influences firms' activities and decisions in the private sector (Batey and Friedrich, 2000).

¹⁶ In future research, the basic equation can be formulated with respect to different reform activities as well as lags in effects, etc. (please view the chapter of future research recommendations).

The aim of my model is to develop a macroeconomic framework that models public production changes and their effects on private production development under changes in political power. Therefore, I modelled the ratio between public and private production under political cycles. I began building a model with a simplified closed economy scenario that isolates crucial concepts of total production output while omitting some factors to better illustrate the desired relationship between public and private production volumes. In later sections, these factors will be gradually reintroduced to the model. As noted in the previous section, the model adopts the static approach, and the ruling party's behaviour is determined in each period separately. However, the development of the ratio between public and private productions is observed and analysed dynamically.

The discussion of the total level of production output begins with the basic macroeconomic identity expressed in Equation (1). The determination of production output is described with the determinants of consumption and investment, where these two are decomposed into private and public production. For expositional purposes, the net exports are omitted from the equation, as the model represents the simplified closed economy case. However, exports and imports will be incorporated into the model in later stages.

$$y = c(y) + k(y) + AST \quad (1)$$

Equation (1) shows the total production function, where y refers to a total production output as a sum of private ($c(y) + k(y)$) and public (AST) production volumes. Here, c and k refer to the consumption and investment components (goods) of private production. AST is set exogenously by the government according to the preferred policy. For example, under government that supports increased public production, AST is expected to be higher compared to the situation under a government that favours increased private production. Therefore, AST is determined independently, outside the model by fiscal policy-makers. If we observe the change of total production based on Equation (1), we obtain the following:

$$dy = c \times dy + k \times dy + dAST \quad (2)$$

Where dy represents the change in total production, $c \times dy + k \times dy$ shows a change in private production, and $dAST$ is a change in public production. If we rearrange the expression, we obtain the following:

$$dy = \frac{dAST}{1-c-k} \quad (3)$$

Using Equation (3), the change in private production ($c \times dy + k \times dy$) can be formulated as follows:

$$c \times \frac{dAST}{1-c-k} + k \times \frac{dAST}{1-c-k} \quad (4)$$

Private and public production are given as follows:

$$\text{Private Production} = y_0 + \Delta \text{ Private Production} \quad (5)$$

$$\text{Public Production} = AST_0 + \Delta \text{ Public Production} \quad (6)$$

Where y_0 equals to initial private production, and AST_0 is the minimum (initial) public production. The relationship between private and public production is defined by the private production/public production ratio – w and is given in Equation (7) below.

$$w = \frac{\text{Private Production}}{\text{Public Production}} \quad (7)$$

$$w = \frac{y_0 + \Delta \text{ Private Production}}{AST_0 + \Delta \text{ Public Production}} \quad (8)$$

$$w = \frac{y_0 + c \times \frac{dAST}{1-c-k} + k \frac{dAST}{1-c-k}}{AST_0 + dAST} = \frac{(c+k) \times dAST + y_0 \times (1-c-k)}{AST_0 \times (1-c-k) + dAST(1-c-k)} \quad (9)$$

$$w = \frac{(c+k) \times dAST + y_0 \times (1-c-k)}{AST_0 \times (1-c-k) + dAST(1-c-k)} \quad (10)$$

$y_0 \times (1 - c - k)$ and $AST_0 \times (1 - c - k)$ are constant, therefore,

$$w = \frac{(c+k) \times dAST + \text{constant}_1}{\text{constant}_2 + dAST(1-c-k)} \quad (11)$$

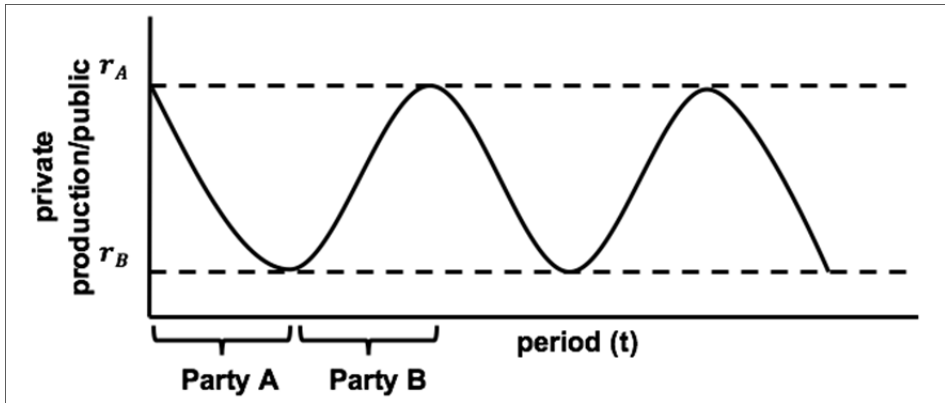


Figure 11: Development of the private production/public production ratio (w) under political parties A and B

Party A: Supports increased public sector → Policy “a” → $dAST > 0$

Party B: Supports decreased public sector → Policy “b” → $dAST < 0$

Source: Author’s work

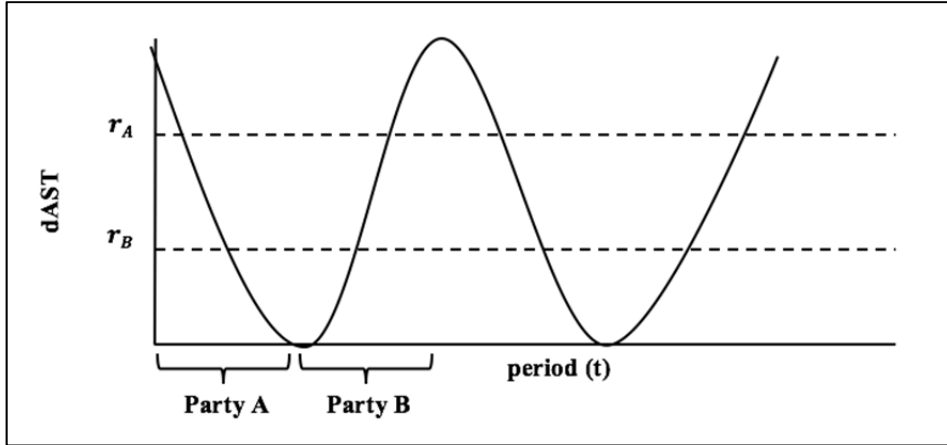


Figure 12: Development of the $dAST$ under political parties A and B

Party A: Supports increased public sector $\rightarrow$ Policy “a” $\rightarrow dAST > 0$

Party B: Supports decreased public sector $\rightarrow$ Policy “b” $\rightarrow dAST < 0$

Source: Author’s work

This modelling exercise presented aims to observe changes in the level of public production when different political parties are in power. More specifically, changes in the relationship between private and public production (production/public production ratio – w) are observable when public production volume ($dAST$) increases under political party A and decreases under political party B. The relationship between private and public production (production/public production ratio – w) is presented by Equation (10) and is simplified by Equation (11).

In a two-party system, in which parties do not have a flexible ideological positions, a change in voter preferences leads to a changed election outcome from party A to party B, where party A supports increased public production and party B supports the opposite.

The public production volume $dAST$, which is exogenously set by the government, reflects the ideological belief of the ruling party. Political party A provides policy “a”, the public production increasing policy and $dAST > 0$. Political party B provides policy “b”, the public production decreasing policy and $dAST < 0$.

Voters are sensitive to the volume of public and private production; they react to the production/public production ratio (w). Voters prefer party A until the production/public production ratio (w) reaches the lower limit, w_B . Voters prefer party B until the production/public production ratio (w) reaches the upper limit, w_A .

As such, the ratio (w) decreases under political party A (policy “a”) with increasing public production ($dAST > 0$) until w_B is reached. Consequently, a change in government occurs. The ratio (w) increases under political party B

(policy “b”) with decreasing public production ($dAST < 0$) until w_A is reached and the government changes.

Therefore, the key result of the simple closed economy model is the cyclicity of the development of the ratio between private and public production. Under political party A, the ratio decreases, and under political party B, the ratio increases. The dynamics of the ratio are cyclical due to voters’ sensitivity to the production ratio; voters elect the opposite party in power once the lower or upper boundary of the ratio is reached. The development of production/public production ratio w under the power of political party A and B is presented in Figure 11. The development of $dAST$ (the change in the public sector) along with production/public production ratio w under the power of political parties A and B is presented in the Figure 12.

The processes described above represent a simplified model; certain aspects and variables which play an important role and provide additional insight into the problem will be gradually introduced in later stages of the model’s development.

3.5 Introducing time periods

In the simple closed economy model, presented in the previous section, period (t) is a continuous time dimension in which election periods are not fixed. The government changes if the lower or upper boundaries of private/public production ratio w are reached. The framework of the model also provides an opportunity to introduce time periods. In this case, the change in public production, which is exogenously set by the ruling political party A or B, is given by Equations (1) and (2), respectively (based on Friedrich and Ukrainski, 2016). Change in public production under political party A, which supports increased public production (positive $dAST$), is given as follows:

$$dAST = AST_0 \times \left(1 - \frac{f}{t}\right), \text{ where } f < 1 \text{ and } t = 1, n; \quad (1)$$

Change in public production under political party B, which supports decreased public production (negative $dAST$), is given as follows:

$$dAST = \frac{AST_0}{t}, \text{ where } t = 1, n; \quad (2)$$

Equations (1) and (2) show that public production-increasing/decreasing policies are implemented with a falling rate. As such, $dAST$ in period n is higher than in period $n + 1$.

In this setting, elections are assumed (for simplicity) to be held in every four years (fixed election period). Therefore, scenarios of private/public production ratio development depend on how the government behaves in terms of policy implementation strategies. Particularly, the development of the ratio depends on

the size of $dAST$ —whether the party in power pushed forward public production-changing reforms quickly or slowly. Thus, different scenarios of policy strategy may emerge, as follows:

- **Scenario 1:** Political party A (party B) expands (shrinks) the public production with a falling rate, and the lower (upper) boundary of the public/private production ratio w is reached exactly on the fourth year. As a result, the government changes on election year (Figure 13).
- **Scenario 2:** Political party A (party B) expands (shrinks) the public production with a faster (than in scenario 1) falling rate, and the lower (upper) boundary of the private/public production ratio w is reached in shorter periods than the fixed election period (four years). As a result, on election year, the government changes (Figure 14).
- **Scenario 3:** Political party A (party B) expands (shrinks) the public production with a slower (than in scenario 1) falling rate, and the lower (upper) boundary of the private/public production ratio w is reached in longer periods than the fixed election period (four years). As a result, on the election year (fourth year), whether the party in power remains in office or a change in government occurs is unknown (Figure 15).

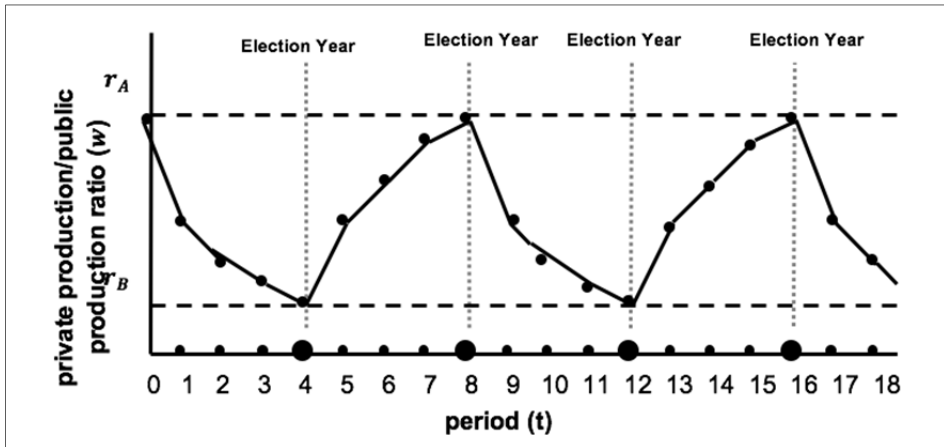


Figure 13: Development of the private production/public production ratio (w) under political parties A and B, scenario 1

Party A: Supports increased public sector → Policy “a” → $dAST > 0$

Party B: Supports decreased public sector → Policy “b” → $dAST < 0$

Source: Author’s work

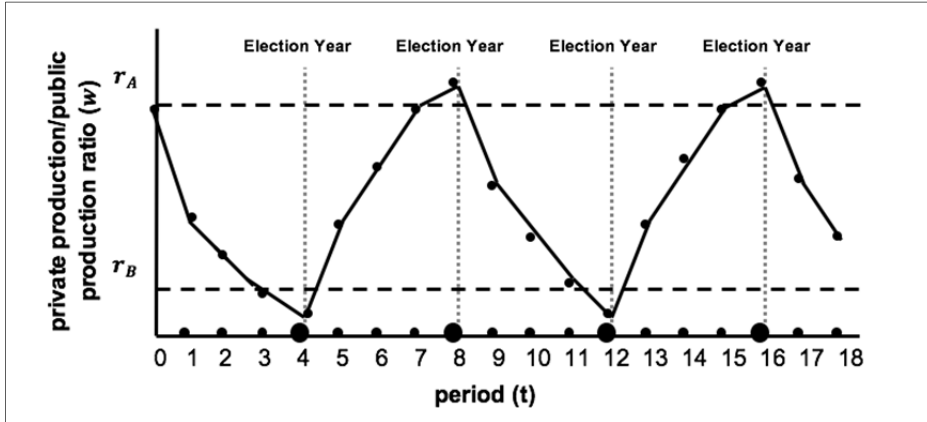


Figure 14: Development of the private production/public production ratio (w) under political parties A and B, scenario 2

Party A: Supports increased public sector $\rightarrow$ Policy “a” $\rightarrow dAST > 0$

Party B: Supports decreased public sector $\rightarrow$ Policy “b” $\rightarrow dAST < 0$

Source: Author’s work

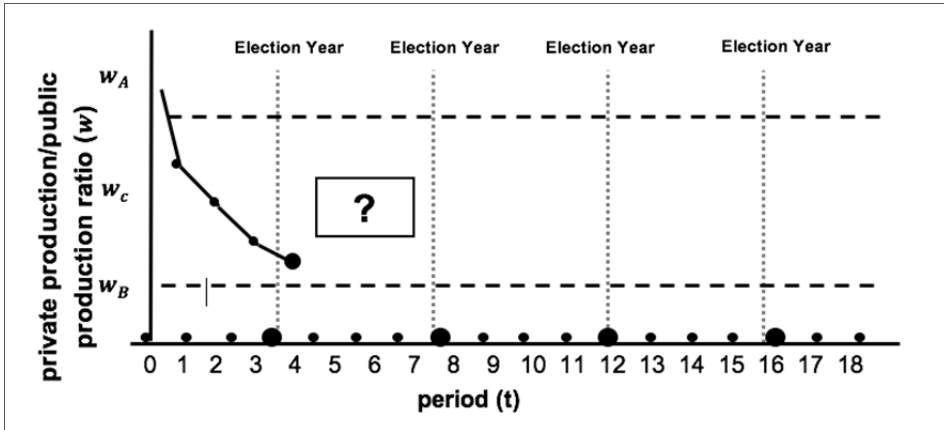


Figure 15: Development of the private production/public production ratio (w) under political parties A and B, scenario 3

Party A: Supports increased public sector $\rightarrow$ Policy “a” $\rightarrow dAST > 0$

Party B: Supports decreased public sector $\rightarrow$ Policy “b” $\rightarrow dAST < 0$

Source: Author’s work

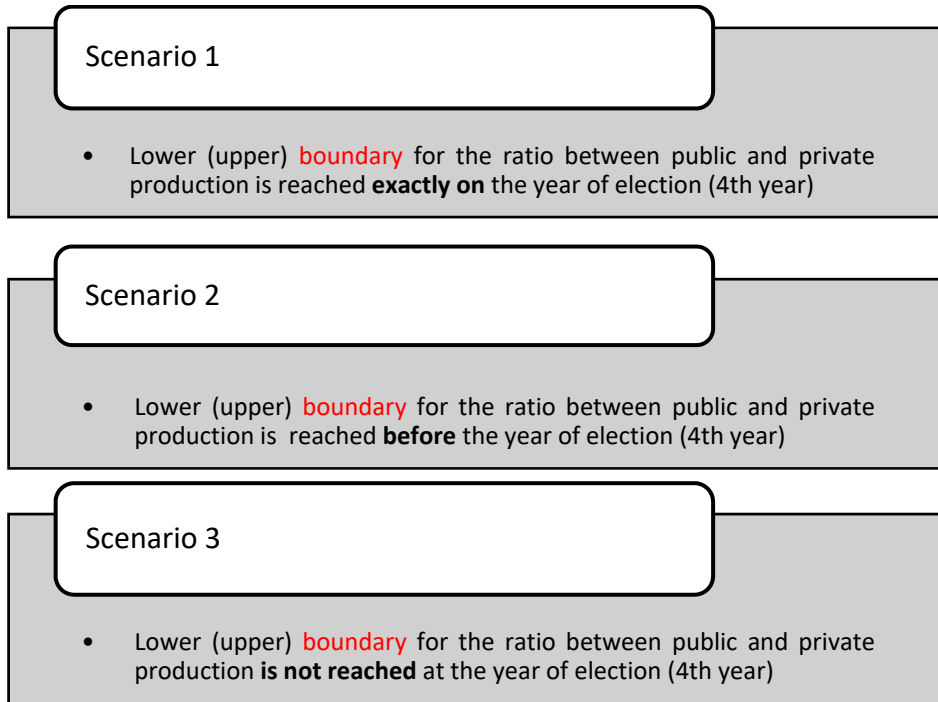


Figure 16: Possible scenarios for private/public production ratio development under fixed election period

While scenarios 1 and 2 are intuitive without additional assumptions, scenario 3 requires further explanation. In scenario 3, the ratio between private and public production at the election year (fourth year) is not at the critical level. As such, the election outcome defines further government action.

Voters are sensitive to the size of the public sector; thus, the election outcome depends on the level of the w ratio at the election year.

- If, at the year of election, the ratio w is high (low) enough to satisfy voters, then the party in power will remain in office for the next four years.
- If, at the year of election, the ratio w is not high (low) enough to satisfy voters, then the government changes for the next four years.

To further illustrate these two possibilities of development for scenario 3, an additional level of the ratio between private/public production, $w(c)$, is introduced. The $w(c)$ level of the ratio represents the middle point between the lower ($w(a)$) and upper ($w(b)$) boundaries of the public/private production development. Thus, two cases can be developed under scenario 3.

Case 1: On election year, the actual private/public production ratio is at point M (point N), which is higher (lower) than $w(c)$. The ratio w is high (low) enough, and voters are still in favour of decreasing (increasing) the ratio w . As a result,

the party in power, political party A (party B), remains in office for the next four years (Figure 17).

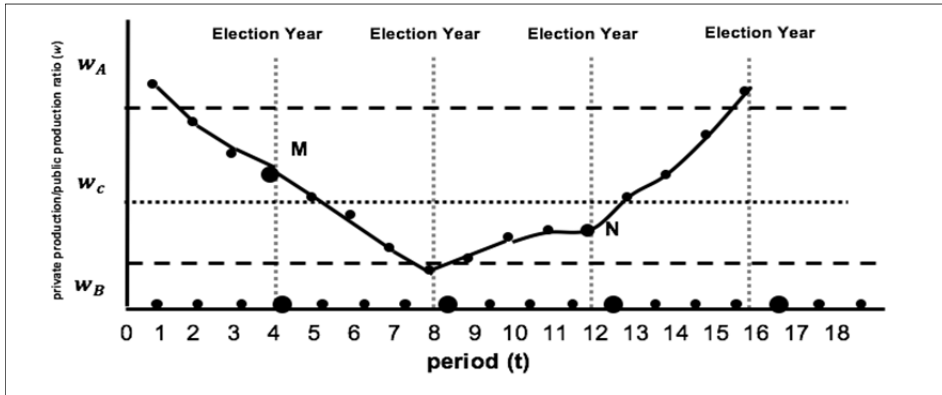


Figure 17: Development of the private production/public production ratio (w) under political parties A and B, scenario 3, case 1

Party A: Supports increased public sector $\rightarrow$ Policy “a” $\rightarrow dAST > 0$

Party B: Supports decreased public sector $\rightarrow$ Policy “b” $\rightarrow dAST < 0$

Source: Author’s work

Case 2: On election year, the actual private/public production ratio is at point M (point N), which is lower (higher) than $w(c)$. The ratio w is not high (low) enough, and voters are not in favour of decreasing (increasing) the ratio further. As a result, government changes, and instead of political party A (party B), political party B (party A) comes into power for the next four years (Figure 18).

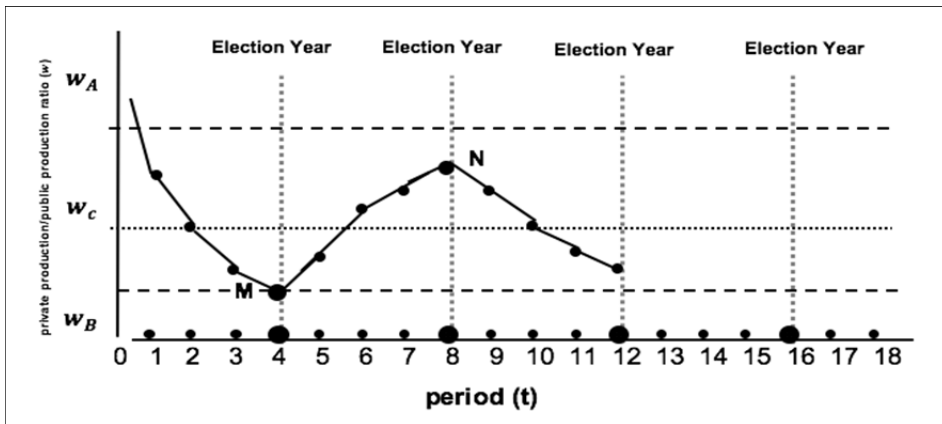


Figure 18: Development of the private production/public production ratio (w) under political parties A and B, scenario 3, case 2

Party A: Supports increased public sector $\rightarrow$ Policy “a” $\rightarrow dAST > 0$

Party B: Supports decreased public sector $\rightarrow$ Policy “b” $\rightarrow dAST < 0$

Source: Author’s work

3.6 The size of initial public production and the lower and upper boundaries

The size of the public production varies across countries and economies. To understand and illustrate the model better, the size of initial public production and its effects on the development of the ratio between private and public production are further discussed in this section. For illustrative purposes, I present different cases in which the initial public production, AST_0 , in the first period is given at different levels, AST_1 , AST_2 or AST_3 , where $AST_1 < AST_2 < AST_3$ (Figure 19). Then, the development of production ratios for the second period is observed. Note that one period is defined as four election years, where political party A (supporting public production increase) is in power in the first period, and political party B (supporting public production decrease) is in power in the second period. To develop constructive scenario analyses, the following additional assumptions are made:

1. Elections occur every four years.
2. Governments change every election.
3. While the initial size of public production, AST_0 , differs in all cases, to achieve comparable results, the decrease and/or increase in the volume of public production, $dAST$, is constant in all scenarios.
4. The initial size of private production (% of total production) is the same in all scenarios.
5. The level of private production depends on the initial private production and the change in public production, $dAST$. Given that these two are identical in all cases (see assumptions 3 and 4), the change in private production is also the same in all scenarios.

6. Scenarios	Initial public production
1	AST_1
2	AST_2
3	AST_3

Note: $AST_1 < AST_2 < AST_3$

Figure 19: Scenarios based on the size of initial public production

Different levels of the initial size of public production (AST_0) in the first period affect the total public production, as well as the total production. However, the dynamic of these two stays the same (Figure 20). Higher AST_0 results in higher total production, but regarding the ratio between public and private production, the effect is opposite. $dAST$ is constant in all cases where AST_0 is lower, the ratio between public and private production is higher. Where AST_0 is higher (50%), the opposite is true (Figure 20a).

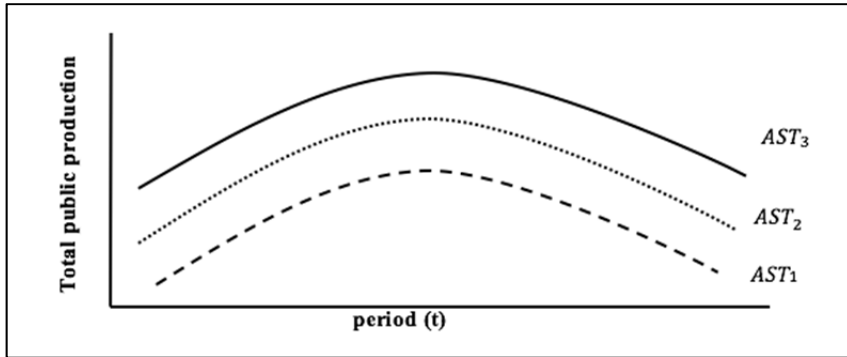


Figure 20: Total public production when AST_0 is on different levels

Source: Author's work

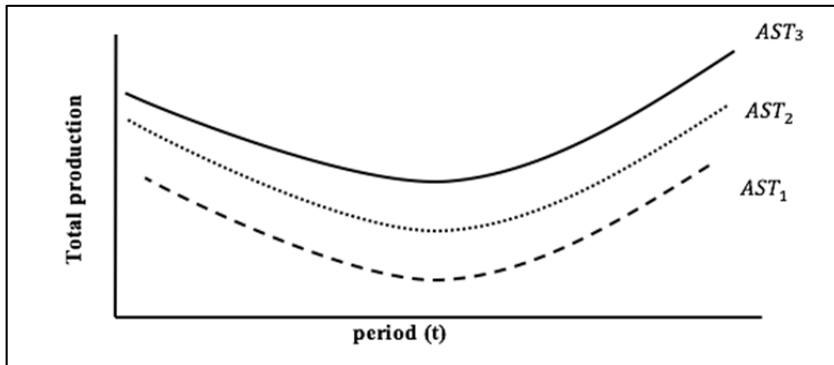


Figure 20a: Total production when AST_0 is on different levels

Source: Author's work

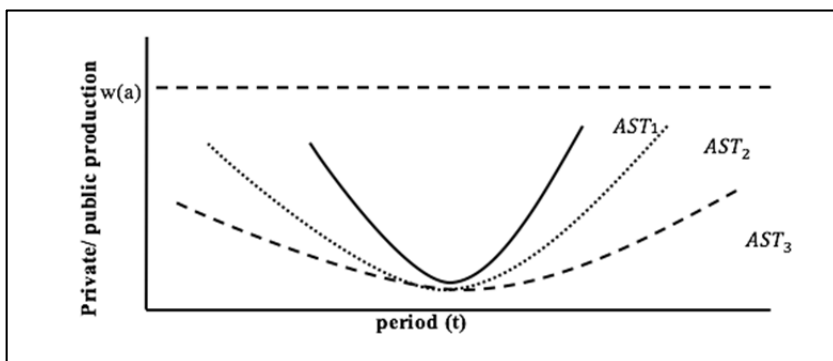


Figure 20b: The ratio between public and private production when AST_0 is on different levels

Source: Author's work

Introducing the upper and lower boundaries of the ratio between private and public production (w) in the model creates the ability to observe and understand relationships between the variables and underlying processes better. Throughout history, various ideological and political regimes, as well as economic and social institutions, were (are) present in different countries (Feldman, 2013). This led to distinctive societal preferences regarding the size of public production (Boix, 2001). For example, despite major privatisation in early the 1990s in some post-Soviet countries, the size of public production remained high as a result of the electorate's tolerance towards nationalised industries (Taylor and Kelly, 2006.). As voters' tendency to react to different levels of upper w_A and lower w_B boundaries of public production differs, the development of the ratio also varies in different settings.

Figure 21 presents the effects of different boundaries on the public/private production ratio. If the boundaries are tighter (lower w_A and higher w_B), then critical points are reached more quickly, and the change of government occurs in a shorter period. If boundaries are wider (higher w_A and lower w_B), the change of government is delayed, and governance periods are longer. In the case presented above, government behaviour in terms of implementing the policy is assumed to be constant; under both situations, tighter and wider boundaries, the ruling party in power implements the desired policy at a constant pace. Typically, governments also react to the levels of boundaries. Under tighter boundaries (lower w_A and higher w_B), governments may pass less-radical changes to reach critical points of the ratio over a longer period, thus slowing the speed of change of the ratio w . Under wider boundaries (higher w_A and lower w_B), governments may decrease or increase the ratio w more quickly by passing radical policies (Figure 21, Figure 22).

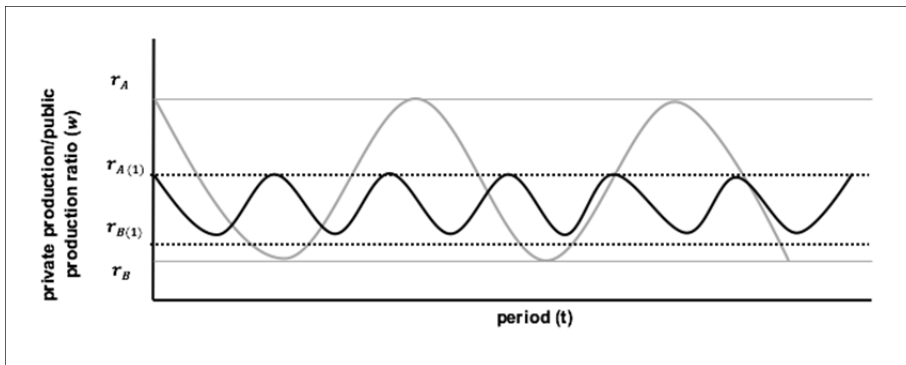


Figure 21: Development of ratio (w) under different upper/lower boundaries
Source: Author's work

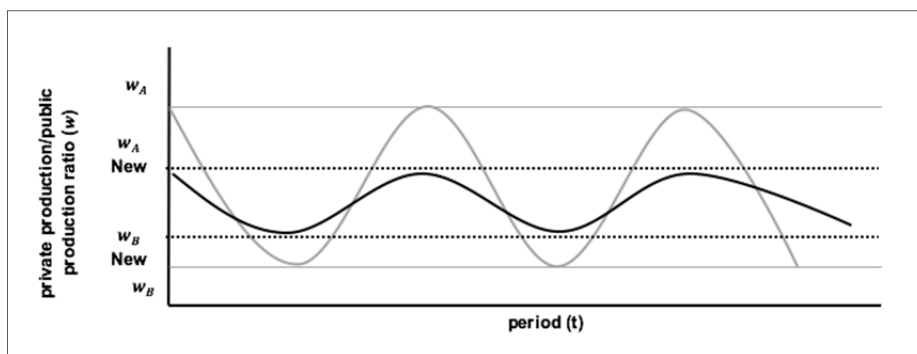


Figure 22: Government's reaction to tighter upper and lower boundaries
Source: Author's work

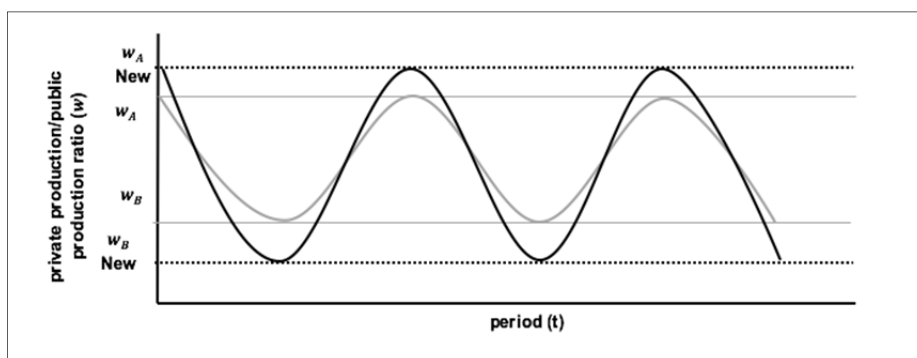


Figure 23: Government's reaction to wider upper and lower boundaries
Source: Author's work

3.7 Introducing investment in the model

The simple closed economy model discussed in the previous sub-chapters has shown the development of a mix of private-public production under partisan governments supporting either increased or decreased public production. The results of the model have indicated that under governments that support increased public production, the ratio w (private/public production) decreases. In contrast, under governments supporting decreased public production, the ratio increases. The evolution of the relative size of public production has a cyclical pattern, as voters are sensitive to the ratio between public and private production.

The model discussed in the previous section has a simplified form in which the total production function depends only on the investment and consumption components and the public and private sector productions are separately identified. Here, the public production is exogenously determined outside of the

model by policy-makers and is influenced by the ideological position of the ruling party. In this section, I show how the ratio between public and private production is affected by changes in the investment level. Thus, I introduce an investment function to the model, defined as investment J . The aggregate demand (total production) comprises consumption demand ($c(y)$), investment demand (J) and government expenditure on goods and services (AST). Consumption demand is a function of disposable income. In this section, I present a model in which taxation by the government is not incorporated, so $c(y) = c \times y$. Therefore, total production is given as follows:

$$y = c(y) + J + AST \quad (1)$$

Two types of investment are distinguished in the literature: autonomous investment¹⁷ and induced investment¹⁸ (Burda and Wyplosz, 2013; Hoover, 2011; Barro, 2007). Investment J , introduced in the model, is an investment function that describes both types of investments: the investment dependent on interest rate i and investment L , which is an autonomous investment independent from income and interest rate (Equation 2)¹⁹.

$$J = L - \theta i \quad (2)$$

Therefore, the following equation factors the total production:

$$y = c \times y + L - \theta i + AST \quad (3)$$

Where L is an autonomous investment—that is, independent of income and rate of interest; AST is government expenditure on goods and services; c is the marginal propensity to consume; and θi shows the sensitivity of investment to changes in the rate of interest. From Equation (3), the following is derived:

¹⁷ Autonomous investment is not dependent on national income; it is the expenditure on capital formation and is independent from a change in income, the rate of interest and the rate of profit (Burda and Wyplosz, 2013; Hoover, 2011; Barro, 2007). Autonomous investment is often referred to as the income-inelastic investment. It depends on the expected rate of return, cost of borrowing funds and any new investments that occur. Through the expected rate of return, it might be related to turnover and demand (Burda and Wyplosz, 2013; Hoover, 2011; Barro, 2007).

¹⁸ Induced investment depends on the rate of interest (Burda and Wyplosz, 2013; Hoover, 2011; Barro, 2007). With a given level of income, a higher rate of interest reduces the investment demand, and a lower rate of interest leads to more investment; that is, investment is negatively related to the rate of interest (Burda and Wyplosz, 2013; Hoover, 2011; Barro, 2007). Furthermore, the relationship between the national income and the induced investment is positive. As such, induced investment is often referred to as an income-elastic investment.

¹⁹ To capture the effects of interest rate movements on public production, an additional equation can be introduced to the model, in which the interest payments depend on a capital stock of debts minus repayments. Such an equation can be considered in future research.

$$y = \frac{1}{1-c}(L - \theta i) + \frac{1}{1-c}AST \quad (4)$$

The above equation describes the investment-savings (IS) curve, and $\frac{1}{1-c}$ is an income multiplier. If Equation 4 is utilised in Equation 3, the following is obtained:

$$y = c \times \left(\frac{1}{1-c}(L - \theta i) + \frac{1}{1-c}AST \right) + L - \theta i + AST \quad (5)$$

$$dy = c \times \left(\frac{1}{1-c}(dL - \theta di) + \frac{1}{1-c}dAST \right) + dL - \theta di + dAST \quad (6)$$

As such, the change in private production equals the following:

$$\Delta \text{ Private production} = c \times \left(\frac{1}{1-c}(dL - \theta di) + \frac{1}{1-c}dAST \right) + dL - \theta di \quad (7)$$

The change in public production is given by $dAST$. As stated in section 3.5, the ratio (w) between private and public production is given as follows:

$$w = \frac{y_0 + \Delta \text{ Private Production}}{AST_0 + \Delta \text{ Public Production}} \quad (8)$$

Where y_0 represents the initial private production, and AST_0 refers to the initial public production (for further details, please see section 3.5). Based on Equations (7) and (8) in the model in which investment function (Equation 2) is introduced, the ratio between private and public production is given as follows:

$$w = \frac{y_0 + c \times \left(\frac{1}{1-c}(dL - \theta di) + \frac{1}{1-c}dAST \right) + dL - \theta di}{AST_0 + dAST} \quad (9)$$

The impact of changes in the investment level and of interest rate on the ratio w are presented in Figures 26 and 27, respectively. An increase in the investment level (J) has a positive impact on the ratio between private and public production, driving it upwards. When the investment level J decreases, the ratio w decreases (Figure 24). The opposite is true of the interest rate, as the interest rate has an inverse relationship with the investment. Therefore, an increase in the interest rate negatively affects the ratio w , driving it downwards (Figure 25). When interest rate i increases, the ratio w shifts down; when the interest rate i decreases, the ratio w increases.

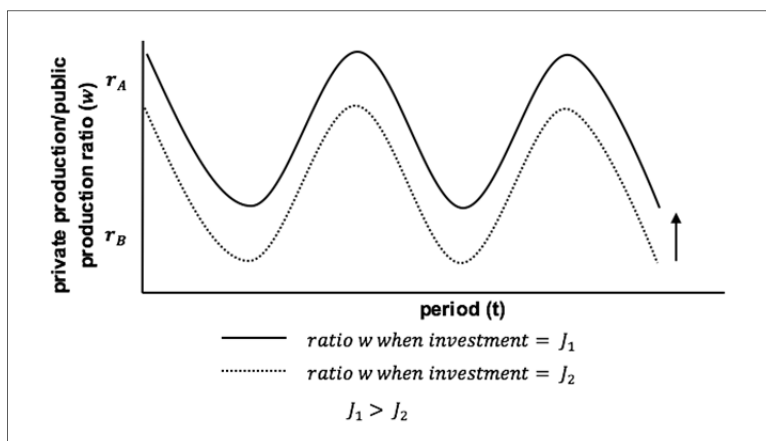


Figure 24: Impact of an increase in investment J on ratio (w)

Source: Author's work

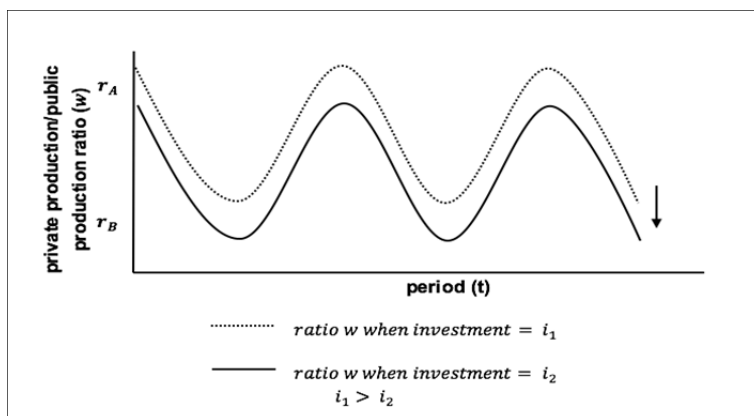


Figure 25: Impact of an increase in interest rate i on ratio (w)

Increase in the interest rate drives the private/public production ratio down.

Source: Author's work

The above-stated relationships between ratio w , interest rate and investment may result in certain government actions. The ruling party may adjust ratio w according to changes in the investment level. In other situations, the ruling party may not take action, instead continuing to implement policies as if there were no change in indicators (J and i). As the behaviour of government is largely influenced by its ideological beliefs and opportunistic aims (Alesina et al., 1997), public production-increasing governments may act differently from public production-decreasing governments (Garrett, 1998; Chiou and Rothenberg, 2003). Figure 26 describes government actions in response to changes in the investment level.

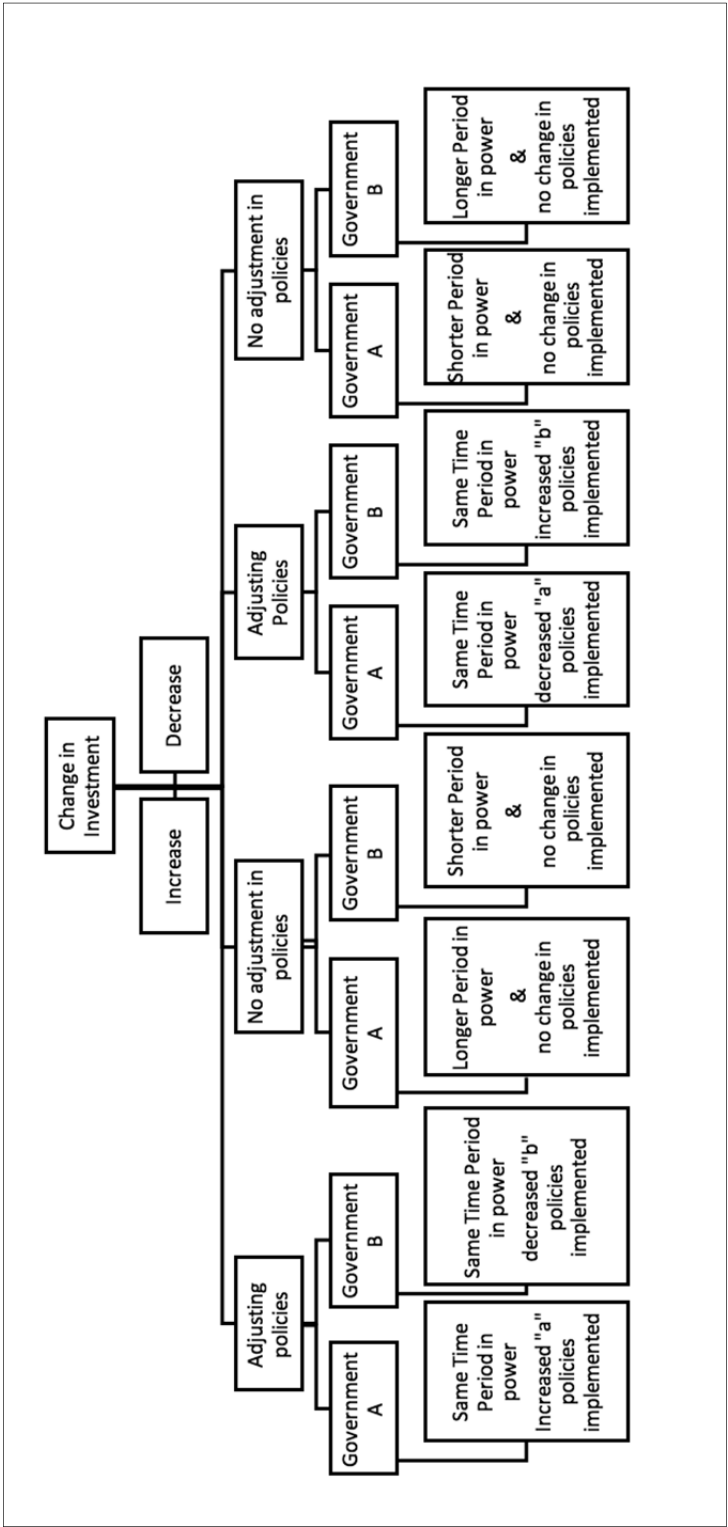


Figure 26: Potential government actions in response to changes in investment and corresponding resulting scenarios²⁰
 Source: Author's work

²⁰ Ruling parties in power have two options:

1. React to the change in investment and adjust policies
2. Take no action, use the advantage of the effects of the changed investment level on the economy and stay in power longer

The motivation of a public production-increasing government not to adjust policies according to changes in investment level is as follows: the higher the investment, the higher the volume of private production, and the higher private production, the higher ratio w . Thus, if investment increases, the time period the public production-supporting government is in power increases; when the ratio w increases (w is higher), then the government in power is provided with an additional period for critical lower boundary $w(a)$ to be reached.

The opposite effect is true for private production-supporting governments. When investment level J is higher, the private production volume is higher; thus, the critical upper boundary $w(b)$ is reached faster (in a smaller number of periods), and private production-supporting governments have reduced periods in power. If investment level J decreases, then the volume of private production decreases. The smaller the private production, the smaller the ratio w . Thus, if investment decreases, the time period the public production-supporting government is in power is reduced; the critical lower boundary $w(a)$ is reached in a shorter time, and the public production-supporting government has less time in power.

If investment level J decreases while the private production-supporting government is in power, then the government has an additional period to reach the upper boundary $w(b)$ and stay in power longer. Thus, an increase in investment level J indirectly favours governments that support large public production and indirectly harms the ones that do not. However, an increase in investment results in a higher private production, which is a private production-supporting government's ideological desire.

Therefore, the idea that governments may not adjust policies according to changes in investment levels is not fully rational (here, government's rationality is defined as the opportunistic will to remain in office longer). Instead, ruling parties often face a choice between their partisan and opportunistic desires. A high ratio w is desirable for government that supports the decrease of public production volume. Thus, if an increase in investment level J results in an increase in the ratio w , the intervention of government in economic activities is smaller (implementing less-radical policies, passing new rules, designing new reforms that effect the mix of public/private production). The time period in power for government that supports small public production might remain the same when the decrease of public production is less obvious. Therefore, over the long term, as voters are sensitive to changes, the government that supports a decrease in public production volume may be elected for more than one period. The opposite effect is evident if a government supporting increase in public production is in power. To remain in office, the public production-supporting government can implement more public production-favouring policies and reforms. If the investment level J decreases, then the ratio w is smaller. As a result, the government that supports increased public production implements less-radical policies and remains in office for the same period of time.

The model describes the mechanism of how changes in the ratio w , caused by changes in investment levels, affect the length of the period in power for

governments with different partisan backgrounds. However, as every government contains individual economic and electoral preferences based on both partisan and opportunistic needs, their behaviour reflects a mix of the theories described above.

3.8 Introducing money market in the model

In this section, I introduce money market into the model (Figure 27).

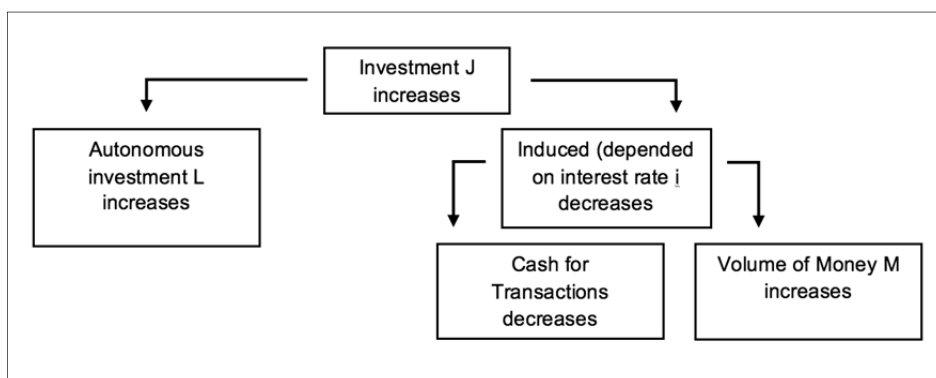


Figure 27: Investment dependency on interest rate and connection to money market
Source: Author's work

The total demand function for money is given as follows:

$$\frac{M}{P} = \beta y - hi \quad (1)$$

Real money balances are given by M/P , where M stands for nominal volume of money and p for price level. M is set by the central bank of a country and is assumed to remain constant for a period. Furthermore, the price level (P) is assumed to remain constant. The total demand function for money (M) can be obtained by summing the transaction demand for money, M_1 , and the speculative demand for money, M_2 (Pearce and Hoover, 1995). M_1 is the total transaction demand for money dependent on income y , which shows the total income/production in the economy, or the cash for transactions dependent on income y . β is a parameter that shows how much demand for real money balances increases when the level of income rises. M_2 is the speculative demand for money dependent on interest rate i . Parameter h represents how much demand for real money balances decreases when the rate of interest increases. Therefore,

Solving the equation for interest rate, the following is obtained:

$$i = \frac{1}{h} (\beta y - \frac{M}{P}) \quad (2)$$

Recalling from the previous chapter,

$$y = c * y + L - \theta i + AST \quad (3)$$

By using Equations (2) and (3), a total production function that incorporates money market elements can be derived. The following algebraic simplifications are performed to achieve this goal:

$$\begin{aligned}
 y &= c \times y + L - \theta \left(\frac{1}{h} \times \left(\beta y - \frac{M}{P} \right) \right) + AST \\
 y &= c \times y + L - \frac{\theta}{h} \times \left(\beta y - \frac{M}{P} \right) + AST \\
 y - c \times y + \frac{\theta \beta}{h} \times y &= \frac{\theta}{hp} M + L + AST \\
 y \left(1 - c + \frac{\theta \beta}{h} \right) &= \frac{\theta}{hp} M + L + AST \\
 y &= \frac{1}{1 - c + \frac{\theta \beta}{h}} \left(\frac{\theta}{hp} M + L \right) + \frac{1}{1 - c + \frac{\theta \beta}{h}} AST
 \end{aligned}$$

As such, the total production function that also covers money market and depends on the total demand on money and money market parameters is given by the following equations:

$$y = c \times \left(\frac{1}{1 - c + \frac{\theta \beta}{h}} \left(\frac{\theta}{hp} M + L \right) + \frac{1}{1 - c + \frac{\theta \beta}{h}} AST \right) - \frac{\theta \beta}{h} \times \left(\frac{1}{1 - c + \frac{\theta \beta}{h}} \left(\frac{\theta}{hp} M + L \right) + \frac{1}{1 - c + \frac{\theta \beta}{h}} AST \right) + \frac{\theta}{hp} M + L + AST \quad (7)$$

Accordingly, the change in total production equals

$$\begin{aligned}
 dy &= c \times \left(\frac{1}{1 - c + \frac{\theta \beta}{h}} \left(\frac{\theta}{hp} dM + dL \right) + \frac{1}{1 - c + \frac{\theta \beta}{h}} dAST \right) - \frac{\theta \beta}{h} \times \left(\frac{1}{1 - c + \frac{\theta \beta}{h}} \left(\frac{\theta}{hp} dM + \right. \right. \\
 &\quad \left. \left. dL \right) + \frac{1}{1 - c + \frac{\theta \beta}{h}} dAST \right) + \frac{\theta}{hp} dM + dL + dAST \quad (8)
 \end{aligned}$$

The change in private production is as follows:

$$c \times \left(\frac{1}{1-c+\frac{\theta\beta}{h}} \left(\frac{\theta}{hp} dM + dL \right) + \frac{1}{1-c+\frac{\theta\beta}{h}} dAST \right) - \frac{\theta\beta}{h} \times \left(\frac{1}{1-c+\frac{\theta\beta}{h}} \left(\frac{\theta}{hp} dM + dL \right) + \frac{1}{1-c+\frac{\theta\beta}{h}} dAST \right) + \frac{\theta}{hp} dM + dL \quad (9)$$

The change in public production is given by $dAST$. As stated in previous sections, the ratio (w) between private and public production is given as follows:

$$w = \frac{y_0 + \Delta \text{ Private Production}}{AST_0 + \Delta \text{ Public Production}} \quad (10)$$

Where y_0 represents the initial private production and AST_0 refers to the initial public production. Based on Equations (9) and (10) in the model where money market (Equation 4) is introduced, the ratio between private and public production is given as follows:

$$w = \frac{y_0 + c \times \left(\frac{\frac{\theta}{hp} dM + dL}{1-c+\frac{\theta\beta}{h}} + \frac{dAST}{1-c+\frac{\theta\beta}{h}} \right) - \frac{\theta\beta}{h} \times \left(\frac{\frac{\theta}{hp} dM + dL}{1-c+\frac{\theta\beta}{h}} + \frac{dAST}{1-c+\frac{\theta\beta}{h}} \right) + \frac{\theta}{hp} dM + dL}{AST_0 + dAST}$$

The impact of changes in the volume of money on the ratio between private and public production (w) is presented in Figure 28. An increase in the volume of money (M) has a positive impact on the ratio w , driving it upwards. Conversely, when the volume of money M decreases, the ratio w shifts down (Figure 28). Governments' actions and reactions to changes in money market are similar to government responses to changes in investment. For further details, please see the previous sections and Figure 26.

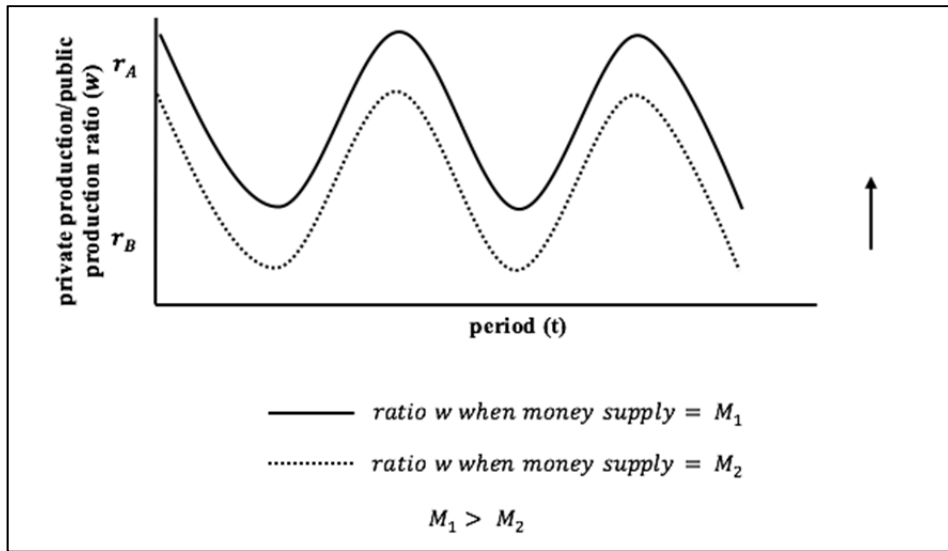


Figure 28: Impact of an increase in volume of money M on ratio (w)
 Increase in total volume of money drives the private/public production ratio up.
 Source: Author's work

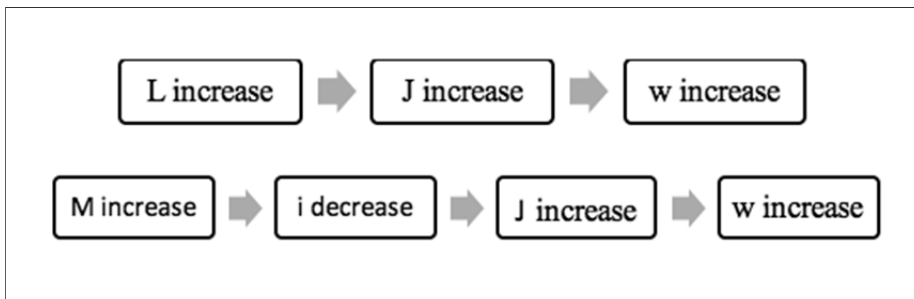


Figure 29: Connection between the private/public production ratio (w), investment (L and J), interest rate (i) and volume of money (M)
 Source: Author's work

3.9 Introducing taxation

In the previous sections, the aggregate demand was described as a function of consumption demand, investment demand and government expenditure on goods and services, as follows:

$$y = c(y) + J + AST \quad (1)$$

Where consumption demand is a function of disposable income, $c(y) = c \times y$, and taxation is not included. In this chapter, I introduce taxes into the model but do not incorporate it with money market.

Therefore, disposable income is the level of income minus taxes plus transfers (Equation 2).

$$c(y) = c(y - T + Tr) \quad (2)$$

Where T stands for tax revenue, given by Equation (3), and Tr is transfers.

$$T = ty \quad (3)$$

Where t stands for tax rate. Based on previous sections, the investment function is given as follows:

$$J = L - \theta i \quad (4)$$

Using Equations (1), (2) and (4), a total production function that incorporates taxes and transfers can be derived. The following algebraic simplifications were performed to achieve this goal:

$$y = c(y - ty + Tr) + L - \theta i + AST$$

$$y - c \times y + c \times t \times y - c \times Tr = L - \theta i + AST$$

$$y(1 - c(1 - t)) = c \times Tr + L - \theta i + AST$$

$$y = \frac{1}{1 - c(1 - t)} (L - \theta i + c \times Tr) + \frac{1}{1 - c(1 - t)} AST$$

As such, the total production function including the taxation and changes in transfers is given as follows:

$$y = c \times \left(\frac{1}{1 - c(1 - t)} (L - \theta i + c \times Tr) + \frac{1}{1 - c(1 - t)} AST \right) - ct \\ \times \left(\frac{1}{1 - c(1 - t)} (L - \theta i + c \times Tr) + \frac{1}{1 - c(1 - t)} AST \right) + c \\ \times Tr + L - \theta i + AST$$

The change in total production is as follows:

$$dy = c \times \left(\frac{1}{1 - c(1 - dt)} (dL - \theta di + c \times dTr) + \frac{1}{1 - c(1 - dt)} dAST \right) \\ - cdt \\ \times \left(\frac{1}{1 - c(1 - dt)} (L - \theta i + c \times dTr) + \frac{1}{1 - c(1 - dt)} dAST \right) \\ + c \times dTr + dL - \theta di + dAST$$

Where the change in private production is equal to the following:

$$\Delta Private Production \\ = c \\ \times \left(\frac{1}{1 - c(1 - dt)} (dL - \theta di + c \times dTr) \right. \\ \left. + \frac{1}{1 - c(1 - dt)} dAST \right) - cdt \\ \times \left(\frac{1}{1 - c(1 - dt)} (L - \theta i + c \times dTr) + \frac{1}{1 - c(1 - dt)} dAST \right) \\ + c \times dTr + dL - \theta di$$

The change in public production is given by $dAST$. Based on the previous sections, the ratio (w) between private and public production is given as follows:

$$w = \frac{y_0 + \Delta Private Production}{AST_0 + \Delta Public Production} \quad (10)$$

Where y_0 represents the initial private production, and AST_0 refers to the initial public production.

Based on the above equations, in the model in which taxation and transfers (equation 2) are introduced, the ratio between private and public production is as follows:

$$w = \frac{y_0}{AST_0 + \Delta Public Production} +$$

$$\begin{aligned}
& + \frac{c \left(\frac{(dL - \theta di + c \times dTr)}{1 - c(1 - dt)} + \frac{dAST}{1 - c(1 - dt)} \right)}{AST_0 + \Delta \text{Public Production}} + \\
& + \frac{-cdt \left(\frac{(L - \theta di + c \times dTr)}{1 - c(1 - dt)} + \frac{dAST}{1 - c(1 - dt)} \right) + c \times dTr + dL - \theta di}{AST_0 + \Delta \text{Public Production}}
\end{aligned} \tag{11}$$

Next, the above-formulated model is incorporated with money market using the interest rate. From the money market equation, interest rate is defined as follows:

$$i = \frac{1}{h} \times (\beta y - \frac{M}{P}) \tag{12}$$

By replacing the interest rate in Equation (11) with Equation (12), the ratio between private and public production depends on tax rate and becomes linked to money market. This ratio between private and public production is defined as follows:

$$\begin{aligned}
W = & \frac{y_0 + \frac{c(cdTr + L + \frac{dM\theta}{dPh} + dAST)}{1 - c + ct + \frac{\theta\beta}{h}} - \frac{ct(cdTr + dL + \frac{dM\theta}{dPh} + dAST)}{1 - c + ct + \frac{\theta\beta}{h}}}{AST_0 + \Delta dAST} + \\
& + \frac{c \times dTr + dL - \frac{(cdTr + dL + \frac{dM\theta}{dPh} + dAST)}{(h - ch + cth + \theta\beta)} + \frac{\theta}{h} \times \frac{dM}{dP}}{AST_0 + \Delta dAST}
\end{aligned} \tag{13}$$

Figure 30 shows how an increase in tax rate affects the private/public production ratio. An increase in tax rate (t) shifts the private production down, and therefore shifts the ratio w down. Conversely, when tax rates decrease, the ratio between private and public production increases (Figure 30). If tax rates are higher, public sector-increasing governments will realise their ideological goals quicker. This result agrees with findings of the previous literature that showed that left-wing governments are supporters of increased taxation while right-wing governments are the opposite (Rudolf, 2009; Tavares, 2004). However, not all governments with left-wing ideology increase taxes.

Clearly, the reduction in the private/public production ratio is the ideological objective of the ruling party A, but reducing the ratio also reduces the time period for public production-supporting government to be in power. When the ratio w shifts down, it grows closer to the critical lower boundary $w(a)$, and the chance that party A will lose the next election grows. The trade-off between ideological and opportunistic aims of the government plays an important role when deciding the respective policy and behaviour. The opposite effect is true for private production-supporting governments. When taxes are higher, the private production volume is smaller, which is not a goal of party B. As a result, right-wing governments are more likely to reduce taxes (Rudolf, 2009; Tavares,

2004). However, the reduction in taxes may lead to other difficulties, which will be discussed in the next section.

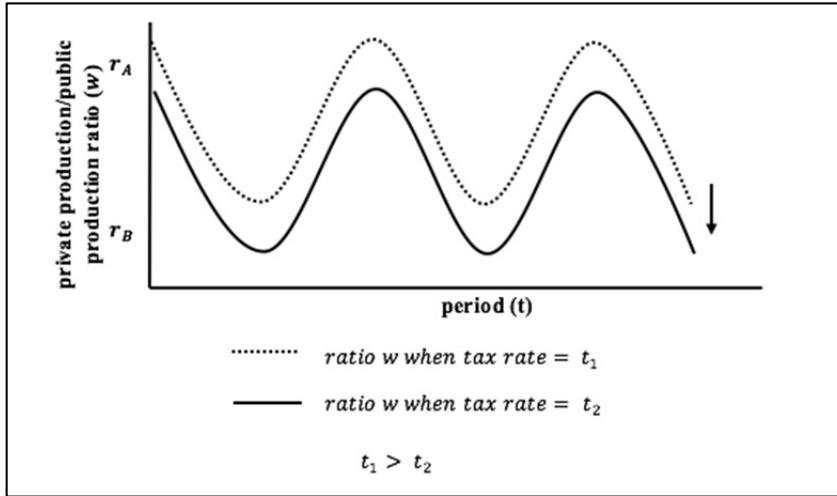


Figure 30: Impact of increase in tax rate (t) on ratio (w)

Increase in tax rate drives the private/public production ratio down.

Source: Author's work

3.10 Introducing the budget concept and the public debt in the model

In the previous section, the effects of changes in tax rates on the ratio between private and public production were derived. Tax policy is an important policy to address not only due to its effects on private production and consequently on the ratio w , but also because it is directly linked to the level of public production through the budget equation and government spending (Denes et al., 2013; Roubini and Sachs, 1989). In the literature, two main channels are identified for public sector financing: revenue from taxation and/or borrowing, which increases the public debt (PD) (Cullis et al., 2009; Hyman, 2014). This relationship between the change in public production, taxes and PD can be described as follows:

$$d\text{Public production} = \text{Taxes} \times d\text{total production} + d\text{Public Debt} - d\text{Transfers} \quad (1)$$

$$dAST = dty + dPD - dTr \quad (2)$$

Expansionary fiscal policy may result in governments not being able to finance increased spending through taxes (Kim and Roubini, 2008; Roubini and Sachs, 1989). In such cases, governments must borrow the difference between income

and spending and therefore increase the PD (Ardagna, 2007; Barro, 1979; Eusepi and Wagner, 2017).

Following three scenarios of PD are possible:

- $dPD = 0 \rightarrow$ Balanced Budget
- $dPD > 0 \rightarrow$ Deficit Spending
- $dPD < 0 \rightarrow$ Surplus Spending²¹

When public spending equals tax revenue, $dPD = 0$, and government does not need to borrow money. This situation is referred as a **balanced budget** (Costello et al., 2017; Haavelmo, 1945; Bohn and Inman, 1996). When public spending exceeds tax revenue, and government consequently has to borrow finances, $dPD > 0$, and government faces a **budget deficit** (Ihoru, 2017; Hakio and Rush, 1991). When public spending is smaller than the tax revenue, the government is able to cover the national debt; thus, $dPD < 0$. This situation is referred to as a **surplus budget** (Ihoru, 2017).

Possible scenarios

Governments may aim for different budget policies: surplus spending, deficit spending or balanced spending (Chu et al., 2003). Moreover, their preferences may vary over fiscal policy, supporting expansionary or contractionary fiscal policies (Garret, 2008). If the public production-supporting government (party A) is in power, with the desire to keep the budget balanced (does not increase/decrease the government debt), then an increase in taxes is equal to the change of the public production ($dAST$) in order to finance the expansion of the public sector using money collected from taxation. In this case, $dPD = 0$ and $dAST = \text{Taxes} \times d\text{total Production} - d\text{Transfers}$. If the private production-supporting government (party B) is in power, with the desire to keep the budget balanced (does not increase/decrease the government debt), then a reduction in taxes is proportional to the change of the public production ($dAST$). The decrease of public production provides the possibility for the government to lower taxes because fewer money resources are needed from taxation. $dPD = 0$ and $e \times dAST = \text{Taxes} \times d\text{Private production} - d\text{Transfers}$.

If the public production-supporting government (Party A) is in power, with the desire to increase public production ($dAST$) but keep taxes unchanged, then the government borrows money to finance this expansion of the public sector. Therefore, the PD increases, $dPD > 0$, and there is deficit spending: $dAST > \text{Taxes} \times d\text{Total production} - d\text{Transfers}$. Party A may also borrow money to finance the expansion of public production when taxes are increased, but the expansion of public production is faster than an increase in taxes or when taxes

²¹ Note that in these scenarios change in transfers is assumed to be zero.

are increased at a lower rate. If the private production-supporting government (Party B) is in power with the desire to decrease taxes but not spending in the public sector, then the government borrows money to finance the process of lowering taxes. Therefore, the PD increases, $dPD > 0$, and there is deficit spending: $dAST > \text{Taxes} \times d\text{total production} - d\text{Transfers}$. Additionally, if party B is in power with the desire to decrease taxes, but the decrease in spending on the public sector is slower or smaller than the cut in taxes, then the government borrows money to finance a reduction in taxes. Therefore, the PD increases, $dPD > 0$, and there is deficit spending: $dAST > \text{Taxe rate} \times d\text{total production} - d\text{Transfers}$. If the public production-supporting government (party A) is in power with the desire to increase taxes and increase public production ($dAST$) while taxes are increased with a higher rate than the expansion of public production, then the government pays back PD. Therefore, the PD decreases, $dPD < 0$, and there is a surplus spending: $dAST < \text{Taxes} \times d\text{total production} - d\text{Tranfers}$. If the private production-supporting government (party B) is in power with the desire to lower taxes and cut public production ($dAST$) while taxes are cut at a higher rate than the decrease of the public sector, then the government pays back PD. Therefore, the PD decreases, $dPD < 0$, and there is surplus spending: $dAST < \text{Taxes} \times d\text{total peoduction} - d\text{Transfers}$.

Connection to the model

Above, I explained the changes in PD as a result of adjustment in taxes and public production. However, spending policies (balanced, surplus and deficit) are also directly connected to my model as follows:

$$y = c(y) + k(y) + AST \quad (3)$$

$$dy = c \times dy + k \times dy + dAST \quad (4)$$

By using Equations (2) and (4), a total production equation that incorporates taxes and PD can be derived. The following algebraic simplifications are performed to achieve this goal:

$$\begin{aligned}
 dy &= c \times dy + k \times dy + t \times dy + dPD - dTr \\
 dy &= \frac{1 - c - k - t}{dPD - dTr} \\
 dy &= c \times \frac{1 - c - k - t}{dPD - dTr - dTr} + k \times \frac{1 - c - k - t}{dPD - dTr} + t \times \frac{1 - c - k - t}{dPD - dTr} + dPD
 \end{aligned}$$

Note that tax rate t is assumed to be constant in this case, and the change in public production is given by $dAST$. Based on previous section, the ratio (w) between private and public production is given by the following equation:

$$W = \frac{y_0 + \Delta \text{Private Production}}{AST_0 + \Delta \text{Public Production}} \quad (5)$$

Where y_0 represents the initial private production, and AST_0 refers to the initial public production. Based on all the above, in the model where taxation and PD (Equation 2) are introduced, the ratio between private and public production is given as follows:

$$w = \frac{(c + k) * (1 - c - k - t)}{t \times (1 - c - k - t) + dPD^2 - dTr^2}$$

Figure 31 shows how an increase in PD affects the private/public production ratio (tax rates assumed to be constant). An increase in PD shifts the ratio w down. Analogically, when the PD decreases, the ratio between private and public production increases (Figure 31). The results indicate that public production-increasing governments can finance spending activities by borrowing money and keeping tax policies unchanged. This finding agrees with previous literature on raising PD under ideologically left-oriented parties in power (Stasavage, 2007; Garret, 1998), which may lead to deficit spending. The results also show that public production-decreasing governments are more likely to decrease PD and achieve surplus spending. This is supported by a large body of literature (Cusack, 1997; Cusack, 1999). However, some public production-decreasing governments may prefer to lower down tax rates while also decreasing public production due to opportunistic aims to remain in power (Van Dalen and Swank, 1996).

In a previous chapter, I have discussed the trade-off between ideological and opportunistic aims faced by governments. Governments choose how to finance public spending activities. Similarly, when public spending is decreased, the party in power also decide how to allocate the surplus budget resources. Various external factors that affect these decisions exist, such as the state of the economy, the level of national debt, the existing budget conditions and the deficit or surplus, among others (Maltritz and Wüste, 2015; Javid et al., 2011). Some studies have shown that the electorate is usually more sensitive regarding taxes than PD policies (Milesi-Ferretti, 1995; Krasa and Polborn, 2014). As such, governments (and especially left-wing parties in power) tend to finance expansionary activities by increasing PD (Caballero and Krishnamurthy, 2004). However, in other cases, governments prefer to finance the additional spending in the public sector from tax revenue by increasing tax rates (Barry and Devereux, 2003.). Sometimes, both channels of financing are used together, and governments combine tax and PD schemes (Hemming et al., 2002; Afonso and Sousa, 2012).

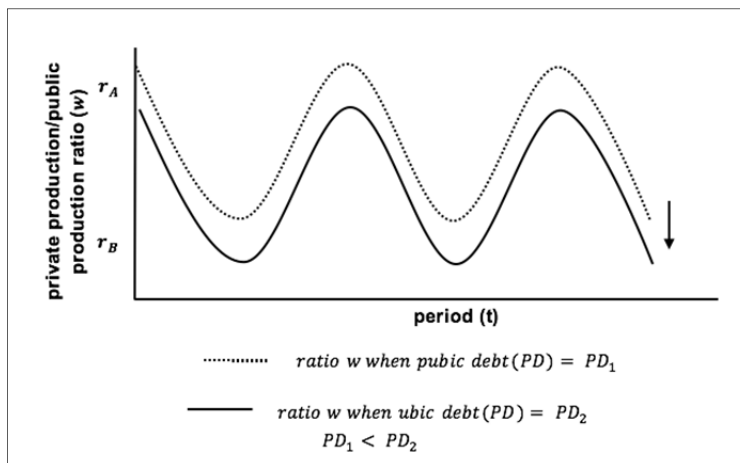


Figure 31: Impact of increase public debt on ratio (w) – tax rate being constant

Increase in public debt drives the private/public production ratio down.

Source: Author's work

3.11 Introducing the coalition concept in the model

In this sub-chapter, I introduce the coalition concept to the model by relaxing the two-party system assumption. I introduce a case in which a coalition government is in power and observe its effects on the development of the ratio between private and public production, ratio w .

Instead of a two-party system, three parties, A, B and C, are assumed to exist. Of these parties, two form a coalition government, party A and party C or party B and party C. Party A is a left-wing party in support of increased public production. Political party B is a right-wing party in support of decreased public production. The third party, political party C, is in favour of a balanced situation²² and supports a central ideology. In this setting, party C can form a coalition with either party A or party B. In previous specifications of the model with the two-party system (A and B), the change of public production ($dAST$) was illustrated by an increase (in the case of party A in power) or decrease (in the case of party B in power) of public production (AST). In this case, a coalition of A and B is ruled out. Therefore, the following coalition government scenarios can emerge:

- **Scenario 1:** The left-centre government (party A and party C) in power
- **Scenario 2:** The right-centre government (party B and party C) in power

The coalition government in power affects the change in public sector production, and the $dAST$ is adjusted. In scenario 1, in which the left-centre govern-

²² Party A is a left-wing party (or radical left), party B is right wing (or radical right), and party C is the centre (or centre-left or centre-right).

ment (the coalition of party A and party C) is in power, the increase in public sector production ($dAST$) is slower. In other words, the left-centre coalition government implements less-radical policies to expand public production. The ratio w decreases with slower speed, and the lower boundary w_B value is reached over a longer period. Thus, the switch in government is delayed. In scenario 2, in which the right-centre government (the coalition of party B and party C) is in power, the decrease in public sector production ($dAST$) is slower. The right-centre coalition government implements less-radical policies in terms of shrinking the public production. The ratio w increases at a slower speed, and thus the upper boundary w_A value is reached over a longer period, and the switch in government is delayed. This development is presented in Figure 32.

In the scenario described below (Figure 32), the development of the public/private production ratio w is modelled under the two following assumptions:

- Voting dates are kept flexible, as elections are held only when the upper or lower boundary of the ratio is reached.
- Parties in coalition are assumed to work together for the entire period between elections.

Now I will relax these two assumptions. First, I will assume that there are fixed election dates in every period t . Then, I will discuss possible scenario developments if the coalition government breaks apart between election dates.

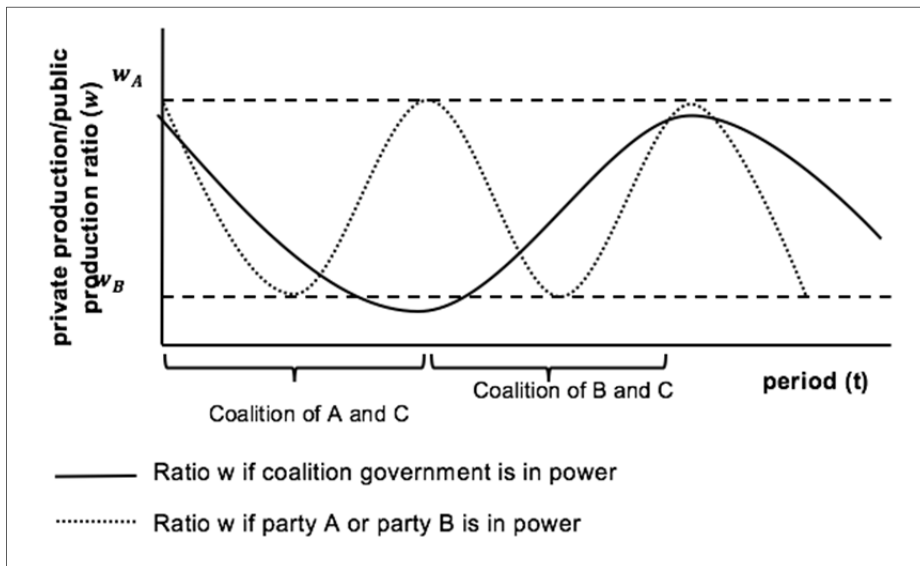


Figure 32: Development of the private production/public production ratio (w) under a coalition government

Source: Author's work

Case 1

In this case, election dates are fixed every four periods, and the government in power is a coalition government between political party A (left-wing) and political party C (centre).

After four years (periods), the new election is held. The development of the private/public production ratio w depends on whether the coalition between party A and party C holds in the next period. The scenario can develop in two ways:

1. Political party A and political party C can stay together as a coalition.
2. The coalition government (between party A and party C) breaks apart.

If the coalition government of political party A and political party C holds, then the development of the public/private production ratio w stays the same (Figure 33). If political parties A and C break apart, then the development of the ratio changes. Political party A in power alone will implement more radical policies; therefore, the speed to decrease the ratio will be faster, and the lower boundary $w(b)$ will be reached in a shorter period (Figure 33).

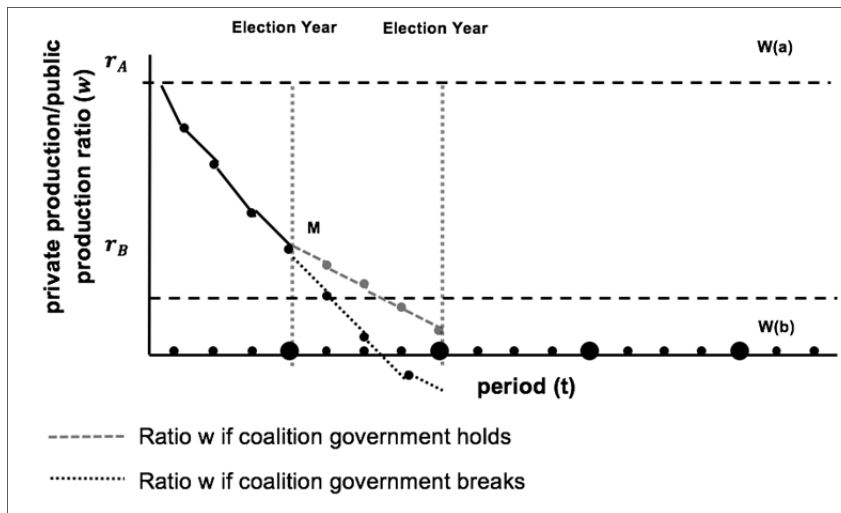


Figure 33: Development of the private production/public production ratio (w) under coalition government, case 1

Source: Author's work

Case 2

In this case, election dates are fixed every four periods, and the government in power is a coalition government between political party B (right-wing) and political party C (centre). After four years (periods), the new election is held. The development of the private/public production ratio w depends on whether the coalition between party B and party C holds in the next period. The scenario can develop in two ways:

1. Political party B and political party C stay together as a coalition.
2. The coalition government (between party B and party C) breaks apart.

If the coalition government of political party B and political party C holds, then the development of the public/private production ratio w (i.e., the slope/speed) stays the same (Figure 34). If political parties B and C break apart, then the development of the ratio changes. Political party B in power alone will implement more radical policies; therefore, the speed to decrease the ratio will be faster, and the lower boundary $w(b)$ will be reached in a shorter period (Figure 34).

Cases 1 and 2 show what could happen to the ratio w if the coalition holds or breaks under left-centre and right-centre coalition governments (Figure 33 and Figure 34, respectively). Benefits and disadvantages exist for political parties to remain in coalition (Mershon, 2002; Coleman, 1970; Martin and Vanberg, 2004). While parties in power are unable to realise their ideological beliefs fully while in coalition (Olle, 2003), holding the coalition government may allow them to stay in power longer (Martin and Vanberg, 2008). Parties often face a trade-off between ideological and opportunistic aims to hold the coalition, and their decisions are influenced by various factors (Kahan and Rapoport, 2014; Apt et al., 2009; Gamson, 1961).

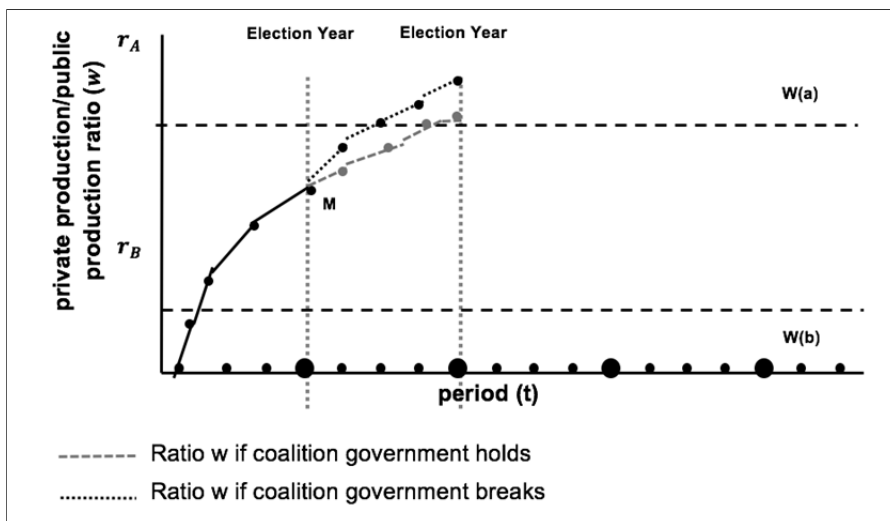


Figure 34: Development of the private production/public production ratio (w) under coalition government, case 2

Source: Author's work

Among other factors, the level of the private/public production ratio w plays an important role in making a choice to break apart the coalition. The level of the ratio at the decision point, denoted as M on Figure 33, may be used as an indicator of voters' preferences in the next election period. If M is closer to the

upper boundary, then political party A may prefer to break the coalition, because there is a higher chance of winning the election in the next period without forming a government with party C. Similarly, if M is closer to the lower boundary, then political party B may break the coalition with political party C.

While political parties A and B are the main decision-makers, political party C (the smaller party) may also turn events according to its objectives. Political party C (centre) has three choices (Figure 35):

- I. Form a coalition with political party B (right-wing)
- II. Hold a coalition with political party A (left-wing).
- III. Do not form a coalition

Figure 35 shows projections of how private/public production ratio w will develop for the next period under each choice political party C makes. The party's choice (among other factors) depends on the level of the private/public production ratio w at the decision point, point M (see Figure 35). If n and m are distances from the private-public production ratio at level M (at the decision point) to the lower and upper boundaries, respectively, then,

- Political party C will join in coalition with political party B if $n > m$, and
- Political party C will join in coalition with political party A if $n < m$.

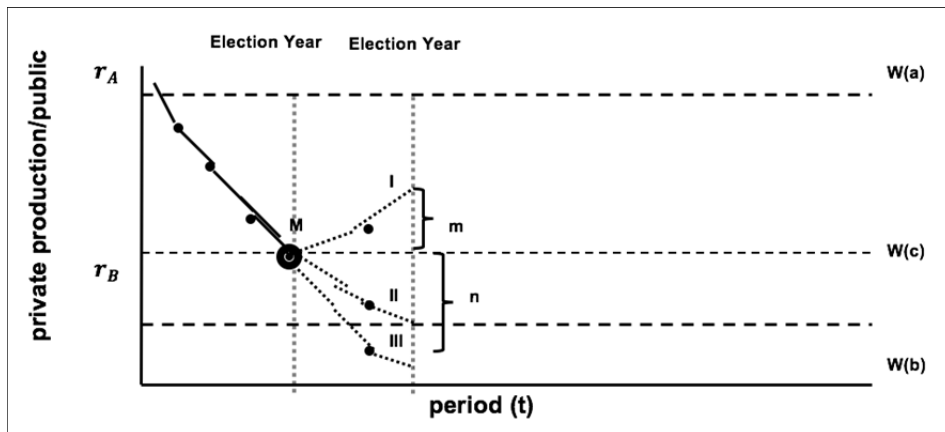


Figure 35: Development of the private production/public production ratio (w) under coalition government, choice of party C

Source: Author's work

3.12 Two-country model

I began building the model with a simplified closed economy scenario that isolated crucial concepts of total production volume and omitted some variables to better illustrate the desired relationship between public and private production volumes. Some of the factors were gradually reintroduced to the

model, such as investment, interest rates, taxation, PD and money market, as well as a coalition concept (see previous sections).

All previous sections and the models discussed within these sections are based on a closed economy case, in which no external production or other country interactions are considered. For expositional purposes, exports and imports were omitted from the total production function in previously discussed models. In this chapter, I aim to incorporate them into the model and extend the closed economy case to an open economy case by developing a two-country model.

In a two-country model, the following countries and political parties are assumed:

- **Country I:** Political party A and political party B in which party A is in favour of increased public production and party B is in favour of the opposite.
- **Country II:** Political party C and political party D in which party C is in favour of increased public production and party D is in favour of the opposite.

$$y_1 = c_1(y_1) + k_1(y_1) + AST_1 + Export_1 - Import_1 \quad (1)$$

$$y_2 = c_2(y_2) + k_2(y_2) + AST_2 + Export_2 - Import_2 \quad (2)$$

Equation (1) describes the total production function for country I, and Equation (2) explains the total production function for country II, where y_1 and y_2 refer to total production outputs for country I and country II, respectively. These outputs are the sum of private ($c(y) + k(y)$) and public (AST) production volumes. c_1 and c_2 are the consumption, and k_1 and k_2 are the investment components of private production. AST_1 and AST_2 are set exogenously by the government according to the preferred policy.

In a two-country case, where only country I and country II exist, the relationship of exchange of goods and services between these countries is as follows:

$$Export_2 = Import_1 \quad (3)$$

$$Export_1 = Import_2 \quad (4)$$

Using Equations (1), (2), (3) and (4) and employing similar algebraic transformations as in previous sections, the ratio between private and public production for country I and country II are given as follows:

Country I:

$$w_1 = \frac{y_{01} + c_1 * \frac{dAST_1 + dExport_1 - dExport_2}{1 - c_1 - k_1} + k_1 * \frac{dAST_1 + dExport_1 - dExport_2}{1 - c_1 - k_1} + dExport_1 - dExport_2}{AST_{01} + dAST_1}$$

Country II:

$$w_2 = \frac{y_{02} + c_2 * \frac{dAST_2 + dExport_2 - dExport_1}{1 - c_2 - k_2} + k_2 * \frac{dAST_2 + dExport_2 - dExport_1}{1 - c_2 - k_2} + dExport_2 - dExport_1}{AST_{02} + dAST_2}$$

Where the ratio of private/public production for country I also depends on the export of country II. Similarly, the ratio of private/public production for country I also depends on the export of country I. In this case, exports are assumed to be part of private production, independent from public production.

Figure 36 presents the impact of exports and imports on the private/public production ratio. An increase in net exports (exports being higher than imports) shifts the ratio w up. Conversely, with a decrease in net exports, the ratio between private and public production also falls. (Figure 36).

Political parties in power make decisions according to ideological and opportunistic aims. While political parties A and C (left-wing parties) realise their ideological aims by increasing the public production (implementing the positive $dAST$), they may also use export–import-related policies to remain in power longer. Therefore, party A and party C may implement trade policies that facilitate exports and discourage imports. As a result, the ratio w will shift up, the increase in public production will be compensated by an increase in exports, and the lower boundary of the ratio will be reached over a longer period. Thus, political parties A and C will remain in power longer.

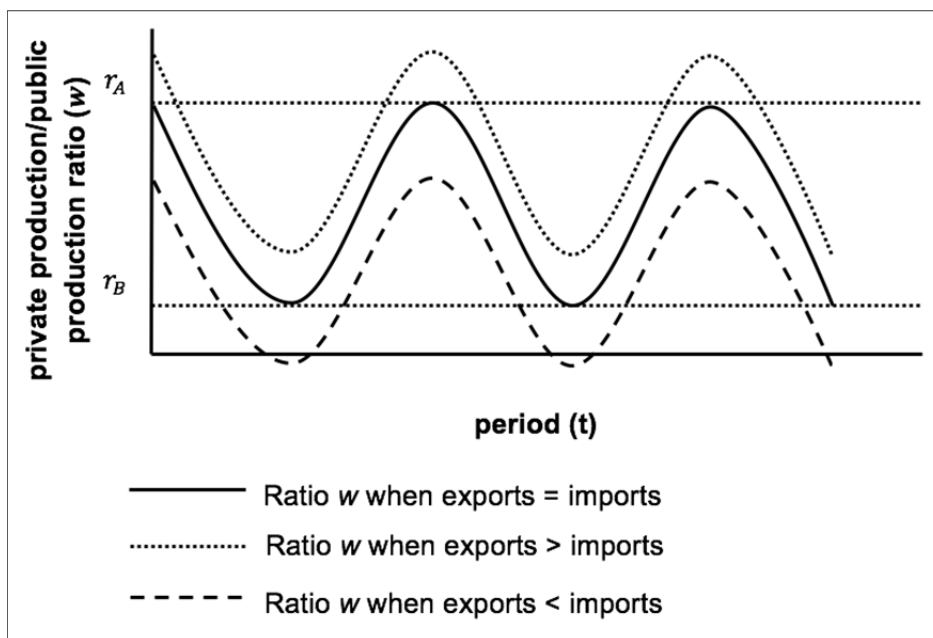


Figure 36: Impact of imports and exports on ratio (w)

Increase in net exports drives the private/public production ratio up.

Source: Author's work

Analogically, political parties, B and D (right-wing parties), may use export-import related policies to compensate cuts in public production. While under right-wing governments, the ratio w increases, and parties in power may support importing policies and discourage exporting to shift the ratio down. As a result, the upper boundary of the ratio will be reached over a longer period, and political parties B and D will remain in office longer. These findings align with results from the previous literature that showed that left-wing parties tend to be more protectionist than right-wing ones, while right-wing parties consistently implement more free-trade policies and increase imports more than left parties do (Milner and Judkins, 2004; Dutt and Mitra, 2005).

The development of the ratio, as shown above, is affected by net exports; thus, it is influenced by both exports and imports. Along with national trade policies, foreign country policies drive levels of export and import. Therefore, exports and imports of country I are influenced by government policies of country I and country II. Conversely, exports and imports of country II are influenced by government policies of country II and country I. As such, the development of the private/public production ratio depends on which party is in power in each country.

Four scenarios are possible (Figure 37):

- **Scenario 1:** Party A is in power in country I and party C is in power in country II
- **Scenario 2:** Party A is in power in country I and party D is in power in country II
- **Scenario 3:** Party B is in power in country I and party C is in power in country II
- **Scenario 4:** Party B is in power in country I and party D is in power in country I

		Country II	
Country I		Left (Party A)	Left (Party A)
		Left (Party C)	Right (Party D)
	Right (Party B)	Left (Party C)	Right (Party B)
		Left (Party C)	Right (Party D)

Figure 37: Presence of political ideology in a two-country example

Source: Author's work

Scenario 1: Left/left—Party A is in power in country I and party C is in power in country II

Both political parties, A and C, are left-wing parties; therefore, they will support increasing exports and decreasing imports to remain in power longer (see discussion above). However, as $Export_2 = Import_1$ and $Export_1 = Import_2$ in a two-country case, the changes in policies on exports and imports in country I and II will cancel each other out, and the ratio w will remain unchanged (Figure 38).

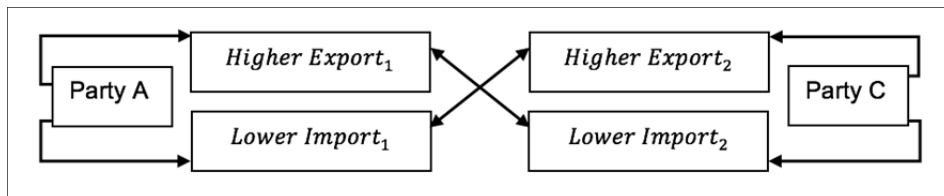


Figure 38: Exports and imports under left-wing parties in power in both countries
Source: Author's work

Scenario 2: Left/right—Party A is in power in country I and party D is in power in country II

Political party A is a left-wing party, while political party D supports decrease of public production. Therefore, party A (in country I) will support increasing exports and decreasing imports to remain in power longer. In contrast, party D (in country II) will support decreasing exports and increasing imports to remain in power longer. As $Export_2 = Import_1$ and $Export_1 = Import_2$ in a two-country case, the changes in exports and imports in countries I and II **will double**. Thus, the change in the ratio w will be two times higher/lower (Figure 39).

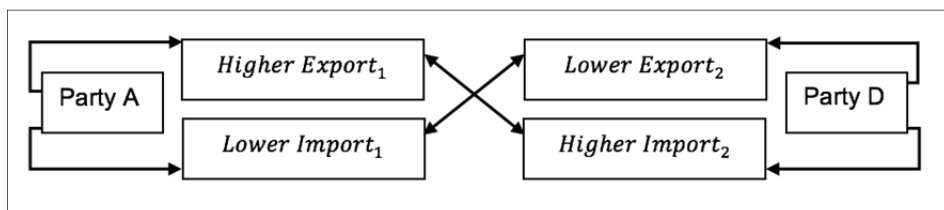


Figure 39: Exports and imports under left-wing party in power in country I and right-wing party in power in country II
Source: Author's work

Scenario 3: Right/left—Party B is in power in country I and party C is in power in country II

Political party B is a right-wing party, while political party C supports an increase of public production. Therefore, party B (in country I) will support decreasing exports and increasing imports to remain in power longer, while party

C (in country II) will support increasing exports and decreasing imports to remain in power longer. As $Export_2 = Import_1$ and $Export_1 = Import_2$ in a two-country case, the changes in exports and imports in countries I and II will double. Thus, the change in the ratio w will be two times higher/lower (Figure 40).

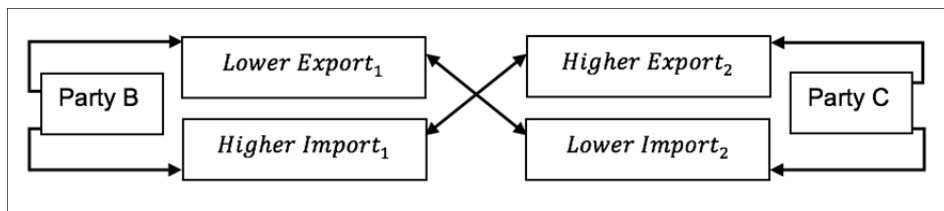


Figure 40: Exports and imports under right-wing party in power in country I and left-wing party in power in country II

Source: Author's work

Scenario 4: Right/right—Party B is in power in country I and party D is in power in country II

Both political parties, B and D, are right-wing parties; therefore, they will support decreasing exports and increasing imports to remain in power longer. However, as $Export_2 = Import_1$ and $Export_1 = Import_2$ in a two-country case, the changes in exports and imports in countries I and II will cancel each other out, and the ratio w will remain unchanged (Figure 41).

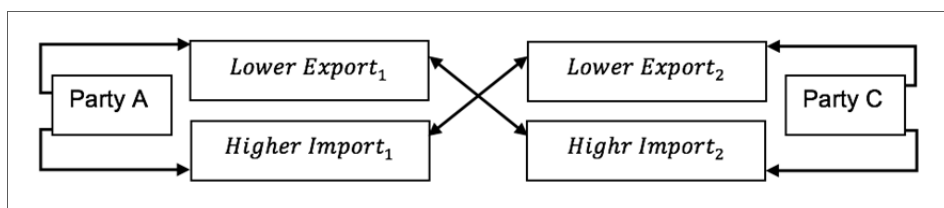


Figure 41: Exports and imports under right-wing parties in power in both countries.

Source: Author's work

The results show that in a two-country case, policies implemented by the government in country I affect the ratio (w) of both countries (countries I and II), and policies implemented by the government in country II influence the ratio (w) of both countries (countries I and II). Therefore, the political system and ideology of the ruling party in one country has an impact on the political shifts in another. Governments use export and import policies according to their ideological and opportunistic aims. If governments with similar ideologies are

in power in both countries, then changes in export and import policies cancel each other out. If governments with contrasting ideologies are in power, then the effects of policy changes are doubled. Findings of the theoretical model could be further explored by empirical assessment. Hypothesis that are plausible to be tested are as follows:

- a. Political ideology of ruling party in country I has an impact on the election results of a country II (if these two countries have a trading relationship).
- b. The impact of political ideology of country I on an election results of a country II is higher when government in a country II has ideologically different position than country I.
- c. Higher the trade between countries I and II, the relationships tested by hypothesis a and b are stronger.

In empirical analyses, it is important to control for size of the economy among other influential factors. In the scenarios discussed above, it is assumed that government policies on exports and imports in country I and country II have an equal magnitude. In other words, if a government policy increases/decreases exports (imports) in country I by v , also a change due to government policy on exports (imports) in country II is equal to v . However, in practice, this is not usually the case. Countries with large economies, consequently larger exports, may predominantly influence the election outcomes of smaller countries.

3.13 Summary of the findings of the theoretical model

In the theoretical chapter of this thesis, a novel macroeconomic model was developed. This model connects the reformation of the public sector with changes in political power under conditions of the PBC theory. I constructed a model that explains how changes in the ruling party (in government ideology) affect the public sector-restructuring activities. More precisely, I developed an economic framework that models the ratio between private and public production under power shifts in the government and the political ideology.

The model developed in this chapter is a novel theory based upon the classical Keynesian framework that extends the traditional public choice literature by explicitly modelling the interaction between political and economic processes. The theoretical chapter consists of 13 sections, and Table 3 presents the objectives and main findings of each section.

I began building the model by introducing the simplified closed economy scenario, which was gradually advanced as some of the key variables were introduced, such as fixed election dates, investment, interest rates, volume of money, taxes, budget, PD, coalition concept, exports and imports. By introducing these factors, the model became closely connected with the *public choice* and *public finance* literature and advanced the research in both directions. The model was also developed into a two-country open-economy case, thereby building bridges between literature on governance in different juris-

dictions and power shifts in different regions (Friedrich and Feng, 2000). However, the theoretical model constructed in this chapter clarifies only some of the effects and drivers of changes in the private/public production ratio. Other factors play a role in the processes described by the model, but these are not included in the setup. Some of these factors have been delineated in the chapter on delineations in the beginning of the thesis, while other limitations of the model are discussed in section 6.2 at the end of the thesis. Some of the factors can also be investigated using traditional macroeconomic analyses to predict their effects on reforms or political changes. As such, the main limitation of the model is that it represents a simplified version of reality. Similar to theoretical models in general, it covers only certain fiscal and political instruments (Ylikoski and N.E, 2014; Achinstein, 1965).

The model can be used to describe and analyse the effects of power shifts in government on public sector reforms and to understand voting mechanisms and election results in relation to political ideology. The model can also be extended in various ways; possible extensions of the model are presented in section 6.3.

Table 3: Summary of the findings of the theoretical chapter

Sub-chapter	Findings
Aim of the chapter and connection to the other chapters	• The chapter aims to develop a macroeconomic model that gives insight into public sector evolution when governments of different ideologies come to power. • Explicitly focus on public and private production development and how the ratio between them changes as governments change.
Modelling approach and idea	• The model constructed in this thesis represents a political-economy model and is explicitly focused on reform sequence, where reforms are ideologically driven. • The model constructed in this study is a new theory that uses the classical Keynesian economic structure. • The model constructed in this thesis describes a two-party system. • The model focuses on the ratio between private and public production and takes into account voters' preferences over the ratio. • The aim of the model is to consider the partisan aims of politicians who attempt to realise their ideologically based policies until the loss of elections.
The model's time structure	• Two timing options of the policy, the pre-election and the post-election (that are identified in literature), are considered in the model by aggregating them into a single policy.
Simplified closed economy model	• The baseline model idea of Friedrich and Ukrainski (2016) is developed into a simplified closed economy model by introducing private and public production components. • The model demonstrates: ◦ the cyclical nature of the private/public production ratio under conditions of PBC theory. ◦ cyclical nature of the ratio between private and public production occurs as a result of voters' reaction to the policy concerning the size of the public sector.
The size of initial public production and lower and upper boundaries	• Higher AS_0 results in lower ratio (w). • Changes in boundaries of the ratio (w) cause critical points to be reached over different periods.

Sub-chapter	Findings
Introducing investment in the model	• Higher investments result in higher ratio (w). • Higher interest rates result in lower ratio (w)
Introducing money market in the model	• Increase in volume of money results in higher ratio (w).
Introducing taxation	• Higher tax rates result in a lower ratio (w).
Introducing the budget concept and the public debt in the model	• Increases in public debt shift the ratio (w) down.
Introducing the coalition concept in the model	• Under coalition governments, the change in the ratio is slower and governments remain in office for longer periods.
Two-country model	• Political changes in one country affect the ratio and consequently the political system of another country

Source: Author's work

4. THE RATIO BETWEEN PRIVATE AND PUBLIC PRODUCTION AND POLITICAL CYCLES IN EUROPEAN COUNTRIES

4.1 The purpose of the chapter

The macroeconomic model constructed in this thesis provides insights into theoretical aspects of the relationship between political changes and the evolution of public production (expressed by w , the ratio between public and private production volumes). The empirical evidence of this relationship in the real world requires further investigation. Therefore, this chapter aims to provide support for a working hypothesis regarding the theoretical model and illustrate that the model's underlying assumptions are reasonable. Particularly, I empirically explore the relationship between the ideological composition of government and the ratio between private and public production.

A vast body of previous literature has addressed the political determinants of the public sector (Faggio and Overman, 2014; Feldmann, 2006). However, the analyses applied in this chapter provide a novel perspective of the problem by estimating the impact of the government's political ideology on a specific measure of public production. This has not been previously investigated. Here, I elucidate the relationship between private and public production, which explicitly shows the development of public production volume relative to movements in private production output. I follow the definition of public and private production provided by the NAS; therefore, my measures are different from variables used in previous similar studies. Previous literature has modelled the impact of partisan drivers on government expenditure. This expenditure is often used as a proxy of public sector size, but it differs from the measure of public production. Government expenditure includes not only goods and services produced by government but also government transfer payments. However, these payments are not entered into any National Accounts. Therefore, public production measures based on National Accounts data reflect only the volume of government spending that covers government purchases. The public production measure based on National Accounts aligns with the theoretical model and best reflects the aims of this thesis. Furthermore, using the measure provides novelty and brings additional value to the field. The empirical analyses of this chapter also advance the research in this direction using updated datasets, including merged data sources and a longer period.

The main research question of the chapter is as follows: is it possible to identify any relationship between the government's political ideology and the ratio between public and private production?

4.2 The model and the data

The aim of this analysis is to estimate the impact of the government's political ideology on the ratio between private and public production using panel data from 26 democracies over 27 years (from 1993–2019). The main advantage of using panel data is to control for unobserved country-level heterogeneity. The Breusch-Pagan Lagrange multiplier test and the Hausman test suggest using the within estimator (FE model). The model has the following specification:

$$Y_{it} = \alpha_0 + \beta_{it}X_{it} + \alpha_i + \mu_{it} \quad (1)$$

Where Y_{it} (dependent variable) is the first difference of the ratio between private and public production for country i in period t ; X_{it} contains information about country-level observable characteristics, including political ideology and other control variables (described below); α_i is the country's unobserved time-invariant component; and μ_{it} is the error term. The country's unobserved component α_i can be removed with the following transformation:

$$(Y_{it} - \bar{Y}_i) = \beta(X_{it} - \bar{X}_i) + (\mu_{it} - \bar{\mu}_i) \quad (2)$$

Where $\bar{Y}_i$, $\bar{X}_i$ and $\bar{\mu}_i$ are the mean values over $t=1, \dots, T$ period of time. The within estimator (FE model) yields unbiased and consistent results; however, the time-constant unobservable α_i can be correlated with other observable covariates.

The dependent variable (Y_{it}) in my model is the ratio between private and public production taken as a first difference to observe the change. The typical obstacle for working with such a relationship is that it is not directly observable. Another practical problem is valuing the output of the public sector. Various measurements have been used to estimate the public production volume (Garand, 1989; Feldmann, 2006). Previous studies have often used government spending as a proxy for public production (Potrafke, 2011), as government spending is assumed to explain some of the dynamics of public sector activities (Potrafke, 2010). Moreover, the availability of public spending data for a large sample of countries and time periods provides an opportunity to achieve high accuracy in results. However, government spending does not reflect the variable of interest of this thesis. This thesis explicitly focuses on public sector production, goods and services produced by the government; it does not concentrate on other government activities that enter into government expenditure, such as government transfer payments. Government spending is the sum of government purchases and government transfer payments. The macroeconomic model constructed in this thesis models private and public production output and the ratio between them, and this model was based upon production volumes in these sectors. Consistent with this definition of the ratio, the dependent variable was formed based on production volumes, not the expenditure levels that contain transfer payments. In my analyses, I followed the definitions of National Accounts, as government transfer payments are not entered in any National

Accounts. Rather, they appear according to the recipient's spending of those funds. Therefore, I used the public sector entry from National Accounts—government consumption and investment (also referred to as government purchases)—to proxy government production. The data were taken from the *World Bank National Accounts data* and *OECD National Accounts data* files. Government consumption includes all current government expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures regarding national defence and security, but it excludes government military expenditures that are part of government capital formation. To form the relationship between public and private sectors, I used the final consumption expenditure (total consumption) entry from National Accounts and subtracted the government purchases entry (government consumption). The final consumption expenditure (formerly total consumption) is the sum of household final consumption expenditure (private consumption) and general government final consumption expenditure (general government consumption). The data for total consumption were also taken from the *World Bank National Accounts data* and *OECD National Accounts data* files²³.

The main independent variable (included in X_{it}) in my model was the ideological composition of the government. The data were taken from the Comparative Political Dataset (CPDS)²⁴. The main advantage of using these data is that they were suited for cross-national analyses. The dataset consisted of annual data for 36 democratic countries from 1960–2017 (or since their transition to democracy). In my analyses, I covered 26 parliamentary democracies from the data for 1993–2019. I included only countries with parliamentary systems as I am primarily interested in the ideology of the ruling party.

The ideology variable was measured based on the methodology of Seki et al. (2014) and was similar to the Schmidt Index (Table 4). This variable was a categorical variable: right-wing, left-wing, and centre ideology. Categories were created based on party seats in the parliament; right-wing dominance and right-

²³ The data chosen for the empirical analyses reflect the idea behind the theoretical model, as they can explain the popularity function of voters around the ratio between public and private consumption. This is a reasonable proxy for the ratio modelled in the theoretical chapter. However, private production in the theoretical model is treated slightly differently. Private production (as in the theoretical model) comprises private consumption plus the investment, but the data taken for the empirical analyses cover only the consumption of the private production, while the investment part is excluded. The OECD database for National Accounts does not explicitly show the private production account, but such data for some countries are available. For example, the private production data are reported in the statistical yearbook of Germany under the chapter *Volkswirtschaftliche Gesamtrechnungen (Economic Accounting)*. I restrained from using the private production data in the analyses, as the data are not consistently reported for all countries in the sample. The data used in the analyses correspond to the aim of the thesis and are a plausible proxy for the ratio modelled in the theoretical chapter. For future research, I recommend using private production data, which also cover the investment.

²⁴ The CPDS is a collection of political and institutional country-level data provided by Prof. Dr. Klaus Armingeon and collaborators at the University of Zurich (Switzerland).

centre complexion categories were aggregated into right-wing ideology, while left-wing dominance and left-centre complexion categories were aggregated into left-wing ideology. Additionally, I ran a second model in which ideology was a continuous variable. I used the percentage of the left-wing parties (right-wing parties) in parliament for the measure.

Table 4: Measurement of political ideology

% of seats in the parliament	Sub-category	Category
$66.66\% < \text{Right} \leq 100\%$	Right-wing dominance	Right
$33.33\% \leq \text{Right} \leq 66.66\%$	Right-centre complexion	
$66.66\% < \text{Left} \leq 100\%$	Left-wing dominance	Left
$33.33\% \leq \text{Left} \leq 66.66\%$	Left-centre complexion	
$0 < L < 33.33\%$ and $33.33\% \leq \text{Centre} < 100\%$	Balanced situation	Centre
$0 < R < 33.33\%$ and $33.33\% \leq \text{Centre} < 100\%$		

Source: Compiled by author based on the Comparative Political Data Set

Both types of variables used to measure ideology have been applied often in the literature. Most previous analyses have modelled the ideology of the government as a dummy (0 or 1) or categorical (left, right, centre) variable, showing dominance of the left-, centre-, or right-oriented parties. Few have used a continuous variable. I applied both variables to confirm my results. One advantage of using continuous variables, such as the percentage of left-wing parties in parliament, is that doing so may provide additional insights; parties may have the dominant position in parliament, but the degree in which they pursue their ideological beliefs while designing new policies depends on how much support they acquire. For example, the conservative party proceeded with the most radical reformation at the beginning of the 1980s, when a gap between seats occupied by left- and right-winged parties was the largest in UK history. Such a relationship is even more influential in decision-making bodies of countries where the two-party system (such as the UK) is not evident. The existence of smaller parties in parliament and the possibility of coalition formation from the opposition create an obstacle for the dominant player to push for full realisation of their ideology.

The drivers and obstacles of the ratio between private and public production are various. Furthermore, the ideological composition of the government, as well as other determinants of the size of public production and/or private production, exist. To capture those factors, control variables were accounted for in the model (included in X_{it}). The control variables represented three groups of factors: economic, political and demographic. Economic control variables included in the model were unemployment rate, government receipts (as % of GDP), public deficit (as % of GDP), debt (as % of GDP), economic openness (measured as total trade [sum of import and export] as a percentage of GDP),

GDP growth and inflation. To control the demographic changes, I included a population variable (total population, in thousands). For the political factors, and to observe the effect of political ideology, I controlled for the age of democracy, the electoral system (proportionality), the executive-legislative relationship (presidential or parliamentary system), the legislative fractionalisation, the election year and the change in government. These variables were chosen as control factors because they have been used in the past in similar studies (Christl et al., 2020). These variables are explained below in further detail (see Annex 1 for descriptive statistics).

Government receipts is a variable that shows the total receipts (revenue) of the government as a percentage of GDP. The data were taken from the OECD (2019) database²⁵. The revenue of the government must be controlled for, as the public production may increase/decrease according to the changes in revenue rather than due to political shifts. With an increase in government total revenue, public production is also assumed to increase, as governments are able to provide more services and goods. Including unemployment rate as a control variable has been common in previous studies, and changes in the size of public production are associated with overall changes in employment structure and conditions. Unemployment rate is a variable that shows unemployment as a percentage of the civilian labour force. These data were taken from the AMECO database²⁶. Deficit spending and debt policies of the government are directly related to decisions regarding public production volumes; if governments can acquire higher debt, they may use this debt to finance increased state activities, or in the case of previous high debt and deficit conditions, governments may try to cut spending. Deficit is a variable that shows the annual deficit (overall balance/net lending of general government) as a percentage of GDP. The debt indicator measures the gross general government debt (financial data for the deficit and debt variables were taken from OECD databases). GDP growth and inflation are important determinants of the relationship between private and public production. Despite the political wills of governments, overall economic activities may increase or decrease, thereby influencing the ratio between the private and public sectors. GDP growth indicates growth of the real GDP as a percentage change from the previous year. As a measure of inflation, the growth of the consumer price index (CPI; all items) as a percentage change from the previous year was used. Information about deficit, debt, GDP growth and inflation was taken from OECD databases. The economic openness of a country affects both the government and private sectors. For example, services that could be imported from abroad may replace the existing government production, and as a result, the state activity may decrease overall. Furthermore, changes in private sector consumption may be due to changes in exporting and

²⁵ OECD Economic Outlook No. 105, OECD Economic Outlook: Statistics and Projections (database).

²⁶ AMECO is the annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs.

importing processes. Openness of the economy is measured as the total trade (sum of import and export) as a percentage of GDP in current prices. The data were taken from the PWT database²⁷. A population control variable was included in the model due to the fact that public spending may increase due to changes in demographical situations rather than changes in economic or political conditions. Population variable is an indicator that shows the total population, in thousands (thou.). The data were taken from the AMECO database.

The dataset comprised 676 observations and represented a balanced panel data type. The dataset covered 26 countries from 1993–2019. Thus, 27 years of observations were available for each country (see Annex 1). Countries included in the sample achieved democratic political regimes at different periods in history. Brander and Drazen (2000) found that fiscal manipulations by governments work differently in new and established democracies. To control for this effect, the age of democracy (in years) was included in the model. The age of democracies was calculated based on data published by Boix, Miller and Rosato (2018) on political regimes from 1800–2015. The countries covered in the analyses also differed in terms of electoral systems (Table 5). From 26 democracies, 22 countries were defined as systems with proportional representation (PR), while three countries (Lithuania, France and Italy) had modified proportional representation (parallel plurality PR-systems, majority-plurality/alternative vote). Only in the case of the UK was the electoral system single-member, simple plurality. In Italy, the electoral system of the country changed from modified proportional representation (1995–2005) to fully proportional representation (2006–2017). The electoral system shapes public policy (Milesi-Ferretti et al., 2002). Persson and Tabellini (2003, 2004) found that governments that run under majoritarian electoral rules spend relatively less compared to governments under proportional electoral rules. To control for electoral system differences, I have included a dummy variable for the proportionality system, coded 0 for a single-member district (simple plurality system) and 1 for modified proportional representation (parallel plurality PR-systems, majority-plurality/alternative vote) and 2 for proportional representation. The data were taken from the CPDS²⁸.

All 26 countries included in the analyses were European parliamentary democracies, but they differed in terms of executive-legislative relationships. Different executive-legislative relationships influence the spending policies of the government. The variable that captured this effect in the model was a dummy variable for the political system, coded 0 for systems that are parliamentary and semi-presidential but dominated by parliament and 1 for systems that are presidential or semi-presidential dominated by a president. The data were taken from the CPDS. From 26 countries, 15 were fully parliamentary

²⁷ PWT version 9.1 is a database with information on relative levels of income, output, input and productivity, covering 182 countries between 1950 and 2017.

²⁸ The CPDS is a collection of political and institutional country-level data provided by Prof. Dr. Klaus Armingeon and collaborators at the University of Zurich (Switzerland).

systems, nine were semi-presidential systems dominated by parliament, one (France) represented a semi-presidential system dominated by a president, and one (Switzerland) had a hybrid system (Table 6). In addition to a parliamentary prime minister, a semi-presidential system also has a popularly elected president. Switzerland was the only country defined as the hybrid system due to the fact that the collegial executive elected by the legislative branch does not depend on legislative confidence (Lijphart, 2012; Armingeon et al., 2018). Previous literature has shown that political fragmentation affects government spending. Hallerberg et al. (2009) showed that governments tend to use expenditure in exchange for support from the legislative body (the pork barrel mechanism). Eslava and Nupia (2010) observed that fractionalisation in legislative body leads to an increase in government spending. The legislative fractionalisation variable included in the model was an index of fractionalisation of the party system according to the formula proposed by Rae (1968). The data on legislative fractionalisation were taken from the CPDS.

Table 5: Electoral systems

Electoral systems	Countries
Proportional representation (PR)	Belgium; Czech Republic; Denmark; Estonia; Germany; Greece; Hungary; Italy; Latvia; Luxemburg; Netherlands; Norway; Spain; Sweden; Finland; Ireland; Slovakia, Slovenia; Italy; Austria; Iceland; Portugal; Poland
Modified proportional representation (parallel plurality PR-systems, majority-plurality/alternative vote)	Lithuania; France; Italy
single-member, simple plurality	UK

Source: Inter-Parliamentary Union; Armingeon et al., 2018; national sources and constitutions; EJPR Political Data Yearbook (various issues)

Table 6: Executive-legislative relationship

Executive-legislative relationship	Countries
Parliamentary system	Belgium; Czechia; Denmark; Estonia; Germany; Greece; Hungary; Italy; Latvia; Luxemburg; Netherlands; Norway; Spain; Sweden; UK
Semi-presidential dominated by parliament	Finland; Ireland; Lithuania; Slovakia, Slovenia; Poland; Portugal; Iceland; Austria
Semi-presidential dominated by president	France
Hybrid system	Switzerland

Source: Armingeon et al., 2018; national sources and constitutions; EJPR Political Data Yearbook (various issues)

An election year dummy was included in the model to control for the opportunistic aims of governments, as they tend to increase spending policies before election (Ferraresi et al., 2018). Another dummy variable included in the model was the year when government changed. Change in government is associated with restructuring of the governance system and thus influences the relationship between ideology and government spending. Spending policies for the current year are decided in the previous year and are influenced by economic indicators of that period. Thus, all explanatory variables were taken as lagged values. All variables, the dependent variable and control variables were taken as first differences. The population variable showed the total population in Thou., and the variable was taken as a logarithmic transformation. Based on the model described above, the central hypothesis I test was as follows: **Does political ideology influence the ratio between private and public production?**

4.3 Results

In this section, I present and discuss the results obtained from the FE regression model. First, I run the model without political drivers, and the results are presented in the Table 7. The results illustrate that (most) variables included in the analyses are significant and have expected signs (Table 7).

Government receipts (revenue) was negatively related to the ratio between private and public production, and the coefficient was statistically significant. The ratio increases (decreases) with an increase (decrease) in private production and/or decrease (increase) in public production volume. The negative sign for the government receipts can be explained by the association of higher government revenue with higher public production. Higher taxes and increased revenue make more resources available for government to increase its activities. Thus, the higher the revenue of government, the more funding, services and goods in the economy it can provide (Lee et al., 2013; Anderson et al., 1986). The results showed that **GDP growth** was positively correlated with the ratio, and the coefficient was significant. As overall economic activities increase, the private sector tends to increase more than the public sector. **Deficit and debt** were positively related to the ratio, and the coefficients were statistically significant. One of the primary goals of governments is to provide stability for the economy and to balance the budget (Guo and Harrison, 2004). Thus, in cases of high debt and deficit spending, public sector activities are reduced to maintain the stability of the budget. The results indicated a negative correlation between **unemployment rate** and the ratio, which was a logical result; expanding the public sector to create jobs is a common practice (Mortensen and Pissarides, 1994; Faulk, 2002). Maintaining full employment is one of the most crucial indicators for governments of various countries. Thus, in cases of low employment levels, governments often provide targeted programs and services, using public investment to create new jobs and reduce the total national unemployment level. In these cases, policymakers directly hire people for public services.

However, the success and failure of this involvement depends on the public service capacity.

Table 7: Model results (without political explanatory variables)

Variables	Fixed effects	
	DP = ratio between private and public production taken as a first difference	
LD.receipts	-0.005*	(-2.12)
L.gdp growth	0.005***	(4.37)
L.inflation	-0.002	(-1.05)
LD.debt	0.001*	(2.05)
LD.deficit	0.005*	(2.97)
LD.population (log)	-2.679***	(-2.88)
LD.unemployment ratio	-0.009**	(-2.75)
LD.economic openness	-0.001	(-0.56)
Constant	0.002	(0.35)
R squared (overall)	0.415	
Number of observations	563	

Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Author's work

Next, I ran the same model with political variables included. The following models were estimated:

- **Model I:** Model included economic drivers and the government ideology, and the main independent variable was the categorical ideology variable (i.e., left, right or centre).
- **Model II:** Model included economic drivers, government ideology and other political explanatory variables.
- **Model III:** Model included all economic and political explanatory variables and year dummies.

The results (Table 8) show that left-wing ideology of the ruling party has a negative significant coefficient. Thus, the change in the ratio between private and public production is 0.025 times lower under governments with left ideology compared to those with right-wing parties in power. Results are in line with findings of empirical assessments of similar relationships in previous literature (Whitten and Williams, 2011; Jensen, 2011; Tavares, 2004)

Table 8: Model results (with political explanatory variables)

	DP= Ratio between private and public production (taken as a first difference)					
	Model 1		Model 2		Model 3	
LD.Government Receipts	-0.005*	(-2.07)	-0.005*	(-1.95)	-0.005*	(-1.97)
L.GDP growth	0.005***	(4.10)	0.005***	(4.11)	0.004***	(2.56)
L.inflation	-0.003	(-1.20)	-0.002	(-1.10)	-0.002	(1.02)
LD.debt	0.001*	(1.79)	0.001*	(1.70)	0.001*	(2.16)
LD.deficit	0.004**	(2.96)	0.004**	(2.73)	0.003*	(1.79)
LD.unemployment rate	-0.010**	(-3.04)	-0.010**	(-3.04)	-0.006*	(-1.85)
LD.population	-2.655**	(-2.87)	-2.306*	(-2.49)	-1.676*	(-1.94)
LD.economic openness	-0.001	(-0.33)	-0.001	(-0.44)	0.001	(0.70)
L.Centre ideology	0.012	(1.23)	0.007	(0.78)	0.006	(0.73)
L.left ideology	-0.025**	(-2.85)	-0.025**	(-2.78)	-0.027**	(-3.26)
L.Age of Democracy			-0.012*	(-1.51)	-0.011	(-1.02)
L.presidential system			-0.009	(-0.22)	-0.030	(-0.86)
L.proportional representation			-0.033	(-1.28)	-0.037	(-1.59)
L.Fractionalisation			0.291**	(4.21)	0.244**	(2.69)
L.Change in government			0.003	(0.35)	0.002	(0.44)
Election year			0.011	(-1.30)	0.010	(-1.41)
Constant	0.006	(0.80)	-0.218**	(-2.93)	-0.215**	(-2.98)
R-squared (overall)	0.434		0.455		0.571	
Number of observations	562		562		562	

Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note:

- Model 3 included year dummies.
- The dependent variable in all models was the first difference of the ratio between private and public production.
- The population variable was a logarithmic transformation of the variable in thousands.
- The explanatory variables were taken as the first differences and were lagged values (lag of 1).

Source: Author's work.

I performed various robustness checks to support the results of the empirical model presented above and to provide informative conclusions. The aim of robustness analyses is to check the sensitivity of the results. First, I applied the same FE model and **excluded one country at a time**. Figure 61 in Annex 2 shows the coefficients of main independent variable. The results showed that in all 26 cases (while excluding one country at a time), all explanatory variables included in the analyses showed similar signs, coefficients and significance levels for all 26 models. Next, I applied the same FE model and **excluded one year at a time**. Figure 62 in Annex 2 shows the coefficients' main independent variable ideology ratio. The results showed that in all 27 cases (while excluding one year at a time), the ideology variable had a statistically significant effect on the ratio. All other variables included in the analyses also showed similar signs, coefficients and significance.

To confirm the robustness of the analyses, I also estimated the model in which ideology is a continuous variable. I used the relative power position of left-wing parties in government based on their seat share in parliament, measured as the percentage of the total parliamentary seat share of all governing parties. The measure was weighted by the number of days in office in a given year. The data were taken from the CPDS. The results (Annex 2) showed that the ideology variable had a significant negative effect on the ratio. Thus, with an increase of left-wing power in parliament, the ratio between private and public production decreases. This result confirmed the findings of the main estimation model, which showed that the ratio is lower under left-wing political parties in power compared to right-wing (left-wing) parties.

4.4 Summary of the chapter

The partisan PBC theory explains that government's ideological position influences its policy-making decisions (Drazen, 2000). Previous empirical literature on the topic has largely focused on the different spending policies adopted by left-wing and right-wing parties in power (Franzese and Jusko, 2006). However, the evidence found in the literature is far from conclusive. The analyses presented in this chapter advanced the empirical research in the field by estimating the impact of political ideology on a specific measure of public sector activities that had not been previously addressed. The econometric analyses discussed in this chapter investigated the relationship between government ideology and the change in the ratio between private and public production. The results of the FE model showed a negative statistically significant coefficient between left-wing ideology and the ratio. Furthermore, the results indicated that the ratio between private and public production is more likely to decrease under ideologically left-oriented governments compared to right-wing parties. The findings of this chapter aligned with the partisan PBC theory, which emphasises the significance of ideology in determination of government size and the policy formulation process (Drazen, 2000; Hibbs, 1977). The results supported the

working hypothesis of theoretical model that political parties act according to ideological positions and attempt to implement policies that best reflect their political beliefs.

A number of limitations are related to these analyses. First, the relationship between variables used in the model (including control variables) is far more complex than can be addressed by econometric assessment. This complexity is related to the nuances of the policy process, which cannot be captured quantitatively. Additionally, the data posed limitations. Since ideology is not an observable variable, existing methods to measure it are only proxies. Furthermore, one of the key challenges of measuring political ideology is the potential for cross-country bias (Franzmann and Kaiser, 2006; König et al., 2013); deriving an indicator that is comparable between countries is difficult. The CPDS partially solved this issue as the data were constructed to be comparable between nations. Furthermore, the FE model used in the analyses allowed for the variability of the data across countries to be controlled. Nevertheless, the complexity of measuring the political ideology and possibility of cross-country bias remains important limitations. Future research may advance the literature in this direction by focusing on one country to reduce the variation in how ideology is defined across countries. To reduce the risk of cross-country bias, I specifically focused on a limited number of European countries with relatively similar political settings. Future research may consider additional countries to reveal further insights.

Time bias in measures of ideology has been identified in the literature as another challenge to empirically assessing the impact of ideology on policy (Coman, 2019). König (2013) suggested that researchers should be cautious when working with ideology variables and comparing measures at different times. To reduce the risk of time bias, I concentrated on a shorter timeframe. However, including a dataset with a large time dimension would provide additional details and better capture the impact of political cycles. Future research can also address the long-term impact of ideology. For such assessment, the joint endogeneity of the political and business cycles requires consideration.

The analyses of this chapter only concentrated on the impact of the political ideology of the CG on the ratio between private and public production. Such a limited scope of analysis aligned with the research aim of this thesis. However, future research could incorporate the connection between CG ideology and regional policy.

Due to the above limitations, I refrain from claiming causality and interpreting magnitudes of coefficients. However, the results suggested a significant correlation between ideology and the ratio between private and public production in European countries. Results of the empirical analyses employed in this chapter were interpreted with the following considerations: There exists a relationship between political ideology and the ratio between private and public production. The ratio is smaller under governments with left-wing ideology compared to governments with right-wing ideology.

Although the findings of this chapter are easily reconciled with the existing literature (Kittel and Obinger, 2003; Bräuninger, 2005; Potrafke, 2010; Herwartz and Theilen, 2014a), the econometric analyses only provide a step towards empirically understanding the relationship between ideology and changes in public production activities. I will continue my empirical investigation of the relationship between the ideology of the ruling party and the public sector activities by performing a historical investigation of the reform processes in one country, the UK. I will examine public sector reforms in the UK under the conditions of political cycles. My analyses are presented in the following chapter.

5. POLITICAL BUSINESS CYCLE IN THE UK: A CASE STUDY

5.1 The aim of the chapter and connection to other parts of the thesis

This chapter aims to observe the development of public sector reforms under political cycles in the UK. Emphasis is given to adjustments and reforms that are undertaken as a result of political changes, especially those related to elections and power shifts. Public sector reformation, political mechanisms and the interdependency of the two represent an extremely sophisticated system. Therefore, I use different research methodologies to tackle their complex relationship and provide meaningful results and conclusions. First, I conduct a historical investigation of the processes in case of administrative and political reform policy of the UK to show that the working hypothesis of the thesis (as well as the results of the theoretical chapter) is meaningful and true. The main research methods used in the qualitative assessment of reforms are document analyses. I investigate policy reforms related to public sector activities from 1945–2020. In addition to document analyses, I use economic data to illustrate relevant points further. Qualitative assessment of reforms provides an opportunity to observe the particularities of the policy process in the UK and in general, and these particularities are reflected in the theoretical model. This two-way contemplation advances the analyses and conclusions of the thesis and adds to the scientific value of the work. Second, I empirically test the effect of the political ideology of the ruling party on the ratio between private and public production in the UK for the same period to strengthen the conclusions of the research and further support the working hypothesis of this thesis. The research methodology used for the quantitative analyses is econometric modelling.

This chapter is organised as follows. The first section explains the choice of the UK for a case study. The second section focuses on qualitative analyses of public sector reforms in UK for 75 years until 2020 and their alignment with the theoretical considerations of the macroeconomic model constructed in the thesis. The third section empirically models the relationship between government ideology and the public sector size in the UK. Finally, the fifth section summarises the findings and concludes the chapter.

5.2 The choice of the UK

The choice of the UK as a targeted country for empirical investigation of processes is justified as follows:

- a. **The stable political platform:** To study government changes and their effects on public sector development, the country of observation should have a history of political changes in which public sector-increasing and decreasing govern-

ments are elected following each other after some election period. These governments must be in favour of increased public or private sectors. The country of observation must demonstrate a stable political platform, in which the political ideology of parties is identifiable, and the political processes are not solely governed by external factors, such as wars, foreign politics and revolutions. The UK successfully fulfils these requirements. The political environment in the UK (from 1945) has been relatively stable compared to many other European countries (Judge, 2005). For example, from the 1950s to the present, Germany faced certain challenges in the political environment due to reunification in 1990. All post-Soviet countries demonstrate an ambiguous political system. However, the UK is an ideal example in terms of a stable political setting. Since the end of World War II, its political parties have operated in a secure environment, and the country has not been involved in violent demonstrations, large scale wars (that had a major impact on economic policy) or territorial restructuring (Richards, 2012).

- b. Two-party system:** The theoretical model narrows the definition of political platform from multi-party systems to two-party systems. This simplification aims to concentrate explicitly on the effects of ideology shifts between left- and right-wing political parties in power on the public sector. However, certain adjustments to the models (coalition government) were discussed, and the conclusions derived from the model were generalised (Prosser, 2018; Ware, 1996). The same logic of simplification is applicable to empirical observation of reform processes. Analysing a two-party system has an advantage, as it exclusively emphasises the effects of power changes in government on the economy. Such an approach is important for the research purpose of this thesis, as the scope of the study is to understand the nature of political cycles represented in changes in ideology of the ruling party. Officially, the UK is defined as a multi-party country. However, two main political parties are present: Conservative (Tory) and Labour. The Conservative party represents right-wing ideology and is in favour of private production, supporting less-regulated business entities. The Labour party represents left-wing ideology and supports increased public production and regulated big businesses (Pattie, 2019). Parliament²⁹ is the legislative body of the

²⁹ The parliament of UK is bicameral and consists of two chambers (Gordon, 2015): (1) the House of Commons and (2) the House of Lords. The House of Commons is the lower chamber of the parliament, but maintains the real authority and power. The House of Lords, on the other hand, represents the higher chamber of the parliament, but holds secondary power. The main duty of the House of Lords is to review and criticise the legislation. The house of Commons includes 650 members, called MPs (members of parliament). The number of seats in the House of Commons adjusts according to changes in population. In classical political theory, there exists three branches of government: executive, legislative and judicial (Kelleher and Wolak, 2007). The British system is different from the classical one. In the USA, the Constitution provides checks and balances between different branches of government to keep division of power between them. However, in the British political

country and has absolute sovereignty, and members of parliament are elected directly by the people (John and Copus, 2011)³⁰. The UK has a majoritarian system; the party that has a majority in parliament (House of Commons) forms a government with an elected period of five years (since the Fixed-term Parliaments Act of 2011). The UK does not have proportional representation, as do many other countries in Europe but rather has a simple majority system, in which members of the parliament are elected from geographical constituencies (Denver et al., 2012; Pulzer, 2013). From 1945–2020, two main political parties were dominant in the UK. Of the 19 government changes, the Labour party obtained governance 10 times, and the Conservative party obtained governance eight times. During this period, only one coalition government occurred in 2010 (please see Annex 3).

- c. **Centralized government:** To investigate the effects of the ruling party's political ideology on the public sector, as well as consequences of power (ideology) shifts on national economic indicators, those effects must prevail. Most federal republics do not fulfil this criterion. For example, the USA is a presidential federal republic in which the president is the head of the executive state and remains independent of legislature, along with the ministry. Although the entire administration changes with presidential elections, the US Congress is the legislative body of the country, and the effects of power changes in Congress are not equally reflected in state policies. The same is applicable to Germany. Although Germany represents a parliamentary republic, the power effects are decentralized because of the federal system. The scope of this research is to understand the relationship between power changes in the legislative body of the nation and the public sector. Even though the effects of power shifts in the ruling party on the public sector are evident in federal decentralised countries, this work concentrates on centralised arrangements for clarity. Focusing on a less complex system, in which the centralised body is responsible for policy-making activities, provides an opportunity to identify channels of influence better. This is even more relevant when empirical analyses generate observations of factual reforms and processes.

The UK has a centralised government system³¹. Thus, a change in CG affects the reformation of the entire country. Although the UK consists of four so-called nations—England, Wales, Scotland and Northern Ireland—it is still a unitary state, and the national legal authority is coordinated by the

system, members of government are also members of legislature (Leston-Bandeira and Thompson, 2018).

³⁰ The UK represents a unitary state and parliamentary (constitutional) monarchy with limited federalism (due to the existence national assemblies for some of the nations). The head of the political system is officially a monarch, but the power of the monarch is limited and only ceremonial. The state is headed by the prime minister.

³¹ Please see the summary of the ministerial departments in the UK and their core functions in Annex 3.

CG³². Additionally, even though Scotland and Wales have devolved administration (Mitchell, 2006), they are still administered by the central body (Judge, 2005). The UK represents an Anglo-Saxon system of law, which differs from others as the rules belong to the common law, while administrative litigations are under Common law courts (Hazell and Rawlings, 2015)³³. There is no unified written constitution of UK. Instead, case laws and international agreements are used. Reforms are not only easy to make, but they are also long-lasting and stable (Caygill, 2019). These particular aspects of the British administration system provide the possibility to implement new policies easily compared to countries with a strong formal constitution and civil law traditions (Lynn, 2006).

- d. **Long observable period of public sector changes:** A long period of public sector development is observable in the UK. Such an opportunity is useful for comprehensive analyses, as it provides the ability to examine the subject of research from different perspectives. For example, concentrating on the case of Estonia or Georgia would be challenging, as the full relationship between political players and public sector-restructuring activities is unclear. Because Estonia and Georgia gained independence after the Soviet Union collapsed in 1991, the history of the country's political system is too short for thorough investigations.
- e. **Rich literature and research sources:** The other important factor to consider when conducting empirical analyses by observing reforms and policies is access to relevant documents. This is especially crucial if the research covers events from history. Accurate policy archives are available in the UK, as well as rich literature and research sources (including data) for public sector reforms and political activities for the entire period covered by the analyses.

5.3 Qualitative assessment of public sector reforms in the UK from 1945–2020

The aim of this chapter is to discuss PSGRs in the UK from 1945–2020. A special focus is given to the effects of political shifts in the government. Therefore, reforms are analysed as a group of reform series that result from political changes in power. The analyses of the reforms are linked to the findings and assumptions of the theoretical model, and respective conclusions and considerations are derived.

The management system of public services has undergone considerable change over the last 75 years in the UK (Pollitt and Bouckaert, 2011). To fulfil the purpose of the chapter, the public administration reform series of the UK are classified into the following five main time periods:

1. 1945–1950, Establishment of welfare

³² Please see the details of the British administration system in Annex 3.

³³ Please see the stages of passing the bill in the UK in Annex 3.

2. 1951–1964, Conservative reaction
3. 1965–1979, Pre-Thatcherism
4. 1979–1997, Thatcherism
5. 1997–2020, Post-Thatcherism

1945–1950 Establishment of Welfare

The UK underwent two general elections in 1945 and in 1950³⁴. The World Wars (I and II) stimulated the creation of the welfare state³⁵ in the UK, and the establishment of the welfare state is a milestone in the public administration history of Great Britain, as the first universal public services were created during that time (Hills, 2011; Greer, 2010). The main acts that established the welfare state were as follows:

- The Education Act in 1944³⁶ restructured the school system in the UK by raising the school-leaving age to 15 and dividing elementary education into primary and secondary levels. The act abolished fees for state schools and provided free secondary school education for everybody (Jones, 2016).
- The Family Allowances Act in 1945 supported large families with more than one child. It provided a regular money payment to mothers for the additional child(ren) (Pederson, 1995).
- The National Insurance Act in 1946 created the structure for the welfare state and extended the system of state pensions and unemployment benefits. It made National Insurance compulsory for everybody employed, except women who were married. Workers were given the right of receiving benefits for illness, unemployment, age and maternity (Paterman, 1988).
- The National Health Service Act in 1948 took hospitals into public ownership to make health service available for everybody. First, in 1946, the National Health Service was created for England and Wales and was managed under the Secretary of State for Health. In 1947, the NHS was created for Scotland and directed by the Secretary of State for Scotland. In 1948, the NHS was established for the Northern Island (Loudon et al., 1998).
- The National Assistance Act in 1948 provided benefits for those who were not covered by the National Insurance Act: homeless and physically disabled people (Loudon et al., 1998).
- The Town and Country Planning Act in 1947 established planning permissions for land development. Special charges were attached to land-owners, and the government provided grants for local authorities to perform land developments (Golland and Blake, 2004).

³⁴ In 1945, the Labour party won the elections with 47.7% popular vote (61.4% parliamentary seats), and in 1950, Atlee's Labour government kept the power with 46.1% popular vote (50.4% parliamentary seats).

³⁵ The *Welfare State* (in the UK context) is the term often used to describe the group of policies implemented by the Labour government after winning the parliamentary elections in 1945. However, part of the reforms was designed by the Conservative party before elections.

³⁶ Also known as "The Butler Act".

- The Children’s Act in 1948 established a childcare system for and gave local authorities the power to take control of deprived children (Pinchbeck and Hewitt, 2019)
- Marshall Aid in 1948 led to nationalisation of the road haulage, railways and coal industries³⁷, as well as the steel, iron³⁸, fuel and power industries (Pelling and Cox, 1988).

The ideas developed in the theoretical chapter of the thesis are easily observable in the process of public sector evolution in the UK during the welfare establishment period. The Labour party was in power from 1945–1950, and the creation of the welfare state, with public sector-increasing policies, is an illustration of political party A (public sector-supporting party) in power with public sector-expanding policies. Nationalisation of utilities and other industries, creation of pension and social benefit schemes, establishment of public health offices and increased support for public schools are classical examples of the expansion of state activities, and thus an increase in public production in the economy, which was also defined as *dAST* in the model.

Various factors led to welfare state establishment in the UK, including national and global post-war developments (Titmuss, 2019). Reform drivers that were modelled in the theoretical chapter are evident in the welfare state establishment period in the UK. One of the most important prerequisites for the governance demonstrated by the Labour party in power is a reaction to vote results. The electoral manifesto of the Labour party in 1945 pledged nationalisation of many industries and full employment, and it identified the party as fully socialist³⁹. In 1945, the Labour party won the general elections with 47.8% (393 seats), which is the third highest number the party has reached in the political history of the UK. In post-war Britain, the electorate demanded the activities put forward by Attlee’s Labour government. Additionally, the party had significant support from the military sector, which was entirely pro-Labour. Therefore, the PS expansionary policies of the Labour government from 1945–1950 resulted from voters’ demand for such reformation. The post-war expectations and preferences of the voters towards state activities provided readiness for and demanded enlargement of the state sector. In other words, the lower boundary (w_B) of the ratio between public and private activities (see model) was too far from the present (1945) development ratio point. The economic outcomes of welfare state establishment and the policies implemented by Attlee’s government are numerous, and these were modelled and predicted by the macroeconomic model of this thesis. The model highlighted two channels for financing increased public activities (positive *dAST*): debt financing and increased taxation. Both channels are evident in the Labour government’s

³⁷ The Coal Act of 1949

³⁸ Iron and Steel Act of 1949

³⁹ “The Labour Party is a socialist party, and proud of it” was stated in the manifesto of the Labour party in 1945.

expansionary policies from 1945–1950. First, increased state expansionary policies resulted in a high level of taxation; the UK demonstrated the highest level of taxation among any other highly developed post-war country (Figure 42). This high taxation reduced business capacity and declined the private savings of individuals. Second, the UK accumulated high government debt. The restructuring activities, establishment of public offices in nationalised industries and enlargement of social policies required vast financial resources, which were scarce in post-war Britain. The Anglo-American loan agreement negotiated in 1946 by Keynes supported the economy for the first years of the Labour government. However, in conditions when the trade level was too low, economic crises became inevitable.

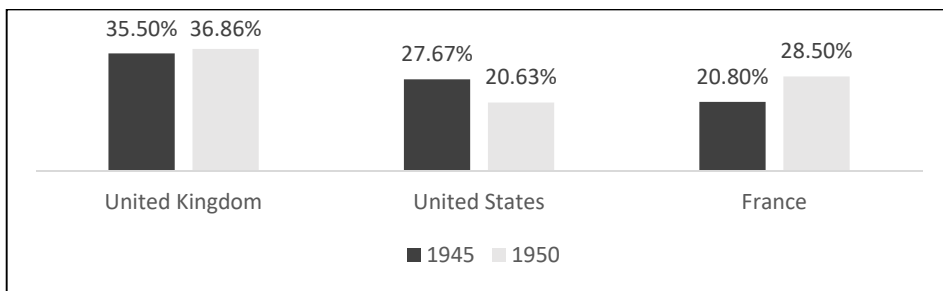


Figure 42: Post-war taxation policies: UK, USA and France

Source: Author's work based on the data from the International Centre for Tax and Development, using data from OECD Revenue Statistics

1951–1964 Conservative Reaction

The Conservative party came to power under Winston Churchill after winning the 1951 general elections with a small majority: 321 seats for Conservatives and 295 for the Labour party. In the 1951 general elections, the Labour party received more popular votes 48.8%, but the Conservative party won a higher percentage of parliamentary seats. The Conservative party, or Tories, remained in power for 13 years by winning general elections three times in a row, with an increasing majority every year (1951, 1955, 1959). Public sector reforms during this period are typically divided into two periods: (1) during Churchill (1951–1955) and (2) after Churchill (1956–1964). The political ideology of the conservative party under Winston Churchill (1951–1955) slightly differed from present-day Tory ideology and is often called “one-nation conservatism”, or Butskellism⁴⁰. The general election manifestos of the Conservative party during that period explain the ideology of the party and display no opposition to most parts

⁴⁰ Butskellism refers to the post-war political consensus formed between main political parties about social and economic issues formed in the 1950s and associated with the exercise of office as Chancellor of the Exchequer by Rab Butler of the Conservative Party and Hugh Gaitskell of the Labor Party (Pugh, 2015; Rollings, 1996).

of the welfare state established by the previous Labour government (Tomlinson, 1997). The following policy documents and publications are valid sources of the Conservative ideology of the period:

- *The Industrial Charter* in 1947 represents post-war conservatism. The charter reconciled Conservative party ideas with the social and economic policies introduced by Attlee's Labour government. Although the publication provides ideological support for free enterprises, its main purpose was to support the role of the already-established welfare state.
- *The Right Way of Britain in 1949* promised citizens full personal freedom and power of initiative. After establishing the welfare state in the UK, government welfare spending was high, and the Conservative government faced difficulties cutting spending down. *The Right Way of Britain* not only aimed to shrink public expenditure, but it also underlined the importance of the welfare state established by Attlee's government welfare reforms, such as the National Health Service Act, Family Allowance Act and National Assistance Act.
- *One Nation: Tory Approach to Social Problems* underlined major differences between Labour and Conservative party ideologies towards social policies and supported administrative efficiency and low taxation policies. However, these traditional Conservative ideas were positively integrated with and expressed positive signals for the welfare state.
- *The Social Services: Needs and Means* (Macleod and Powell, 1952) was a relatively more critical publication about the expansion of the welfare state. It questioned the efficiency of the National Health Service while still supporting free services that were beneficial to the general public (e.g., free education).
- *Change Is Our Ally* (Powell and Maude, 1954) criticised the role of government from an economics perspective and supported private sector expansion. However, it still justified the welfare state based on the higher importance of political and social factors above economic ones.

Post-war consensus believed in a mixed economy, which meant the support of both state involvement and private enterprise. Under the consensus, political parties favoured NHS and the welfare state, attempted to reduce unemployment and worked with both trade unions and private employers. Various policies of the period were considered successful and led to the re-election of the Conservative government three times in a row. First, exports increased significantly as a result of global economic recovery. Second, the UK managed to reach full employment (1% unemployment) as a result of investments in nationalised industries and high government spending, which created demand for goods and services. Third, Winston Churchill's government stayed in consensus with the welfare state. Although the Conservative government denationalised the steel industry in 1953, this action was not a regular privatisation; rather, the production remained centrally planned. As the Conservative government aimed to

maintain the importance of the welfare state and stay within the post-war consensus, the role of the state did not undergo any significant reduction. The economic domestic policy “ROBOT⁴¹” was declined. The needs of the economy were balanced by the “opportunity” state, which provided equal possibilities for individuals to succeed, but maintained welfare principles (Oliver and Pemberton, 2004).

Winston Churchill resigned in 1955, and Anthony Eden became the prime minister, followed by Harold Macmillan. In 1959, the Conservative party led by Harold Macmillan won the general elections with an increased majority. Several important factors led to the change of the Conservative government’s political direction after Churchill. First, voters expressed significant dissatisfaction with Great Britain’s economic growth rate. Although the UK experienced higher economic growth in the period compared to previous years, its growth was relatively low compared to other European countries after World War II (Figure 43). Maintaining the welfare state was associated with high costs, which implied restrictions in certain sectors. As the budget was used to fulfil the opportunistic aims of the government, various problems became evident during the second half of the Conservative governance. The high economic growth and low interest rates posed the danger of stop-go economics⁴². Furthermore, after 1955, the level of inflation reached high numbers in the UK, and thus, introducing additional controls to the economy, decreasing the public spending and limiting the wage increase were necessary. In 1958–1960, the world witnessed an economic boom, which was also evident in the UK and impacted the entire economy. Under Macmillan, the Conservative government lowered taxes and increased public spending again; as a result, the country experienced problems balancing payment deficits in 1964. Voters were also unhappy with increased bureaucracy in the state industries. This overall dissatisfaction created the need for the Conservative government to reform the existing system. First, the *National Economic Development Council (NEDDY)* was established in 1961 to gather trade unions, government offices and employers to solve current economic problems and difficulties in the UK by collaboratively planning the economy. Then, a *graduated insurance/graduated retirement benefit (GR B) scheme* was implemented in 1961 that gave workers the ability to contribute to their state pension according to their earnings. In 1962, the *National Income Commission (NIC or NICKY)* was established to plan income and wages.

⁴¹ ROBOT was an economic policy devised in 1952. It was named after three of its civil servant advocates, Sir Leslie ROWan, Sir George BOLton and OTto Clarke. ROBOT aimed to regulate the economy through an exchange rate, the floating pound, rather than control of the state.

⁴² When a fast-growing economy is followed by slow growth period (Scott and Walker, 2017).

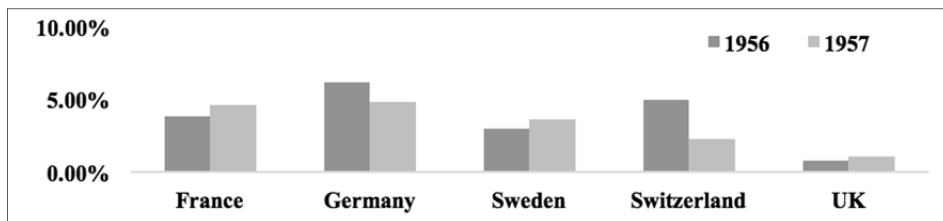


Figure 43: Growth rate of per capita GDP in select developed countries

Source: Compiled by author based on the data published by Clio-Infra

Various aspects of this period reflect the findings of the macroeconomic model of the thesis. Although the welfare state, which supported high taxes and increased government spending, did not align with Conservative political ideology of the time, maintaining the welfare state suited the small-term opportunistic aim of the government to remain in power and gain votes. Thus, the Conservative government kept the welfare state mainly due to high support and demand for such behaviour from the electorate (Fraser, 2009). This supports the underlying assumptions of the theoretical model; policies which are promised and then implemented by governments reflect both opportunistic and partisan aims of the political parties. The volume of the change in state activities, defined as *dAST*, is an outcome based on voter preferences and thus represents the reaction of policies to vote results. The 1951 general election results described the wills of the voters. Since the Conservative party came into power in 1951 as a result of higher seats rather than higher votes, voters clearly supported high-spending policies and the welfare state introduced by the Labour government. Thus, the Conservative government ideology of the period was highly influenced by post-war conditions and the consensus. The Conservative government remained in power for three terms (13 years). Although the political ideology of the Tories was largely influenced by the post-war consensus, the party gradually introduced a less state-controlled economy. After winning the general election in 1959, the party established NEDDY and NICKY (see above), which aimed to transform economic planning by involving tripartite bargaining between the government, employers and trade unions (Berry et al., 1974).

1965–1979 Pre-Thatcherism

From 1964–1979, the government changed multiple times. The Labour party came to power in 1964 by winning the general elections by 50%. In 1966, they increased the majority in Parliament by winning the election again by 57%. The Conservative party replaced the Labour party in 1970 by winning the general elections by 52.4% (Conservative 46%, Labour 43%) and stayed in power for four years. In 1974, the Labour party came to power again by collecting 50% of seats in general elections, and this government continued until 1979. The Labour government policies between 1964 and 1970 aimed to expand state control. The Conservative party won general elections in 1970 by 52.4% and

remained in power for only one term, until 1974. Heath's⁴³ Conservative government experienced the culmination of many economic problems, some rooted in previous years, such as high inflation and unemployment. According to the 1970 Conservative party manifesto (Selsdon manifesto), which promoted a radical free-market-oriented economy and repudiated the post-war consensus, the government would solve inflation and unemployment problems. However, the events of the period, such as the Oil Crises of 1973 and Bloody Sunday in 1972⁴⁴ worsened the situation. Heath's government faced significant opposition from trade unions. As a result, the free-market-supporting policies promised in manifesto could not be fully addressed. The main economic consequence of Heath's failure was high unemployment and stagnation. Despite the support from electorate for the radical Conservative manifesto in 1970, the Conservative government was not able to advance radical reforms, largely because of the economic difficulties faced by the country and trade unions. Thus, the expansions/shrinkage of the public sector described by *dAST* in the theoretical model are also influenced by general economic conditions.

The Local Government Act of 1972 and *the Industrial Relations Act of 1971* caused massive anger among the public, which, along with the economic failures, significantly contributed to the Conservative party's loss in the 1974 general elections. The Labour party came to power in 1974 and implemented various social security benefits. From 1974–1979, the Labour government introduced policies that supported benefits and subsidies and increased state pension. However, the PD increased dramatically during this time (Figure 44), as a large portion of expanded activities by the state was debt financed. The Labour government responded to the Sterling crises of 1976 with the Alternative Economic Strategy (AES) programme, which instigated increased public ownership, economic planning, price controls and import controls. The winter of 1978–1979, the Winter of Discontent, was characterised by increased trade union strikes, which demanded high wages. The strikes were consequences of the Labour government's actions, especially the macroeconomic policy to control inflation, and they led to the Conservative victory in the 1979 general elections. Pre-Thatcherism reformations of UK public administration reflected the ideological difference between the Conservative and Labour parties (Figure 45). Although the welfare state policies that were established in previous administrations were upheld, the Labour and Conservative governments passed acts that were radical in terms of state involvement and economy control (see the acts instigated by each government above).

The Labour party promoted state-expanding policies, also defined as those that increase *dAST* in the theoretical model. The increase in *dAST* was evident through two channels of reformation in the period: (1) increased spending and social policies of government and (2) additional state authorities and houses.

⁴³ Edward Heath served as Prime Minister of the UK from 1970–1974 and leader of the Conservative party from 1965–1975.

⁴⁴ In Northern Ireland, 28 peaceful civilians were killed during a protest by British soldiers.

Examples of the first type are the Selective Employment Payments Act, the Child Benefit Act of 1975, the Employment Protection Act of 1975, SERPS and the Training Opportunity Scheme of 1977.⁴⁵ The Conservative government, in contrast to Labour policies, tried to reduce state control. This was initiated first by strengthening the local governments (LG) (the Local Government Act of 1972) and second by reducing the power of trade unions (the Industrial Relations Act)⁴⁶.

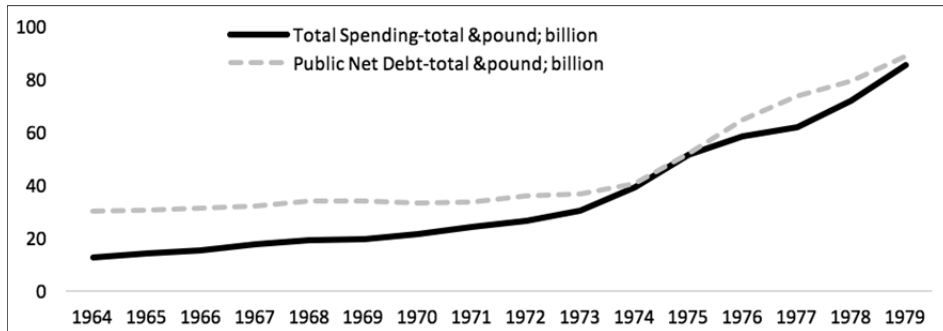


Figure 44: Total government spending and total public debt in the UK

Source: Author's work based on data from the OECD database

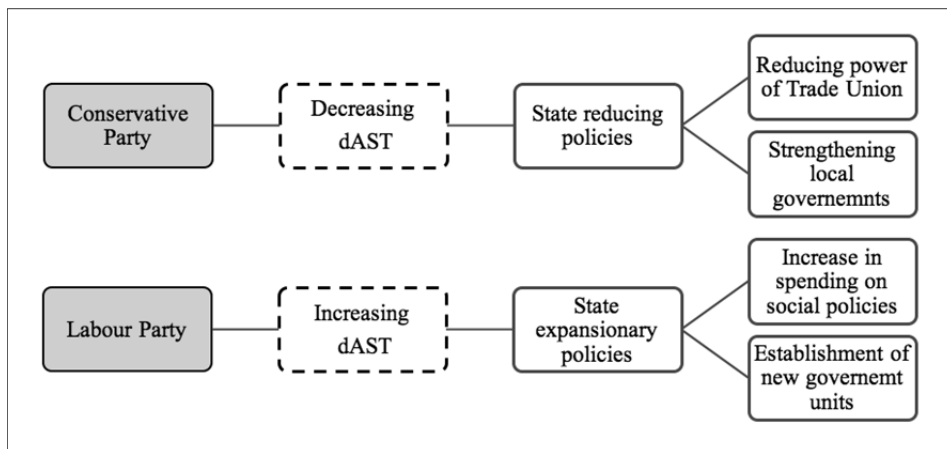


Figure 45: Differences between the ideology and policies of the Labour and Conservative governments from 1965–1979; Connection to the theoretical model

Source: Author's work

⁴⁵ Examples of the second type of reforms are the establishment of the *Department of Economic Affairs (DEA)* in 1964, establishment of the *National Board for Prices and Incomes* in 1965 and creation of the *Industrial Reorganization Corporation* in 1966.

⁴⁶ Workers were given a right not to belong a registered trade union, which provided a greater chance that collective 'no strike' clauses could be implied into individual contracts of employment. The act therefore implied a less state protection for workers.

1979–1997 Thatcherism

In 1979, the Conservative party won the general election by 53%, and Margaret Thatcher became the prime minister. The Conservative government remained in power for four terms until 1997⁴⁷. Three main problems in the UK economy when Thatcher was elected in 1979 were as follows (Matthews and Minford, 1987): (1) high inflation, (2) low productivity growth and (3) rising unemployment. These problems had multiple causes. First, monetary and fiscal control was lacking. Second, trade unions had increased power. Third, government involvement in the economy (the state sector) was too high, which resulted in high taxation policies. Finally, labour was not incentivised, which led to decreased efficiency of resources. During this period, Thatcherism⁴⁸ favoured denationalisation and limited state control (Holmes, 1989). Thatcherism is connected to the end of the Keynesian economics in Great Britain governance and instigate of the opposite, supply-side economics based on a free-market-oriented economy. Moreover, Thatcherism is rooted in Monetarism (Ironsides et al., 2000), which aims to reduce government intervention and control the currency supply (Walsh, 2000). Thatcher's policies represented those implemented by political party B in the theoretical model constructed in this thesis. In other words, the Conservative government of this period passed policies that shrank the size of the public sector, thus introducing negative $dAST$ and leading to a positive ratio between private/public production (Figure 46).

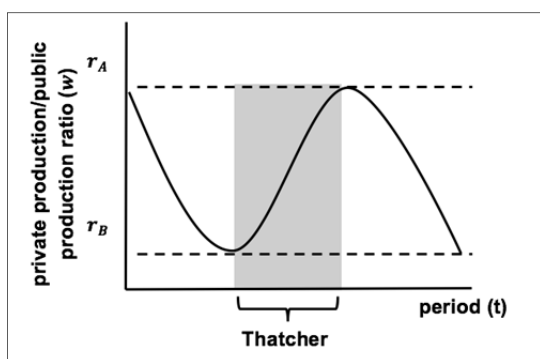


Figure 46: Development of the private production/public production ratio (w) (from the theoretical model) under Margaret Thatcher's government

Source: Author's work

One of the main economic challenges during the first years of the Conservative regime (1979–1981) that Thatcher's government aimed to solve was increased inflation. Thus, new government policies imposed higher interest rates and introduced cuts in spending and taxes. Although other challenges existed in the

⁴⁷ The Conservative was reelected in 1983 (by 61%), 1987 (by 58%) and 1992 (by 52%).

⁴⁸ The strong Conservative, right-hand ideology.

economy during Thatcher's first term, the main concern as reduction of inflation. Social security benefits for unemployment were not cut, but were increased. The *Efficiency Unit* was established in 1979 to generate solutions on saving money in government departments (Lowe, 2011). Public spending was cut in all sectors besides NHS, police and defence (Figure 47). As a result, inflation decreased. However, the UK experienced a huge reduction in output, private sector investment and employment in the first two years of Thatcher's government. Thatcher's rating decreased, and the country entered a recession.

The Conservative party was re-elected in 1983 despite the problems in the economy during Thatcher's first term for several reasons. From the beginning of 1981, the political and economic environment in the UK changed. The *Civil Service Department* was abolished in 1981, and its functions were redistributed to the *Treasury*, *Prime Minister's office*, *Cabinet office* and the newly established *Management and Personnel Office*. The Financial Management Initiative (FMI) was launched in 1982 in the white paper *Efficiency and Effectiveness in the Civil Service (Cmd 8616)*. It aimed to efficiently allocate, manage and control resources. Inflation levels began to decrease. At the same time, Britain's trade balance improved as a result of oil productions from the North Sea (from the late 1970s). The Conservative government also benefited from the global expansion of the economy (Riddell, 1985), and the number of small-sized firms grew dramatically. Furthermore, Thatcher was successful in foreign policy⁴⁹. As a result, radical Conservative ideas of promoting a free-market economy received high support from the electorate, and the ruling party remained in power, with an increased majority of 61%.

This majority in the 1983 general elections imbued the Conservative government with confidence. Second, implementing radical reforms required economic and social readiness from the administration. However, the economic difficulties faced by Thatcher during the first years of governance delayed the process of reformation (Evans, 2018). The Conservative government restructured the economy through several channels, and the main policy directions Thatcher introduced were as follows: (1) massive privatisation of state-owned industries (Table 9), (2) deregulation in product and financial markets and (3) reduction of the power of trade unions (Thompson, 1996). The most radical changes occurred by means of privatisation. Beginning with the *Right to Buy Scheme*, which was introduced in 1980 and gave the legal right to privatise living houses, many previously nationalised industries were privatised. Along with massive privatisation of industries, Thatcher's government implemented deregulation policies in the product and financial markets⁵⁰.

⁴⁹ Crisis in Argentina, Falkland's War

⁵⁰ Main deregulations that took place in the period were as follows (Pratten, 1987):

- Transport Act of 1980 provided long-distance buses and fare reductions of 40%.
- Transport Act 1986 provided urban bus services.
- Health and Social Security Act of 1984.
- Financial Services Act of 1986.

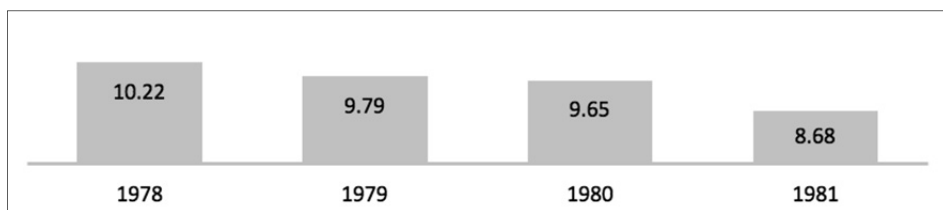


Figure 47: Reduction in government spending (government spending [£ bn])

Source: Author's work based on World Bank dataset

Table 9: British main privatizations from 1979–1992

Year	Company or industry
1979	British Petroleum, Government Council housing
1981	British Aerospace, Cable and Wireless, British Sugar Corporation
1982	Britoil, National Freight Corporation, Amersham International
1983	Associated British Ports, British shipbuilders, British Transport Hotels
1984	British Telecom, Jaguar, Enterprise oil, Sealink Ferries
1986	British Gas, National Bus Company
1987	British Airways, British Airports Authority, Rolls Royce, Rover (trucks), Royal Ordnance (military products), Royal Dockyards
1988	British Steel, Rover (automobiles), National Express (intercity bussing)
1989	The 10 regional water agencies, Short brothers (Aircraft)
1990	National Grid and 12 regional electricity distribution firms, Girobank
1991	National Power, PowerGen, Scottish power, Scottish Hydro, Forth ports
1992	Trust seaports, motorway service stops, British Technology Group

Source: Compiled by author based on Pratten (1987)

From the second term, the Conservative government began a radical reformation. Public sector reforms were introduced, and their drivers during this period reflected ideas developed in the theoretical model of the thesis. Policies introduced in the first term of the Thatcher's government were lighter in terms of spending cuts and reduction of the public sector, but they became more radical during the second term (Figure 47). In other words, during Thatcher's first term, the *dAST* (change in the size of public sector) was not as high as in the second term; therefore, the slope of the public/private production curve in the second term was steeper. Multiple reasons led to this change in Thatcher's governance. First, the support from the electorate played a significant role in reform formation and development. In the first term of governance, a high level of uncertainty was related to voters' reactions on policies offered.

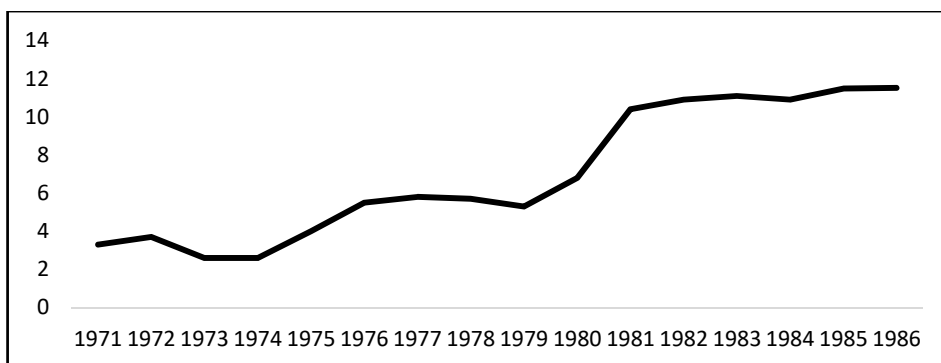


Figure 48: Unemployment rate (% of total labour force)

Source: Compiled by the author based on data from National Statistics

The Next Steps Initiative, which was launched in 1988 by Margaret Thatcher's government, aimed to transform the public sector so that all services were provided by market or market-like arrangements, rather than government departments. Privatisation had increased revenue (from asset sales) for the government. Additionally, it increased the efficiency (lowered costs) of the nationalised industries (Gamble, 1994). The aim of privatisation and deregulation was to increase an overall efficiency in the use of resources, which increased customers' power and provided freedom for businesses from various limitations. In terms of the theoretical model, the aim of privatisation policies of the Conservative government was to increase the overall output of production (private + public), while decreasing the ratio of public sector size to total output. Thus, this development had to (and was) accompanied with policies that incentivised private investments. Reforms introduced by Thatcher changed the framework of the relationship between the government and private sector, especially regarding organised labour.

The largest obstacle Thatcher's government faced was the power of trade unions. This power was largely based on the legal immunity for strikes, which gave incentives for strikes that were backed by unions. The Conservative government introduced the 1982 Act⁵¹ and 1984 Act⁵² to demolish this power. As a result of trade union reforms (alongside with other economic reforms), membership in unions declined dramatically from 52% to 44% (National Statistics), self-employment increased, and the number of smaller firms grew. Although unemployment increased, inflation continued to decrease (Figure 49). Given the inflation-unemployment trade-off (Philips curve), Thatcher's government clearly was more oriented towards solving inflation, which is a typical behaviour of right-wing political parties in power. While ideologically

⁵¹ The strike immunity was allowed only in cases when the issue at hand regarded wages and conditions of work and was only against the actual employer.

⁵² Provided union members power over the management of the union. The immunity of strike had to be supported by the majority of union members based on voting.

left-oriented governments are more supportive of unemployment-decreasing policies, right-wing governments are more focused on inflation reduction. Although Thatcher's government aimed to shrink public expenditure, the government spending increased overall, but declined as a percentage of GDP. Inflation kept declining since 1980. Volume of production in the service sector increased, and manufacturing sector decreased. Reformation of the tax system was also one of the main goals of the government. When Thatcher came into power, marginal tax rates were too high, particularly those in far-high and far-low income groups. Tax policies implemented during the period increased VAT (Figure 50) but decreased income tax, and corporate tax rates decreased (Figure 51).

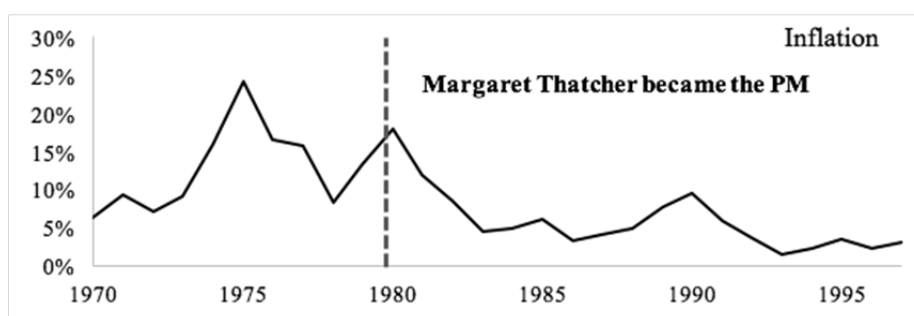


Figure 49: Reducing inflation

Source: Compiled by the author based on data from National Statistics

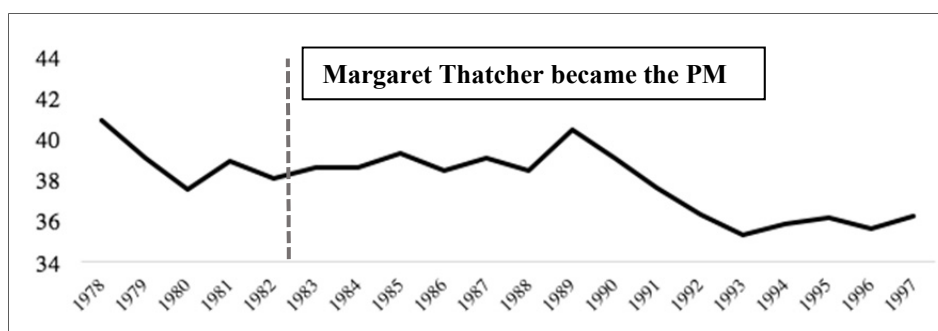


Figure 50: Taxes on income, profits and capital gains (% of revenue)

Source: Author's work based on World Bank dataset

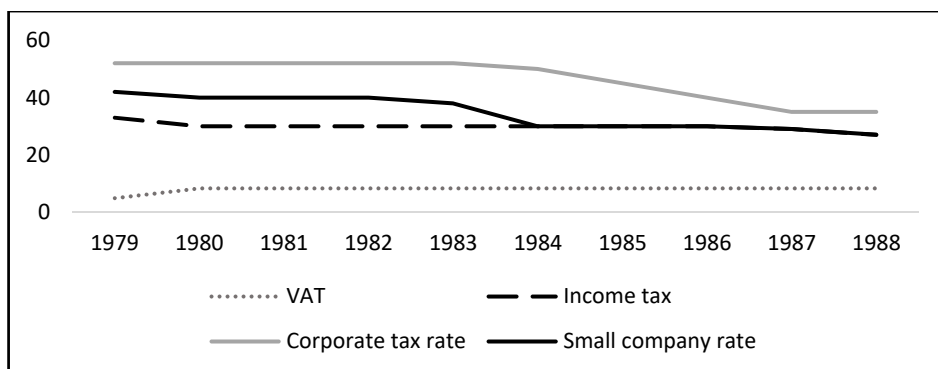


Figure 51: Tax rates (%) under Thatcher

Source: Author's work based on Matthews and Minford (1987)

In 1990, John Major became UK prime minister instead of Margaret Thatcher. After the Conservative party won the 1992 general elections by 51%, Major gained a second term as the prime minister of Great Britain until 1997. In 1991, the *Citizens Charter* was launched; this charter aimed to implement private sector practices into the public sector and improve it by increasing the transparency, accountability and reliability of the administration. The Charter Mark, the customer service excellence accreditation for organisations, was also introduced.

1997–2020 Post-Thatcherism

The post-Thatcherism period can be divided into three sub periods: (1) New Labour governance of 1997–2010, (2) coalition government of 2010–2015 and (3) Conservative regime of 2015–2020. New Labour was a governance period of the Labour party from 1997–2010 under the leadership of Tony Blair and Gordon Brown. The party's political thinking during this period provided a combination of capitalist and socialist ideas. The Labour party accepted the radical changes introduced by Margaret Thatcher and abolished *Clause IV of the Labour Party's Constitution*, which expressed the party's commitment to nationalisation (Stoker, 2017). In 1997, the Labour Party replaced the Conservative regime by winning the general elections with 63% of majority. The Labour party decided to change and reform its political ideology from traditional socialism to reclaim the support of the electorate. After the defeat in the general elections four times in a row (1979, 1983, 1987 and 1992), leaders of the Labour party understood that voters demanded modernisation of political thinking (Heath et al., 2001).

In terms of the theoretical model, reflecting the change in voter preferences implies an increase in the lower boundary of the private/public production ratio w from w_B to w_C (Figure 52). The results of the theoretical model suggested that such a change in the lower boundary ensures less steep development of the private/public production ratio. Therefore, in cases when the electorate does not

tolerate the radical decrease of the ratio between private and public production, policies implemented by governments are also less thorough. These forecasted developments of the theoretical model are true in case of the New Labour reforms in the late 1990s. The Labour party modified its policy to shrink the private sector less in order to satisfy the needs of the electorate. Additionally, the party attempted to eliminate the links to trade unions.

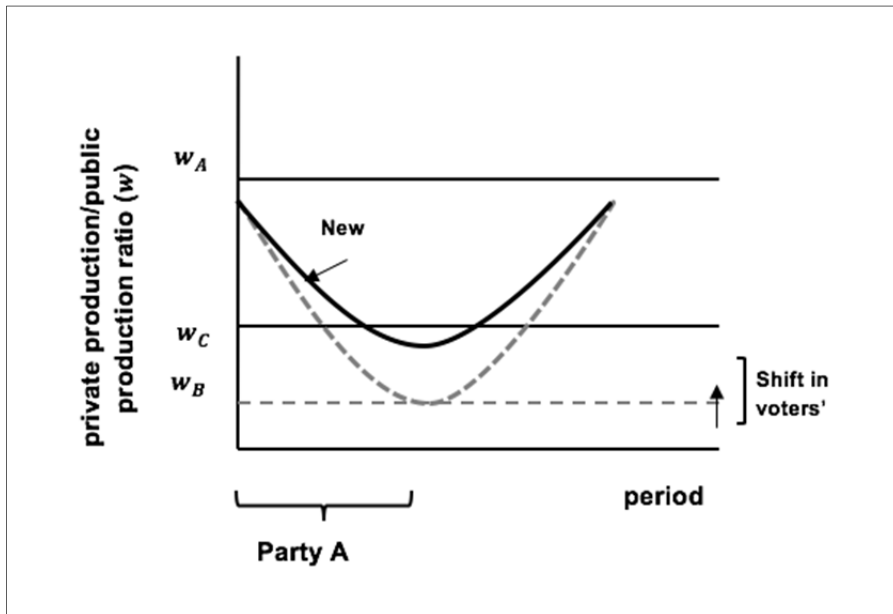


Figure 52: Applying the theoretical model to the New Labour governance period

Source: Author's work

This political rebranding of the Labour party is evident in the party's electoral manifesto for the 1997 general elections. The Labour Party Manifesto of 1997 contained the following main policy directions: (1) Modernisation of political institutions, (2) further democratisation of the political system (increased participation in institutions and decision-making processes) and (3) decentralisation.

These policy initiatives were reflected when the Labour government was elected in 1997. The Labour party stayed in power three terms in a row by winning the general elections in 2001, with 63% of majority, and in 2005, with 55% of majority. The main acts passed and policies implemented during the Labour governance from 1997–2010 were as follows (Coates et al., 2000):

- *Modern Public Service for Britain: Investing in Britain* established the government's overall plans and policies for economy and public spending for each department.
- *The Employment Act of 2002* introduced new rights to paternity and maternity leave and pay (Qc and Morris, 2002).

- *Policy Reform Act of 2002* created community support officers.
- *The International Development Act* provided spending for reduction of poverty.
- *The New Deal* was introduced in 1998 and aimed to decrease unemployment by providing various opportunities, such as training employment subsidies and voluntary possibilities for the unemployed (Walker and Wiseman, 2003).
- *Referendums Act 1997*, *Government of Wales Act 1998*, *Scotland Act 1998* and *the Northern Ireland Act 1998* created devolved legislatures: a Scottish Parliament, Welsh Assembly and Northern Ireland Assembly.
- *Regional Development Agencies Act 1998* established nine Regional Development Agencies (RDAs) for economic development of government offices.
- *Registration of Political Parties Act 1998* made registering a political party mandatory.
- *Greater London Authority Referendum Act 1998* and *Greater London Authority Act 1999* created the *Greater London Authority* with a directly elected *Mayor of London*.
- *Lords Reform: House of Lords Act 1999* removed the right to inherit the seat in House of Lords and as a result decreased the membership number.
- *Local Government Reform: Local Government Act 2000* reformed LG in England and Wales and gave power to the LG to promote economic well-being.
- An agreement (GFA) in 1998 gave provisions to governance in the British part of Northern Ireland and defined the relationship between Northern Ireland, the Republic of Ireland and the UK.

After the 2010 general elections, a coalition government of Conservatives and Liberal Democrats was formed (Cameron–Clegg coalition)⁵³; this was the first coalition government since the Second World War. Since none of the parties managed to collect the overall majority (326 seats), the UK faced a hanging parliament. The Conservative party received 36% of the votes and 47% of seats in parliament, while the Labour party gained 30% of votes and 40% of seats. Liberal Democrats received 23% of votes and 9% of the seats, which is the highest number of seats and votes collected by a third party (party besides Conservative and Labour) in the political history of the UK since the 1940s (Figure 53).

⁵³ The coalition was called the Cameron-Clegg coalition as David Cameron was the Conservative leader and Nick Clegg was the Liberal-Democrat leader.

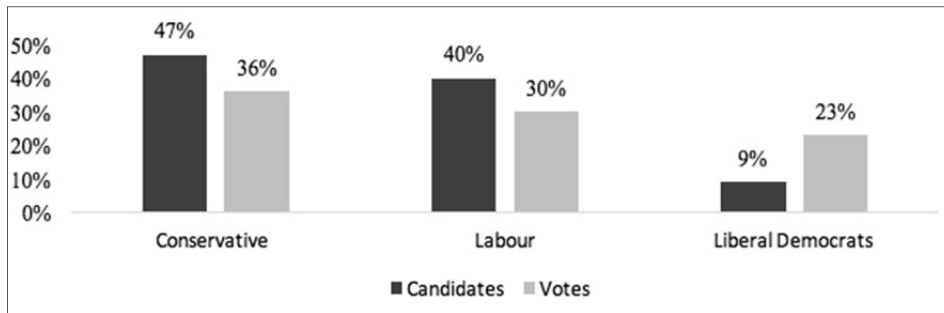


Figure 53: 2010 general election results

Source: Author's work based on the Comparative Political dataset (Armingeon et al., 2018)

The coalition concept was also introduced in the theoretical model constructed in this thesis. Several parallels can be seen between the findings of the model and the actual development of reforms under the coalition government in the UK. According to the theoretical model, policies implemented by coalition powers are less radical in terms of public sector modifications. Thus, if a political party with right-wing ideology enters into a coalition with a centre or left-wing party, the coalition government is not expected to decrease the size of the public sector significantly. Similar development can be observed in the case of the UK. According to *The Coalition: Our Programme for Government*, the coalition agreement that was introduced after the 2010 general elections was essential for reducing the government deficit while also increasing funding for the National Health Insurance and education (*Treasury, H.M.S., 2010. Spending review 2010*). The coalition government introduced several tax policies. To cover people with the lowest salaries, the personal income tax allowance was significantly increased. *The Budget Responsibility and National Audit Act of 2011* allowed the already existing Office of Budget Responsibility to become involved in UK budget preparation.

The policy paper *2010 to 2015 Government Policy: Welfare Reform* aimed to make the benefit system fair and affordable for everybody and introduced various new benefits. One new reform was Universal Credits, which was established in 2013 to transfer many working-age benefits into a single payment and provide personal independence payments (PIP), a benefit for long-term ill-health conditions and disability. Besides economic reforms, the coalition government also implemented political policies. The fixed term parliament Act of 2011 introduced the five-year fixed term for general elections in the UK. The Conservative party, which generally favours decreased spending policies, introduced acts that support welfare reforms and social benefits. The theoretical model's findings related to coalition formation and its impact on the public sector reformation aligned with the case of a coalition government in the UK.

Three general elections took place between 2015 and 2020 in the UK. The general elections of 2015 were the first at the end of a fixed-term government in UK history. The Conservative party won the elections under David Cameron, with the 36.8% of total votes, which equated to 50.8% majority by seats in parliament. The Conservative party published its manifesto before elections. Key points of the electoral promises included the following: (1) reduction of the deficit and achievement of surplus, (2) an increase in health spending (on NHS) and (3) an expanded housing scheme and benefits. Multiple key factors played an enormous role in developing the British economy and policy during the Conservative governance. One such influencing event was the decision to leave the EU as a result of a national referendum that occurred in June 2016. In the 2017 UK general elections, the Conservative party regained the victory but could not form the majority in parliament. The Conservative party gained 48.8% of seats, and the Labour party received 40.3% of seats in the parliament. After losing the majority, the Conservative government formed a minority government with a confidence and supply agreement⁵⁴ with the Democratic Unionist Party (DUP) from Northern Ireland. The economic policies of the Conservative party aligned with typical right-wing party policies. The economic results were as follows: The general government deficit kept declining (Figure 55), while the unemployment rate decreased significantly (Figure 56). Despite certain economic achievements, however, the Conservative government struggled to keep GDP growth stable which decreased over the period (Figure 56).

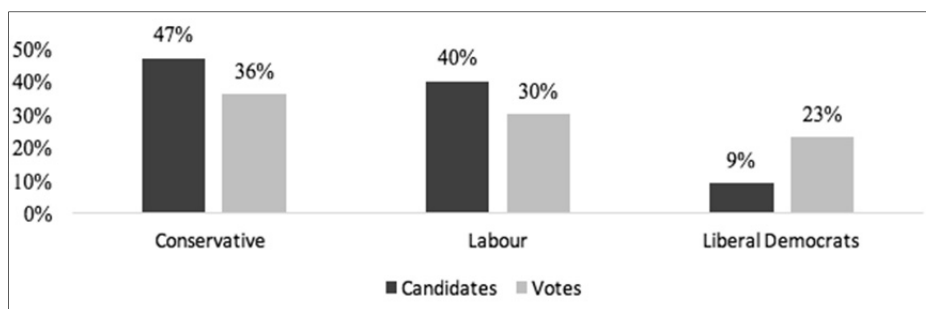


Figure 54: Government debt in the UK as % of GDP

Grey area denotes the coalition government period.

Source: Compiled by the author based on the data from National Statistics (UK)

⁵⁴ Agreement by which a party or member of the party supports the minority government.

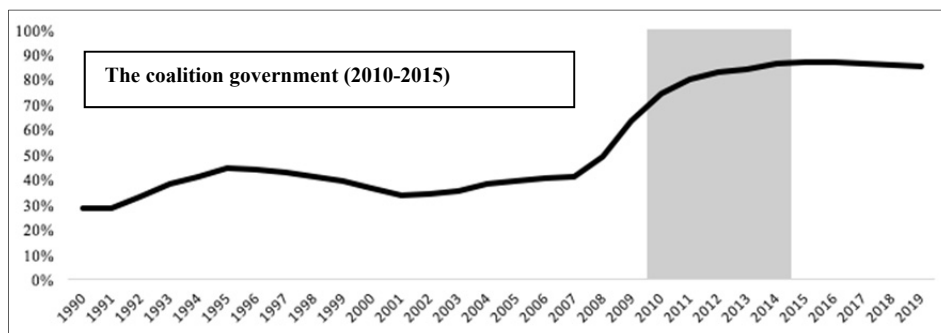


Figure 55: Government deficit in the UK as % GDP

Source: Compiled by the author based on the data from National Statistics (UK)

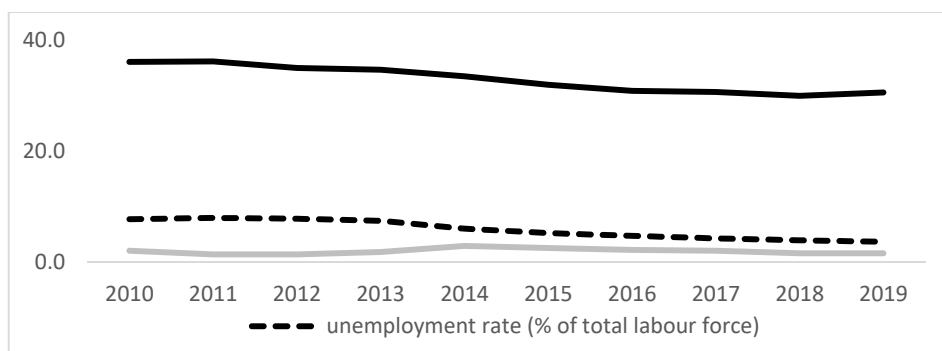


Figure 56: Unemployment rate, GDP growth and tax rate for 2010–2019

Source: Compiled by the author based on data from the World Bank database

In the 2019 general elections, the Conservative government won by 56.2% of the majority, and Boris Johnson became the Prime Minister. This was the largest majority gained by the Conservative party since Thatcher. The main slogan of the 2019 Conservative manifesto was to “get BREXIT done!” The Tories also promised increased support and spending for NHS, police and the infrastructure. The major unanticipated event that occurred in 2020 was the COVID-19 pandemic, which highly influenced all aspects of the economy and placed the government’s plans and promised policies for the elected period under scrutiny. Pandemics were delineated in the introduction chapter of this thesis.

The development of the public sector in the UK from 1991–2019 reflects the considerations of the theoretical model. The New Labour government of 1997–2010 shifted policies towards consensus, which implied increased support for a free-market economy and accounted for changes implemented by Thatcher’s government. Nevertheless, ideological differences, in terms of supporting in-

creased or decreased size of government, were visible in the public sector evolution of the period.

In June 2016, the UK-EU membership referendum, also known as the **Brexit referendum**, occurred. The results of the referendum were 52% of votes in favour of Britain's leaving the EU. David Cameron resigned from the office of Prime Minister the day after the referendum, and Theresa May became the leader of the Conservative party and the new Prime Minister of the UK. EU membership and termination of this membership was a political decision, and the political and economic incentives and consequences of Brexit have been discussed by various scholars (Tetlow and Stojanovic, 2018; Belke and Gros, 2017). Theories regarding the UK's future governance have also been discussed (Clarke et al., 2017). In this section, I will concentrate on expected implications related to changes in party politics in the UK due to Brexit. The main question that should be answered is as follows: *What impacts will Brexit have on political institutions and policies in the UK?* Leaving the EU was not formally addressed in the electoral manifestos of any major political party in the UK. However, some aspects of this action were communicated to different groups of the electorate to maximise votes (Shipman 2016). Two main positions were evident. For the Conservative party, Brexit was an opportunity to continue Thatcher's policies, which were compromised by recent Tory governments. Other voters who supported Brexit preferred the UK deregulated from international control but supported the government's intervention in the economy and in job creation. Before Brexit, the Labour party advocated leaving the single market and regaining control over immigration (Gable, 2018). Effects of the Brexit referendum have already been seen in all the UK's main political parties. Leaving the EU influenced the general election of 2017, which occurred after the referendum (Hobolot, 2018), and the election brought back traditional party lines for the electorate (Heath and Goodwin, 2017). Being part of the EU imposed certain restrictions on the UK, requiring the UK to adapt to a system of law influenced by the European continent. The legislations of the EU shaped the political processes in the UK, and both political parties, Conservative and Labour, compromised part of their ideological aims. As institutions of the EU shifted UK policy and governance, leaving the EU may advance a more traditional party system.

5.4 Key findings of the qualitative assessment of public sector reforms in UK (1945–2020)

The British administrative system and political governance underwent major transformations from 1945–2020. During this period, two main parties were dominant: the Labour (corresponds to public sector-increasing party as in the theoretical model) and Conservative (public sector-decreasing party as in the theoretical model) parties. The political history of the UK during this period displayed a constant governance cycle. From 1945–2020, the UK witnessed more than 20 general elections, eight of which resulted in a change to the ruling party (Figure 57).

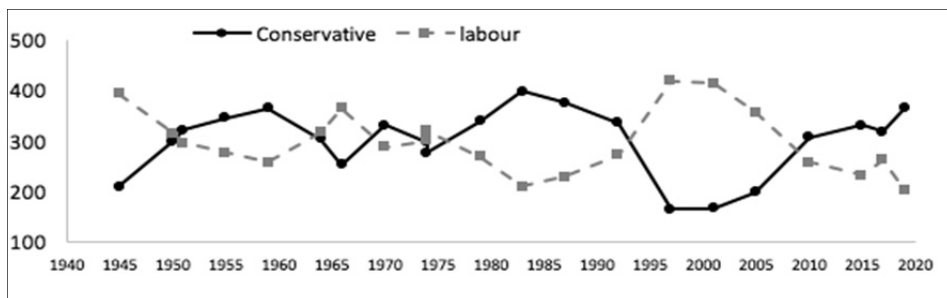


Figure 57: Political cycle in the UK: Power shifts between the Conservative and Labour parties (1945–2020)

Note. Figure shows number of seats won by the Conservative and Labour parties in the parliament for each election year.

Source: Author's work based on political data from the archives of the House of Commons Library

In addition to displaying clear evidence of a political cycle (changes in power shifts), the UK experienced major developments in the public sector over this period. Figure 58 shows how the ratio between private and public production changed under the Conservative and Labour parties in power. In most cases, an increase in the ratio was evident under the Conservative party in power. This aligned with findings of the previous literature that emphasised the partisan aims of government and supported the working hypothesis of the theoretical model. Based on the data from ONS, the ratio between private and public production was, on average, 2.5% lower under the Labour government compared to the ratio under the Conservative party.

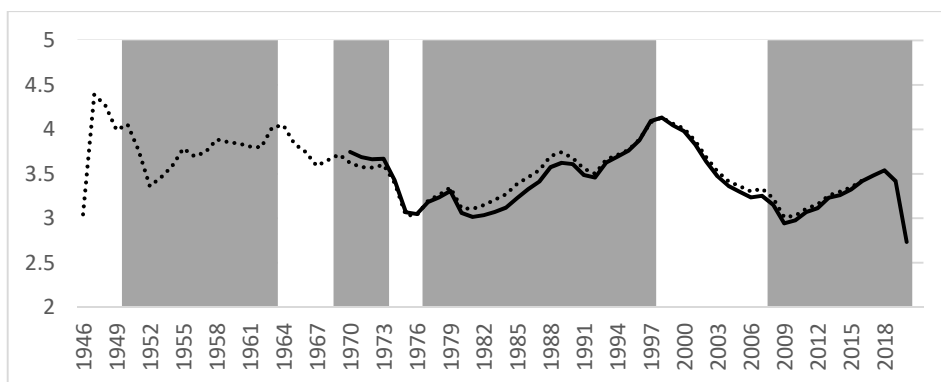


Figure 58: The ratio between private and public production under the Labour and Conservative governments in power in the UK between 1946 and 2020

Note: Grey area represents conservative governance period

Source: compiled by author based on the data for 1946–2016 (dotted line) from A Millennium of Macroeconomic Data⁵⁵ and the data for 1970–2020 (bold line) from World bank dataset

The public administration and political system of the country also experienced two major consensus periods. The first consensus was formed after World War II and is known as the post-war consensus. This consensus was based on the establishment and promotion of a welfare state. The second consensus emerged as a result of Thatcher’s radical reformation in the 1980s and continued until 2020. While these consensus periods defined the main movements of public sector development, they also drove political transformations, especially in terms of party politics and ideology. The main political parties in the UK—the Labour and Conservative parties—also underwent major changes from 1945–2020. In 1945, the Labour Party differed from that since 2000, as did the Conservative party. Thus, while the public sector underwent various developments, the political parties also experienced similar transformations. Although the Labour party has remained relatively left-centred compared to the Conservative regimes, the ideological position of both parties moved from left to right or right to left as the political and economic environment developed around them. This was especially evident during the consensus periods. The Conservative government of 1951–1965 behaved as a left-wing party, while the Labour party (New labour) from 1997 proposed policies that were considered right-winged. Figure 59 represents an overview of the public sector reform periods in the UK, along with changes in the government. The figure summarises the evolution of the public sector in the UK from 1945–2020. Changes in ideological positions

⁵⁵ The dataset contains a broad set of macroeconomic and financial data for the UK extending, in some cases, to the C13th with one or two benchmark estimates available for 1086, the year of the Domesday Book. The dataset was originally called the “Three centuries of macroeconomic data” spreadsheet but has now been renamed due to its broader coverage.

of the political parties, as well as transformations in the public sector in the UK resulting from the two main consensus periods, are illustrated by the theoretical model in the figure. The graphic representation of switches in governance and their effects on public sector reform for the two main consensus periods of the UK is a simplified example of the model; the movement of the lower/upper boundaries of the public/private production ratio and the ratio's path were far more complex in reality. The simplified version described by the theoretical model below presents three main points from a theoretical point of view, which was supported by the case of the UK:

1. Changes in the ideological positions of the ruling parties and voters' preferences or expectations were interconnected.
2. The interrelation of these two affected and determined the size of the public sector.
3. The size of the public sector and wider economic/political setting affected voters' preferences and parties' ideological positions; therefore, the entire process is two-directional.

The first point was reflected in the movement of the Labour and Conservative parties' ideological positions. For example, the Conservative party supported a welfare state in the 1950s. Figures 66–70 in Annex 4 show the development and changes of both parties' ideological positions based on the electoral manifestos for all periods. The adjustment of the political parties to the needs and requests of electorates in the UK supports the assumptions of the theoretical model. The second point is straightforward; it reflects the changes in policies adopted by the Labour and Conservative governments, along with changes to the ideological positions of the parties. The Conservative reforms under Thatcher provide a good example of the interdependence between the ideology of the ruling party and reforms passed by the government of that party. The Conservative manifesto of 1981 was characterised by preferences for denationalisation and represents the most right-wing policy-promising and promoting manifesto among all Conservative electoral manifestos in British history. Consequently, the most radical reformation by a Conservative government was evident in the period following the 1981 elections. Furthermore, the Conservative government received the highest support from voters in the 1981 general election (61% majority). Therefore, the first point discussed above is highly relevant. The third point was clearly reflected by the consensus of the UK. The political parties and electorate of the periods were influenced by the general trends and developments in the economy and politics. For example, in post-war UK, the demand for increased state activities and welfare policies resulted from destroyed infrastructure and the post-war atmosphere in the country, which generally supported nationalisation. Another example is the post-Thatcherism Labour party. The New Labour reforms, which promoted free-market policies, were highly influenced by global economic growth and demolition of trade unions in previous periods.

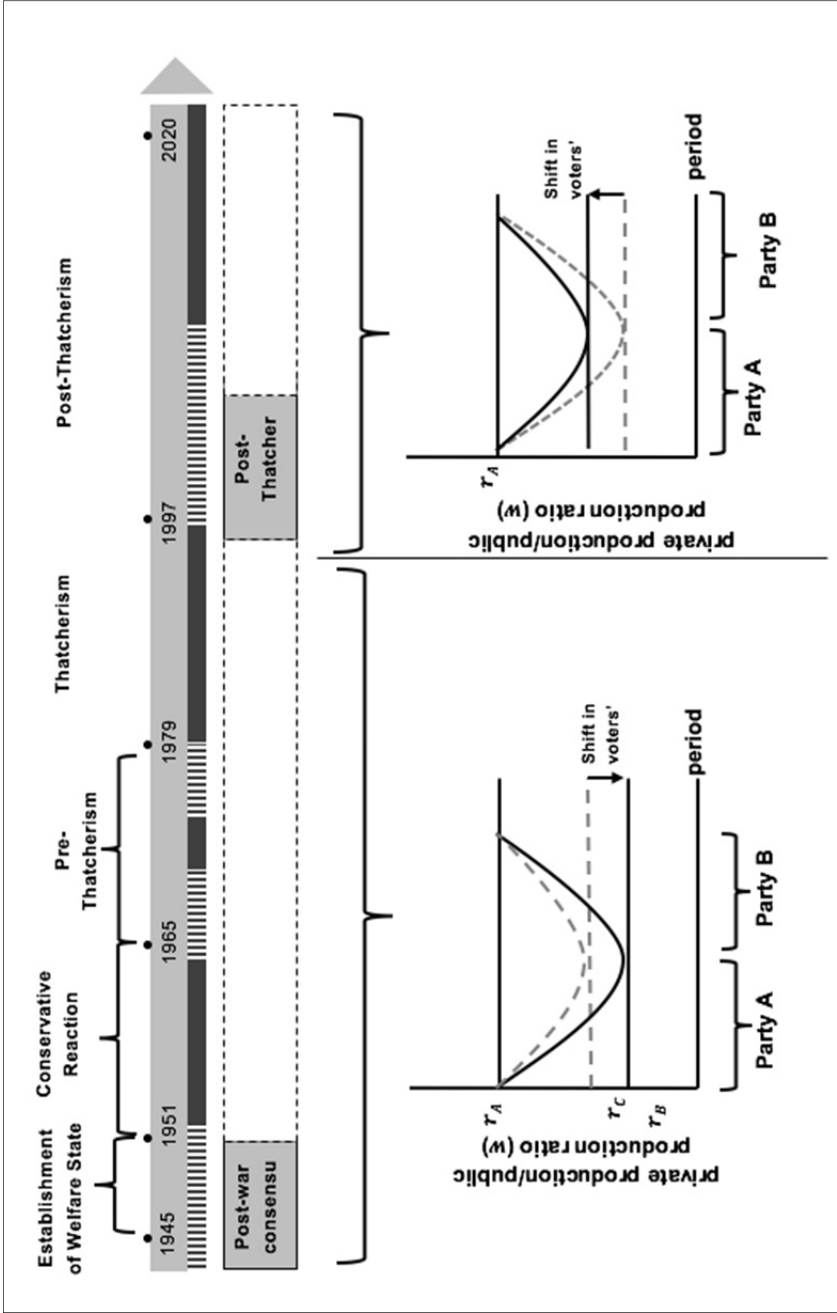


Figure 59: Applying the theoretical model on public sector reformation and political power shifts in UK for 1945–2020
 Source: Composed by author

In sum, the public sector development path in the UK from 1945–2020 is a relevant example of the practical implementations and implications of the theoretical model constructed in this thesis. The main messages and conclusions are as follows (Figure 59):

1. Public sector modifications and changes are consequences of policies implemented by ruling parties.
2. Policies implemented by the ruling party are influenced by the ideology of the government as established in the electoral manifesto.

5.5 Quantitative assessment: The effect of government ideology on the size of the public sector in the UK

Motivation of the analyses

The previous sections provided a qualitative overview of the public sector reforms implemented between 1945 and 2020, offering links between economic consequences and political drivers, especially those related to power shifts in the government and political ideology. Qualitative analyses showed the interdependency between public sector reforms, the political system (ruling party ideology, election timing, etc.) and the role of the electorate in the policy process and political decision-making. Figure 59 (see previous section) shows the development of the ratio between private and public production under Labour and Conservative governments for the period. On average, the ratio under the Labour party was lower compared to the ratio under the Conservative party; the ratio mostly showed a decreasing trend under the Labour party and an increasing trend under the Conservative party. While the qualitative assessment provides comprehensive analysis of the reform drivers, policy consequences and political determinants of public sector reformation in the UK from 1945–2020, this section will concentrate on the same question from a quantitative point of view. More specifically, this section will account for the findings of the qualitative assessment to estimate empirically the effect of the political ideology of the government on the ratio between private and public production. Exploring political drivers of the public sector reforms in the UK using qualitative and quantitative assessments will allow me to provide a complete picture and derive fruitful and meaningful conclusions. Due to the absence of the consistent data on all variables of interest, the quantitative assessment will focus on the period from 1960 to 2020.

The main purpose of the quantitative analysis is to understand whether the political ideology of the government is a determining factor for changes in the ratio between private and public production. The qualitative assessment of reforms showed that political drivers of the public sector exist; however, the previous section also underlined various other economic determinants of public sector reforms. The aim of quantitative modelling is to examine whether the political ideology of the government among other economic variables is an im-

portant influential factor for changes in the public sector. Thus, in this section, I estimate the impact of the ruling party's ideology on the size of the public sector in case of the UK from 1920–2020.

Data and methodology

The aim of the analysis is to understand whether the political ideology of the government has an impact on the ratio between private and public production. Previous literature and other chapters of the thesis have indicated that the ratio decreases under left-wing parties in power compared to right-wing parties. I used the ratio between private and public production based on public sector entries in National Accounts, and the data were taken from the *World Bank National Accounts data* and the *OECD National Accounts data files*. The measure of the ratio between private and public production was the same as the indicator used in chapter 4 (please see chapter 4: *The ratio between private and public production and political cycles in European countries* for more detail). Data on political drivers were taken from the elections data archives of the House of Commons Library. I used the following variables to capture the impact of government ideology: party in power (a dummy variable was used: 1 if the Conservative party was in power and 0 if the Labour party was in power), a dummy variable for the years when change in government occurred, a dummy variable for election years and governance year dummies.

From 1960 to 2020, the UK witnessed 16 elections; however, a change in government occurred only six times. Both the Labour and Conservative parties won general elections, and each came to power six times. The total observation time included 60 years, of which the Labour party was in power for 24 and the Conservative party was in power for 36. The highest vote share gained by the Labour party through general elections was 49%, while the highest vote share for the Conservative party was 50%. The minimum vote share gained was 28% for the Labour party and 31% for the Conservative party. While the Conservative party gained higher votes from general elections on average, the Labour party received higher representation on average in the parliament for the period. The number of Labour MPs in the parliament averaged 310, while the average for the Conservative party was 290. These descriptive statistics highlight the existing cycle in political power in the UK and show that, on average, the Labour and Conservative parties were in equal possession of ruling power for the observed period.

The economic drivers of the public sector used in the analyses include economic growth (GDP growth), government revenue (as % of GDP), government debt (as % of GDP), government deficit (as % of GDP), trade openness (total trade [exports and imports] as % of GDP), unemployment rate and inflation rate. Data on economic drivers were taken from the Office of National Statistics

(ONS) and Bank of England dataset: *A Millennium of Macroeconomic Data*⁵⁶. These variables were chosen according to discussions of the previous empirical chapter (see for more details the chapter 4: The size of the public sector and political cycles in European countries). They also aligned with the findings of the qualitative assessment of the targeted period in the UK (see chapter 5.5: Qualitative assessment of public sector reforms in Great Britain from 1945–2020).

Before estimating the econometric model, I performed several adjustments to the data. First, I applied logarithmic transformations to the population, variable. Then, I investigated plots of all the variables to observe potential trends in the data and perform differencing operations when appropriate. All economic variables showed an increasing trend over time (see Annex 5). These variables were taken as first differences for the analyses to achieve a stationary process in the data. The dependant variable, the ratio between private and public production, was also taken as a first difference. This is in line with the focus of analyses to explore the change in ratio, rather than the size of the ratio under labour or conservative parties in power. The analyses focused on 75 years of public sector reformation in the UK; therefore, the data were characterised as longitudinal and had a time series component (yearly data). To choose an appropriate model for the analyses, I first estimated an OLS regression model and then tested it for serial correlation. The Breusch-Godfrey⁵⁷ test detected first-order autocorrelation. Therefore, I chose to use a Prais-Winsten model to estimate the relationship between public spending and government ideology. This model is often chosen for analyses to cover the AR(1) serial correlations in a linear model⁵⁸. The model is an improved version of the Cochrane-Orcutt estimation model as it also considers the first observation and leads to more efficient estimation results. The model has the following specification:

$$Y_t = \alpha + \beta X_t + \mu_t$$

where Y_t is the time series of the dependent variable at a time t , β is a vector of coefficients, and X_t is a matrix of explanatory variables. Here, μ_t is the error

⁵⁶ The dataset contains a broad set of macroeconomic and financial data for the UK extending, in some cases, to the C13th with one or two benchmark estimates available for 1086, the year of the Domesday Book. The dataset was originally called the “Three centuries of macroeconomic data” spreadsheet but has now been renamed due to its broader coverage.

⁵⁷ In statistics, the Breusch–Godfrey test is used to assess the validity of some modelling assumptions inherent to applying regression-like models to observed data series. Particularly, it tests for the presence of serial correlation that has not been included in a proposed model structure and which, if present, would mean that incorrect conclusions would be drawn from other tests or that sub-optimal estimates of model parameters would be obtained.

⁵⁸ The Prais-Winsten estimator (Prais & Winsten, 1954) considers AR(1) serial correlation of the errors in a linear regression model (sten, 1954). The procedure recursively estimates the coefficients and error autocorrelation of the specified model until sufficient convergence of the AR(1) coefficient is attained. All estimates are obtained by OLS.

term. The error term can be serially correlated over time: $\mu_t = p\mu_{t-1} + e_t$, $|p| < 1$, and e_t is white noise.

Following transformations were applied:

1. $Y_t - pY_{t-1} = \alpha(1 - p) + \beta(X_t - X_{t-1}) + \mu_t$.⁵⁹
2. For $t=1$: $\sqrt{1 - p^2}Y_1 = \alpha\sqrt{1 - p^2} + (\sqrt{1 - p^2}X_1)\beta + \sqrt{1 - p^2}\mu_1$.

The dependent variable in the model was the ratio between private and public production (first difference). The economic control variables included economic growth (GDP growth), the first difference of the government receipts (as % of GDP), the first difference of government debt (as % of GDP) and government deficit (as % of GDP), the first difference of economic openness (total trade as % of GDP), unemployment rate and inflation rate. All economic variables were taken as lagged values to estimate the relationship between ratio in the current year and economic indicators in the previous year. This was because public production decisions for the current year are often made based on observations of economic development in the previous year. Therefore, public production (thus ratio) in year t might be influenced by economic factors observed in year $t-1$.

Political variables included as explanatory factors in the main model were as follows: a dummy variable of ruling party ideology (labour or conservative), an election year dummy, a dummy variable for years when the government changed and a categorical variable for governance years (for example, 1 indicates the first year after election, 2 indicates the second year after election, etc.). The key political variable of interest was the political ideology of the ruling party, and this variable was taken as a lagged value since public sector policies are often agreed upon for the current year in the previous year (Schofield, 2001). Thus, the ratio in year t is an outcome of the political decision in year $t-1$. The ratio between private and public production and the political ideology of the government may have a reverse causal relationship (two- directional effect). Including the lagged value of the political ideology variable also avoided the possible problem of endogeneity.

The same logic (including lagged values in the model) does not apply to other political factors included in the model, such as the election year variable or the change in government. Political parties in power often increase public consumption during the year of election to achieve their opportunistic aims and get re-elected (Ferraresi et al., 2018). Including the election year dummy in the model controlled for this effect. The previous literature has argued that government spending increases in an election year because, in addition to partisan aims, governments also have opportunistic goals to be elected or remain in office (Sieg, 2006). Therefore, to increase popularity and gain more votes, the government in power often provides additional benefits in the year of election (Sieg, 2006). This was observable also in the qualitative assessment of reforms drivers in the UK. An example of such behaviour by the ruling party (i.e., to

⁵⁹ Also known as the Cochrane-Orcutt transformation.

increase public spending dramatically prior to the election to gain votes) was shown by the Conservative government in the period of 1951–1964, when the party came into power three times in a row (see section 5.5: Qualitative assessment of public sector reforms in Great Britain from 1945–2020). A change of a government may also affect spending policies; change in power is often related to various transformations within the governance that require additional resources. Thus, I also included governance years as a dummy variable in the model to control for differences due to potential differences in the behaviour of parties at the beginning and end of the governance period. Furthermore, I included a time trend to control for time effects. The linear time trend was included in the model to explain changes in the ratio due to time differences.

Estimation results and discussion of the findings

The results of the Prais-Winsten estimation model are presented in Table 10. The dependent variable in the model was the ratio between private and public production (first difference). The key explanatory variable of interest in this analysis was the government ideology. Government ideology is a dummy variable: 1 if the ruling party was the Labour party (left-wing party) and 0 if the power was held by the Conservative (right-wing) government. The estimation results showed that government ideology has a statistically significant impact relationship with the ratio. The results showed that, on average, the change in the ratio was 0.065 times lower under Labour governments than under the Conservative party. The same findings were observed by qualitative assessment of reforms in the period (see the previous chapter). Findings are also in line with chapter 4 and the previous literature (Whitten and Williams, 2011; Jensen, 2011; Tavares, 2004). Qualitative assessment of the public sector reforms for 1945–2020 in UK showed that the Conservative and Labour parties were largely influenced by political ideology when designing and implementing public sector policy; this was observed in various cases for the period. For example, the welfare state was established under the Labour government, and despite the post-war consensus period, the Conservative party denationalised the steel industry in 1953. During the pre-Thatcherism period (1965–1979), both political parties began expressing their ideological positions more radically. The Conservative election manifesto of 1970 promoted a radical free-market-oriented economy, and by implementing the Alternative Economic Strategy (AES) programme in 1979, the Labour party implied increased public ownership, economic planning, price controls and import controls. The most significant changes and radical partisanship were seen during Thatcher's government, when the public sector was largely reduced, and the trade union abolished (see section 5.5: Qualitative assessment of public sector reforms in Great Britain from 1945–2020). The estimation result for political ideology variable also aligned with the findings of previous literature, which underlined the partisan aims of the governments (Potrafke, 2010, 2011). According to par-

tisan theory, left-wing governments tend to spend more compared to right-wing governments (Pettersson, 2008). The estimation results showed that the **election year** dummy and the **change in government** dummy did not have a statistically significant effect on the ratio between private and public production.

Economic factors played a significant role in shaping the public sector in the UK. The estimation results showed logical signs and magnitudes for economic explanatory variables included in the model. The results supported findings of the *chapter 4*. **GDP growth** had a positive and statistically significant relationship with the ratio, which was a logical result. While economic growth positively impacts both the private and public sectors, the impact is usually larger on private sector activities (Lin, 1994; Barro, 1990). As a result, the ratio between private and public sectors increases. In post-war UK, rapid global economic growth occurred under both the Labour and Conservative governance and led to an increase of both the private and public sectors (see section 5.5: Qualitative assessment of public sector reforms in Great Britain from 1945–2020). **Government receipts** showed a negative statistically significant effect on the ratio. The higher the government revenue in the previous year, the higher the government's resources to spend in the current year and thus the greater the increase in public consumption (Lee et al., 2013; Anderson et al., 1986). **Government debt** and deficit variables had statistically significant and positive coefficients. Along with other aims of government, one of the key goals is to maintain a balanced budget. When government observes an increase in debt and deficit in previous years, the level of public sector activities in the current year is lowered (Guo and Harrison, 2004). This played a very important role in the public sector and general economic development in the UK, and the qualitative assessment of reforms documented these effects for multiple occasions. For example, after winning the general election in 1974, the Labour party began expanding public spending. Most of the expanded activities of the public sector were financed through debt, which led to the Sterling crises (Bordo, et al., 2009). Thus, the Labour government was forced to enact the Alternative Economic Strategy (AES) programme, which implied a smaller public sector (through increased public ownership, economic planning, price controls, import controls, etc). The relationship between deficit spending and public spending as evident under Macmillan's governance, when the Conservative government decreased taxes and increased public spending, causing an increase in deficits. As government observed the high deficit balance at the beginning of the 1960s, additional reformation of the existing system became necessary. Particularly, income commissions (NICKY) and the National Economic Development Council (NEDDY) were established to gradually introduce a less state-controlled economy (please view previous chapter). Including an **economic openness** variable in the model aimed to control for trading activities, which can affect government policies. However, the results showed that although the variable is negatively associated with the ratio, it did not have a statistically significant relationship with it. The **unemployment rate also did not** have a statistically significant coefficient.

Table 10: Estimation results⁶⁰, the ratio between private and public production as a dependent variable

Variables	Ratio					
	Model 1		Model 2		Model 3	
GDP growth	0.006*	(-1.30)	0.006*	(-1.52)	0.006*	(-1.41)
Government receipts	-0.063***	(-5.32)	-0.053***	(-4.82)	-0.050***	(-3.29)
Debt	0.003*	(1.27)	0.002*	(1.12)	0.002*	(1.11)
Deficit	0.058***	(6.41)	0.047***	(5.71)	0.034***	(3.61)
Economic openness	0.006	(1.74)	0.004	(1.38)	0.004	(1.50)
Unemployment rate	-0.030	(-2.20)	-0.036	(-3.04)	-0.033	(-2.06)
Inflation	-0.007**	(-1.58)	-0.011**	(-2.86)	-0.012**	(-2.00)
Government ideology (right)			0.064**	(3.35)	0.066**	(4.41)
Election year			-0.023	(-1.08)	-0.022	(-0.98)
Change in government			0.109	(2.82)	0.108	(1.71)
Governance year (2)					0.001	(0.39)
Governance year (3)					0.014	(0.34)
Governance year (4)					0.621	(1.01)
Governance year (5)					0.002	(0.54)
Time trend					0.004	(0.81)
Constant	-0.055**	(2.75)	-0.055**	(-2.75)	-0.055**	(-2.75)
Adj. R-squared		0.73		0.78		0.79
Number of obs.		60		60		60

Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The estimation results indicated that **inflation rate** in the previous year has a negative statistically significant relationship with the ratio between the private and public sectors. If high inflation is observed in the previous period, the government may increase activities in the current period. This is especially true for right-wing parties in power. Indeed, the unemployment rate and inflation rate played an important role in economic and political development in the UK for the targeted period; lowering unemployment and inflation rates have always been a major aim of both political parties in power in the UK since the post-war consensus. However, the tools each party used to solve unemployment and inflation challenges were different. Until the post-Thatcherism consensus, the Labour party attempted to work with trade unions to reduce unemployment that resulted from privatisation of formerly nationalised industries. From 1945–2020, the inflation level in the UK reached high numbers a few times and influenced public spending policy. For example, in 1955, the Labour party was forced to introduce controls, decrease public spending and limit the wage increase (see section 5.5: Qualitative assessment of public sector reforms in Great Britain from 1945–2020).

⁶⁰ Prais-Winsten estimation model

6. DISCUSSION AND CONCLUSION

6.1 Recapitulation of purpose and findings

The main theme of this thesis was to investigate the development of public sector reforms under conditions of PBC theory. In other words, I aimed to understand how the political ideology of the ruling party and changes in government (and therefore in ruling ideology) affect the evolution of the public sector. Ideology in this work was understood as political parties' support of increasing or decreasing public production-increasing reforms. Therefore, the focus of the work remained upon changes to the mix of the private and public sectors (the ratio between private and public production) as a result of changes in ruling ideology. Special attention was devoted to voters' preferences on the size of the ratio between private and public production and on elections as a decisive mechanism for changing the ruling party. As such, the scope of this thesis combined a public choice perspective with public finance literature to create novel political economy research that used ideas and theories from PBC theory. To achieve the aims of the thesis and answer the above-explained research question, the following research tasks were completed:

1. Summarising the theoretical considerations from previous literature and identifying gaps and bridges from existing theories.
2. Constructing a novel macroeconomic model that identified the relationship between political parties, voters and the ratio between private and public production.
3. Identifying the empirical trends in democratic societies and empirically investigating the relationship between the political ideology of the ruling party and ratio between private and public production.
4. Case study of one country and comparing the findings of the theoretical model with the empirical observations of the processes.

The thesis addressed these tasks in four main chapters: the theoretical considerations, the model, the empirical analyses of European countries and the case of the UK. Each chapter was developed in answer to each above-stated research task.

In the chapter on *theoretical considerations*, I explored, reviewed and summarised the existing literature on economic theories of public reforms and coordination models from a political economy point of view. The main objective of the chapter was to provide a theoretical background for the model-building exercise and to identify gaps evident in previous research. I discussed models of political and economic coordination and explained the main directions of the theory of PBC. Based on previous considerations, I linked political economy literature with theories on public sector reforms and investigated the literature regarding the relationship between the public and policy. The models reviewed in the chapter concerning political and economic coordination showed that policy formation and implementation are complex and dynamic, involving

multiple players from economic and political markets that are connected under various laws and regulations (Binswanger and Deininger, 1997; Economic systems influence political ones and vice versa; Mueller, D.C., 2003). This interdependency plays a crucial role in the design and implementation of the relevant policy (Henning et al., 2008). Coordination models emphasised governments' aim to maximise the vote function (Henning et al., 2008) and public offices' objective to maximise their own utility functions (Batey and Friedrich, 2000). Furthermore, the models showed that the electorate is sensitive to the economic output of the implemented policy. Therefore, the decision regarding which policy should be passed depends on various factors, including budget optimisation (Henning et al., 2008). The models reviewed in the chapter concerning the theory of PBC underlined two key dimensions of the drivers for politicians and political parties: the opportunistic aim to be elected or to remain in office (Nordhaus 1975; Lindbeck, 1976; Block, 2002) and the partisan aim to implement policies reflecting the ideological values of political entities (Hibbs, 1977).

The chapter on theoretical considerations also discussed political factors identified in the previous theoretical and empirical literature as important incentives for transformation of the public sector (Wetterberg and Brinkerhoff, 2015). Furthermore, it emphasised the lack of economic models that combine the effects of political drivers with general macroeconomic frameworks or PBC theory. The reverse causal relationship between politics and policy was highlighted (Bunse and Fritz, 2012), and the literature on how policies shape the political environment was discussed (Trebilcock, 2014). Particularly, the significance of the research on voters' reaction functions and policy feedback theories was addressed. The chapter on theoretical considerations highlighted the complexity of policy process and the diverse nature of reforms and policies concerning public sector, as well as the importance of political factors and the interdependency between economic and political markets on the subject. Furthermore, the chapter highlighted the gaps in the literature, especially the lack of an economic theory that combines different branches of research (i.e., PBC theory, coordination models, theories of public sector reforms from public finance and public management literature, public choice literature, especially the political economy of elections).

Literature on political economy, public finance and public management was also discussed in the chapter of theoretical considerations (Nordhaus 1975; Lindbeck, 1976; Block, 2002; Hibbs, 1977; Mueller, D.C., 2003; Trebilcock, 2014; and others). However, this literature was able to explain only fragments of the connection between political events and public sector evolution. It mainly dealt with the structure, functions and tasks of the political parties, particularly focused on the impact of politicians on the economy and private sector. Part of the literature indicated how voting is effected by the results of economic reforms and outcomes (Bloom and Price, 1997; Brender, 2003). However, little research has attempted to understand political ideology as a determinant of economic changes (Drazen, 2000); it has focused on how PBC is developed, rather

than how activities are influenced through voting, thus leading to public sector reforms. Part of the literature analysed in the theoretical considerations chapter focused on the connection between political and economic markets (Henning et al., 2008). Some of this literature also covered public sector reforms, but the voters' influence and changes in preferences on policies were not incorporated. Failing to incorporate the political economy perspective in public policy studies is a major challenge that previous research has not been able to resolve fully. Therefore, the research question of the thesis is important, and this work provides a large contribution to the field by integrating theories of political economy to understand public sector restructuring.

In the chapter *The model of public sector evolution as a reaction to vote results*, I formed a new macroeconomic model that provided insight into public sector evolution when governments of different ideologies are in power. I explicitly focused on public and private production development and how the ratio between them changes when ruling parties change. The macroeconomic model constructed in the chapter represents a political economy model and an extension of traditional public choice literature (e.g., Downs, 1957; Buchanan and Tullock, 1962; Arrow, 2012; Mueller, 2003; Niskanen, 1998; Frey and Schneider, 1978; Frey and Lau, 1968; Lau and Frey, 1971). It uses a Keynesian framework to underpin the relationships between political power shifts and public sector reforms and changes. The model formulated in the chapter explains how changes in the ruling party and, therefore, in government ideology influence the size of the public sector. The model was developed by introducing the simplified closed economy scenario, which was gradually advanced through inclusion of key factors and variables, such as fixed election dates, investment, interest rates, volume of money, taxes, budget, PD, coalition concept, exports and imports. The model was also developed into a two-country open-economy case, which explained power shifts in a two-country scenario and the effects of political changes in one country on those of another.

The model describes the cyclicity in the evolution of the public sector. In other words, public production-increasing and -decreasing governments change each other as a result of election outcomes. Voters preferences on policy concerning the size of public production shift according to the ratio between private and public production, and elections are won by private sector-supporting governments if voters feel that the size of the public sector is large. Consequently, the public sector-supporting party takes power if voters feel the scarcity of the public sector. Therefore, voters' aggregated preferences on implemented policy change, and voters are sensitive to the ratio between private and public production, which determines which party is in power and thus leads to cyclical changes (increase followed by decrease) in the size of public production.

The model provided two types of framework. The first framework was based on continuous election periods without fixed election dates in which government changes once the lower or upper boundary of the ratio between private and public production is reached. The second framework introduces fixed election dates, which gives governments the ability to make decisions on policy im-

plementation strategies and modify policies closer to the election dates. Model investigates various scenarios based on the different size of the initial public production and shows that the level of public production in the first period, influences the development of the ratio in next periods. In other words, if similar public sector reforms are undertaken in economies with a historically low public sector and economies with a higher public sector, then the ratio between private and public production in first type of economy (with low public sector) would be higher. This was evident in the Danish welfare reforms in the 1980s and 1990s, which can be explained in terms of the path dependency (Torfing, 2001)⁶¹. The model also examined effects of changes in the lower and upper boundaries of the ratio and showed that governments can adjust their policy implementation strategies according to these boundaries. If boundaries are tighter, then critical points are reached more quickly, and the change of government occurs over a shorter period. If boundaries are wider, then the change of government is delayed, and governance periods are longer. Political parties in power also react to the changes in boundaries. Under tighter boundaries, the ruling party may pass less-radical policies to reach critical points of the ratio over a longer period, while under wider boundaries the opposite is true. This was evident during the post-Thatcherism period in the UK, when the New Labour government shifted its preferences towards a centre ideology to reflect changes in voters' preferences after the radical privatisation of the 1980s (Heffernan, 2000).

Introducing an investment function to the model linked the interest rates with the ratio between private and public production and highlighted the influence of changes in autonomous investment levels on the ratio. An increase in investments shifts the ratio up, while higher interest rates drive the ratio down. Changes in investments may happen independently from government policies, but parties in power act according to changes in investment, thereby adjusting policies. The model provided the opportunity to investigate various scenarios of government behaviour as investment levels changed. In doing so, it highlighted two main drivers of government decisions: the opportunistic aim to remain in power and the partisan aim to implement desired policies according to political ideology. The introduction of interest rates to the model also linked the development of the ratio with movements in money market. Speculative demand for money depends on the interest rate, so money market equations were incorporated into the production model through interest rate. An increase in the volume of money shifted the ratio up. Similar to changes in investment levels, changes in the volume of money in the economy resulted in different actions taken by different political parties in power. Every government accounts for individual economic and electoral preferences based on both partisan and opportunistic needs, and their behaviour reflects these preferences. Introducing

⁶¹ In the 1980s, the "New Right" government in Denmark did not reduce economic state intervention and public social expenditure but supported the argument of "irreversibility of the welfare state" (Torfing, 2001).

taxes to the model through a consumption function linked changes in tax rates with changes in the ratio between private and public production. An increase in the tax rate shifted the ratio down, which is ideologically left-oriented parties' goal. However, higher taxes also impact voters' preferences, and governments face the trade-off between ideological aims and opportunistic goals. The model also highlighted the channels for public sector financing, such as income tax and PD. Expansionary fiscal policy and increase of the public sector may require governments to adjust financing policies. By introducing PD to the model, balanced, surplus and deficit spending policies were analysed in relation to the ratio between private and public production. PD was linked to the model through budget equation, where public production is a function of tax revenue and PD. The model showed that when parties in power choose to finance expansionary public production by increasing the PD without raising tax rates, then an increase in PD shifts the ratio down. Similarly, if government chooses to pay back the PD while decreasing public production and keeping the tax rates unchanged, the ratio shifts up. Thus, the model identified a trade-off between ideological and opportunistic aims that parties in power face. The findings of the theoretical model (explained above) aligned with previous empirical research in public finance and political economy. For example, Backley and Shepart (1994) provided an empirical analysis of the effect of state-level economic conditions on elections. Brender (2003) explained similar effects of fiscal drivers on election results in Israel, and Revelli (2002) underlined links between taxes and election outcomes.

While most parts of the model used a two-party system as an underlying framework, the model was also extended to a three-party scenario, in which two parties formed a coalition government. The model showed that a coalition government influences the development of the ratio between private and public production. Under coalition governments, the change in the size of the public sector is slower, and the change of government is delayed. The model investigated different scenarios of coalition formation and revealed that political parties' choice to hold or break the coalition depends on the ratio between private and public production at the decision moment (among other factors). Finally, the model was extended from a closed economy scenario into a two-country open-economy model by introducing exports and imports. The results showed that political changes in country I affect the ratio between private and public production in country II and, consequently, the election results. If political parties with similar ideologies are in power in both countries, then the impact on the ratio due to exports and imports in these countries cancels each other out. If political parties with opposing ideologies are in power, then the impact on the ratio is doubled.

In the empirical chapter on European countries, I aimed to illustrate the relevance of the research question of the thesis from an empirical point of view. The purpose of the chapter was to support the working hypothesis of the theoretical model and investigate the relationship between the ideological composition of the government and the ratio between private and public production

in parliamentary democracies. The methodology used in this analysis was an FE regression model for panel data. I used a government consumption and the total consumption data from National Accounts as a proxy for production activities to form the ratio between private and public production. The model was estimated using data for 26 democracies from 1993–2019. In the analysis, multiple datasets were combined, such as the World Bank dataset, International Labour statistics (ILO) dataset and CPDS. The main hypothesis tested by the model was as follows: *Political ideology (left/right) is related to the increase of the size of the public sector*. The results of the FE model showed that ideologically left-oriented governments are more likely to decrease the ratio between private and public production. The model also highlighted the importance of other economic and political factors (control variables) that influence the relationship between political ideology and public reforms. However, the effects of these other factors are less obvious than those of political ideology.

In the chapter on *the case of UK*, I described a historical investigation of the processes of administrative and political reforms in the UK. The aim of the chapter was to strengthen the theoretical and econometric findings of the thesis and provide further insight into policy process. Development of the theoretical model and the case of the UK chapter were undertaken simultaneously to reflect findings of both. This two-way examination of the research question provided deeper and more meaningful insight into the issue. The public administration history of the UK over 75 years showed constant cycles in size changes of the public sector, accompanied by continuous changes in political power between the Labour and Conservative parties. The findings of the theoretical chapter aligned with the process of public sector evolution in the UK. The welfare state establishment period (1945–1950) reflected public sector-decreasing policies from the model, such as nationalisation of major industries (utilities, road, railways, coal industries, steel and iron sectors, fuel and power industries), creation of social benefit and pension schemes and an increased number of public schools and hospitals. Both channels of financing for the public sector that were identified by the model—debt and increased tax rate—were evident in this period. The Conservative party's governance from 1951–1964, during which the welfare state was retained, showed how policies of the government are dependent on electoral preferences, as was also described by the model. As the model predicted, the collapse of the post-war consensus in following period (1965–1979) as a result of the protests by the electorate and the trade union strikes emphasised the interdependency between political and economic markets and voters' role in the decision-making system. The Thatcherism period in the UK highlighted the ideological difference between the Conservative and Labour parties. This period (1979–1997) reflected public sector-decreasing policies from the model, such as massive privatisation of state-owned industries, deregulation in product and financial markets and reduction of trade unions' power. Forecasts of the theoretical model were also supported by the New Labour reforms in the late 1990s, when the Labour party had to agree with another consensus as demanded by voters and thus offered less-radical policy

promises in its electoral manifestos. The two main periods of consensus identified were similar to the shifts in upper and lower boundaries of the ratio between private and public production in the model; they re-defined the political platform regarding public policy in the UK twice over the last 75 years. Public sector development in the UK from 1945–2020 showed that public sector transformations result (among other factors) from ruling parties' decisions based on ideological and opportunistic aims. The investigation of the UK supported the basic hypothesis of the macroeconomic model formulated in the theoretical chapter. In the second part of the UK chapter, I complemented the qualitative assessment of the reform period with quantitative analyses of the same period. I estimated the impact of the government's ideology on the ratio between private and public production, and the results confirmed that the political ideology of the ruling party played a significant role in shaping public sector policies in the UK.

6.2 Limitations

The theoretical chapter used a mathematical (macroeconomic) model as an analytical tool. The aim of the theoretical model was to examine the relationship between political shifts in power and the ratio between private and public production. Many topics influence this relationship; however, only a limited number of factors were incorporated in the model. External non-economic and non-political factors, such as wars, disasters, epidemics, and others, were delineated/, but other economic and political factors were not considered in the model, including technological progress, growth, international economic relationships, quasi-public production, referendums and others.

The model focused on the change in electoral behaviour as a result of changes in public sector reforms. Other factors influence and determine voters' electoral choice, but not all these factors were included the model. One of the key working assumptions of the model regarded the political ideology of the ruling party. While the political spectrum is multidimensional and the political ideology of parties covers various topics (Carroll and Kubo, 2019), political ideology in this thesis was understood in an economic dimension; more precisely, ideology was defined as parties' preferences over the size of public production. Therefore, in examining the impact of the ideology in the theoretical model, the work is limited by its definition. Other important dimensions of ideology were excluded, such as preferences over foreign policy, defence, social values and others. The static determination of ideology on public production of the model prevented analyses of the dynamic processes (i.e., within the framework of elections, election campaigns, voters' learning behaviour on policy and government strategies that are repeated over time). However, some of the dynamic processes were discussed intuitively in respective chapters, and corresponding scenario analyses were presented, such as coalition formation decisions that require long-term planning and evaluation, budget policies and others.

The underlying framework of the theoretical model was a two-party system. The model was also developed into a three-party system with the ability to establish a coalition government. However, other party systems are possible, such as a multiparty system with more than three political parties or a one-party regime (Laver and Schofield, 1998). The results of the model were applicable for all majority governments in multiparty systems (more than three parties). In cases of coalition government between multiple parties (more than two), the results of the coalition case of the model will hold. However, new scenarios should be considered. One-party systems are not covered by the model, and political regimes in which democratic institutions do not exist and elections are not held to replace one party by another, such as communist regimes, are not considered in the model. These were delineated in the delineation chapter of the thesis. Therefore, the findings of the model are limited to democratic societies with established political institutions, elections and legislative bodies. Most economic models, including the one built in this thesis, are based on the rationality assumption. In the present case, voters are assumed to have coherent preferences over outcomes and are expected to act in line with their preferences. Therefore, another limitation of the model is around rationality, as the model does not cover optimistic or pessimistic models of human (voters, politicians) motivations.

The econometric analyses employed in the **empirical chapter** must also account for some limitations. Those limitations are the result of the chosen methodology and the data used to develop the research. The data used in the analyses covered parliamentary democracies from a recent period, 1993–2019. Thus, the results are limited to such political settings, in line with the working restrictions of the theoretical model. The effect of the political ideology on the ratio between public sector and private sector production, which passes through the policy, is also related to other political factors that are not measurable by data. Furthermore, the countries covered by the data were all European parliamentary democracies, but they differed in terms of political systems, such as legislative processes, election rules and political environment (Hix and Goetz, 2000). These factors play an important role in the policy process and therefore also have an impact on the relationship between ideology and the ratio. Therefore, I refrain from claiming causality in these analyses. The results of the model showed a correlation and a potential for a causal relationship between ideology and the ratio between private and public production. However, understanding the exact numerical impact of one variable on another is a challenge that should be resolved by other identification methods. Another limitation is related to the dynamic effects of the policy. The ideology variable is measured as a fixed value between election periods; however, the effect of ideology on public production is not necessarily the same every period. The literature has suggested that ideological beliefs are often realised during the first period of the governance (Grindle, 2017), but information on the distribution and changes in ideology realisation and policy implementation strategies of the ruling party are not available. Other limitations of the empirical chapter are related to the data.

The data analysed in this chapter provided country-level information aggregated for all sectors. However, many effects of ideology can be visible only within certain industries (i.e., health, education, etc.). Moreover, different levels of aggregation, such as regional and municipal, among others, reveal other effects of ideology.

Results from the chapter on **the case of the UK** also face several limitations. Certain particularities exist in the political system of the UK that shape public sector reforms and the public administration processes. Thus, not all analyses from the UK can be directly applicable to other country cases. The UK has a centralised government system; therefore, ideological shifts in the ruling party have a direct impact on the policies implemented throughout the nation. The same is not true in other political arrangements, such as in the USA, Germany or any other country with a federal state system (Besley and Coate, 2003). In such cases, political power changes at a regional (state) level should be considered along with changes in the main legislative body. The UK also has a stable political platform; since World War II, the political arrangements of the country have not changed radically (Clarke et al., 2004). Thus, the country's political institutions and election platforms have long history. Employing similar analyses in countries with unstable political systems will require additional factors to be considered. For example, Georgia (and many other post-Soviet nations) is a parliamentary democracy, but the country is in a transition process of developing its institutions, especially its political ones. Thus, understanding the effect of political ideology on the size of the public sector in Georgia will require considering other factors and interest groups, both political and socio-economic. The UK is officially a multiparty system, but in the last 75 years, two main ideologically distinct political parties have been dominant. In countries where government is often a coalition representation, the analyses of ideology's impact on the economy will be more difficult to be assessed compared to the UK example. In some cases, understanding the ideological influence on the national level will not be possible at all. For example, in countries with a presidential regime, the ideological positions of the parties in power will not affect the policy process directly (Levitin and Miller, 1979).

The link between electoral manifestos and legislation is important in the UK. Policies offered in the official manifesto of the ruling party have various priorities in the UK, and a large part of the reforms initiated by the government reflect these policies (Bara, 2005). This mechanism provides the ability to reveal and connect elections and policy in the UK. In many other countries, such links are not identifiable (Brouard et al., 2018), and connecting policy drivers from the election phase to the implementation phase requires additional analyses. Furthermore, several factors were not fully incorporated and only partially discussed while investigating the UK, such as foreign relations, global economic trends and others.

6.3 Future research recommendations

The thesis can be further developed in various research directions. Future research on the topic of the evolution of the public sector under ideology shifts in political power could focus on extensions of the theoretical model, as well as further investigation of the issue through empirical analyses by means of quantitative and qualitative methods or the combination of both. The research employed and the theory created in this thesis open doors for further, more detailed analyses of the political aspects of public sector-restructuring activities. This thesis brings a unique and important value in the field by establishing a constructive theory that was missing in the literature until now.

The macroeconomic model formulated in this thesis represents a version of the framework that can be extended in various ways. Future research directions are available first by introducing new political and economic variables into the model and second by advancing mathematical applications that underline the analyses. The framework of the thesis provides an opportunity to introduce *economic growth* (both overall economic growth and the growth of private output) to the model. Doing so will advance analyses of public sector-restructuring by considering scenarios under recession and high/low growth periods. Growth could be incorporated in the model by introducing autonomous consumption, which increases (or decreases) over time. Also, economic growth could be linked with population change. The model could be extended to include migration and population decline/increase. Therefore, the model could be transformed to understand the change in the ratio between private and public production as population changes. Another possible extension of the model is to include *technological progress*; bridges can be built between the current stage of the model and *innovation activities*, both in public and private sectors. The model can also be analysed in relation to changes in *wages of the labour* force and consequent developments in production output, as well as shifts in voters' preferences. Furthermore, the model could be extended by incorporating *new interest groups*, such as the central bank, foreign investors or lobbyists. From a one-country and two-country case, the model could also be extended into a *multi-country scenario*, which would explain power shifts in individual countries and their effects on the global production output in private and public sectors. In a multiparty scenario, *globalisation trends* could be incorporated, thus explaining the impact of *free-trade agreements* and *foreign investment policies*. The model could be related to *regional policy* by introducing the distribution of voters according to a regional level, in which voters from different regions react to the ratio between private and public production differently. Furthermore, power shifts at the national level could be extended to changes in political governance on the regional level by introducing budget allocation functions for different regions with corresponding vote maximisation equations. Therefore, the framework can be developed into a model that explains two layers of the economy: the national and regional levels.

The relation between ideology and reform could also be further explored, or that between ideology and size and structure of the public sector. The model could be developed further by advancing the voters' reaction functions on the policy. *Voters' utility functions* could be incorporated in the model to provide better insight into the shifts in electoral preferences. Additionally, *voters' learning function on the policy* could be included in the model to understand the dynamic effects of the policy. The model could also be extended by narrowing it to explain *changes in reform or policy in specific sectors*. Political shifts could be linked to different types of expenditure, such as changing the government expenditure on public health. Government changes could be related to shifts in *social benefit schemes, pension schemes, education policy* and others. Thus, the model can be developed into a narrower sector model. In such cases, additional assumptions might need to be considered related to voters' preferences, or an additional equation may need to be introduced to explain voting behaviour, such as age functions, to explain the sensitivity of the electorate to health and pension policies.

Econometric analyses on the political determinant of the public sector could also be developed in various directions. As one of the key limitations of the regression analyses on this topic is the absence of consistent political data for a large time period, relevant data that quantifies political factors must be developed. The thesis explains the complex relationships between various economic and political factors and the ratio between private and public production. As political variables and production indicators exhibit a two-way relationship—that is, they affect each other in various ways—understanding their exact numerical impact is challenging. *Structural equation modelling*, a multivariate statistical analysis technique, can be applied to the real data to understand the impact of ideology on public production or vice versa. Structural equation modelling is often used to analyse relationships that are structural by nature and to estimate multiple interdependencies in one investigation (Bowen and Guo, 2011). Future research should consider the dynamic effects of policy on the public sector in empirical analyses. Different phases of policy formation and implementation should be modelled or defined separately, because political determinants of the public sector are different pre- and post-election periods (Ginsberg, 1976). Empirical analyses of the data could also be applied to countries besides parliamentary democracies, such as nations with presidential or hybrid political systems. However, in such analyses, different variables should be chosen. For example, in presidential systems, political ideology should not be measured based on the seats of parties in the legislative body, but according to the cabinet seats. Similarly, the work could be extended to decentralised systems, such as federations, unions and confederations; however, focused variables should be chosen accordingly. Future research should concentrate on collecting data on the regional and municipal levels for both election and economic indicators to employ country-case empirical analyses. Cross-national studies have exhibited the issue of unobserved heterogeneity, which cannot be resolved by any statistical technique, as countries have a different

political and economic history. Therefore, comparing them in one analysis is never fully accurate. More robust results might be obtained by investigating one country over a long period. For this reason, I employed empirical observation of processes in the UK. Another possibility to extend the research is to employ analyses only in specific sectors, as some effects of ideology on government activities can be visible only within certain industries. Future scholars should think about reshaping the research question of the thesis with a narrower focus to investigate only certain sectors. Using both disaggregated and aggregated data, as well as national and regional or municipal data, will provide better insights and more consistent results.

The example of the UK allowed analysis of public sector reforms from 1945–2020. Reforms were investigated in line with changes in political power between the Labour and Conservative governments. Many directions for future research on the **political shifts and public sector restructuring activities in UK** exist. Analyses of UK public sector reforms and political changes could be extended to understand the foreign determinants of the public sector reforms in the UK. This could be applied by examining relationships between the EU and UK throughout history, including the motives and potential consequences of BREXIT. Parallels can be driven in this direction, and possible developments can be identified using the two-country model developed in the theoretical chapter. Understanding the economic exchange of goods and services between the EU and UK and connecting it to changes in political factors in both will clarify results and derive further findings.

6.4 Conclusions

This thesis investigated the topic of the ideological orientation of the government, timing of elections, political changes and their effects on the public sector, as well as various fiscal and monetary policy instruments. The research and sub-research questions were answered, and the results of the thesis advance the understanding of public sector transformations from a political economy point of view.

Based on analyses employed in this work, this thesis generated a number of conclusions. First, the formation and implementation of policies on the public sector are fundamentally political. Parties in power that develop and pass reforms function in a political system that shapes their actions. Thus, the policy choice is constrained by institutional and political factors, such as government ideology, election timing, possibility of coalition formation, election results and others. Second, economic conditions, specifically the size of public and private sectors and the ratio between them, are important determinants of election results. Voters' preferences are directly related to policy choice on public sector. Third, policy choice, which is shaped by political factors, is also influenced by economic indicators, such as interest rates, volume of money, taxes, public debt, investments, exports, imports and others. Fourth, the cyclicity in the evolution

of the public sector is reached when voters are sensitive to the size of the public and private sectors and politicians (political parties) are partisan players, implementing policies on the public sector according to partisan ideology. Fifth, understanding political factors in developing, analysing and judging economic policy, especially factors related to public sector, is far more complex than identified in the literature.

Public reforms are part of the political process, which involves many actors and interest groups, such as political parties, elected officials, voters, lobbyists, foreign politicians and the media. It also functions alongside many institutions, such as legislative bodies, courts, electoral campaigns, international organisations, bureaucratic institutions, financial institutions and banks. Understanding all the interactions simultaneously in a single course is an impossible task. However, establishing a broader theory that explains the changes in the public sector in relation to political shifts, such as the model formulated in this thesis, is the first step to unlocking other doors in this direction. The macroeconomic framework developed in this thesis provides lenses through which to view the politics of policymaking related to the public sector. Thus, this thesis provides a comprehensive theory to use as a tool for understanding public sector reforms under political cycles. However, the model only explains certain aspects of the policy, as it is a simplification of reality. Policymakers, advisors, economists and anyone who is involved in the policy process should consider model suggestions and make their own judgments based on case-specific aspects of the actual policy. In some cases, making additional assumptions in the model may be required.

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Annex 1: Descriptive Statistics

Table 11: Countries in the sample

Country	Freq.
Austria	27
Belgium	27
Czech Republic	27
Denmark	27
Estonia	27
Finland	27
France	27
Germany	27
Greece	27
Hungary	27
Iceland	27
Ireland	27
Italy	27
Latvia	27
Lithuania	27
Luxembourg	27
Netherlands	27
Norway	27
Poland	27
Portugal	27
Slovakia	27
Slovenia	27
Spain	27
Sweden	27
Switzerland	27
United Kingdom	27
Total	702

Table 12: Summary statistics of model variables

Variable	Mean	Std. Dev.	Min	Max
Ratio	2.72	0.54	1.73	4.28
Government receipts	43.21	6.92	25.42	59.21
GDP growth	2.51	3.42	-16.23	25.12
Inflation	2.89	3.66	-4.48	31.76
Debt	64.71	35.87	6.28	195.76
Deficit	-2.09	4.35	-32.07	18.63
Unemployment rate	8.50	4.44	2.00	27.50
Economic openness	101.94	54.44	36.16	416.39

Table 13: Correlation table

Variables	Government receipts	GDP growth	Inflation	Debt	Deficit	Unemp. rate	Population	Economic openness
Government receipts	1.0							
GDP growth	-0.2	1.0						
Inflation	-0.2	0.1	1.0					
Debt	0.3	-0.3	-0.2	1.0				
Deficit	0.3	0.3	-0.1	-0.4	1.0			
Unemployment rate	-0.2	-0.1	0.0	0.3	-0.4	1.0		
Population	0.0	-0.2	-0.2	0.3	-0.2	0.1	1.0	
Economic openness	-0.2	0.2	0.0	-0.3	0.2	-0.2	-0.4	1.0

Annex 2: Robustness checks

Table 14: Estimation results with left wing ideology⁶² as a main explanatory variable

Model 3		
LD.Government Receipts	0.004*	(-1.97)
L.GDP growth	0.004***	(2.76)
L.inflation	0.002	(1.12)
LD.debt	0.001*	(2.14)
LD.deficit	0.003*	(1.81)
LD.unemployment rate	-0.006*	(-1.89)
LD.population	-1.626*	(-1.88)
LD.economic openness	0.001	(-0.66)
L.left ideology	-0.001**	(-2.97)
L.Age of Democracy	-0.010	(-1.01)
L.presidential system	-0.030	(-0.83)
L.proportional representation	-0.035	(-1.54)
L.Fractionalisation	0.266**	(2.97)
L.Change in government	0.001	(-0.46)
Election year	0.011	(-1.29)
Constant	-0.223**	(-3.11)
R-squared (overall)	0.571	
Number of observations	562	

⁶² Relative power position of social democratic and other left parties in government based on their seat share in parliament, measured in percentage of the total parliamentary seat share of all governing parties. Weighted by the number of days in office in a given year.

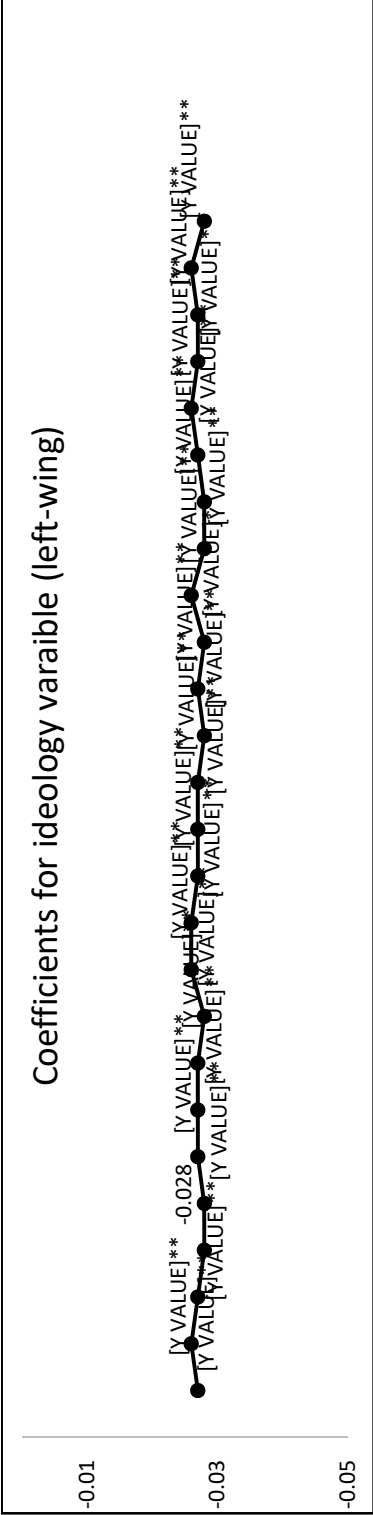


Figure 60: Robustness checks, excluding one country at a time
Source: Author's work

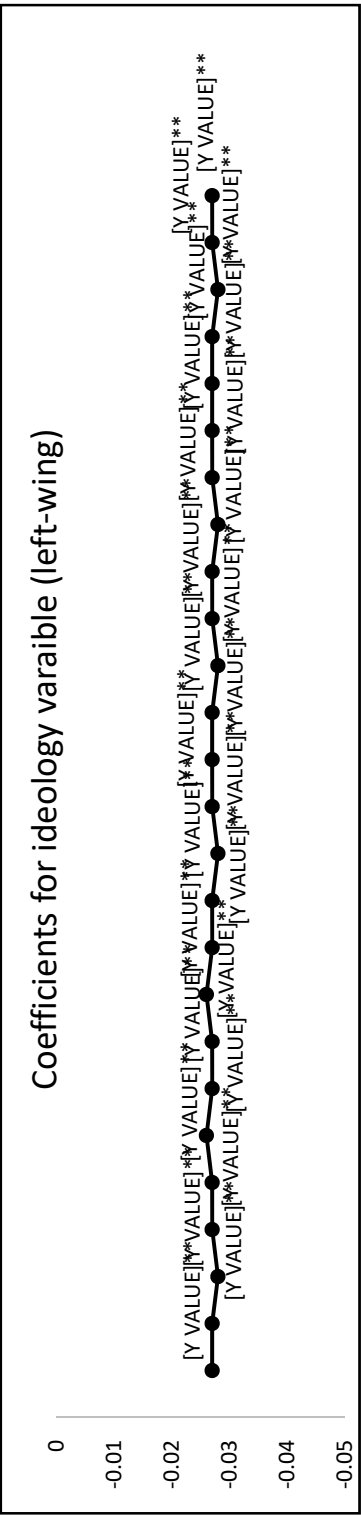


Figure 61: Robustness checks, excluding one year at a time
Source: Author's work

Annex 3: Qualitative assessment of reforms— Case of the UK

Table 15: Changes of political parties in government of the UK (1945–2020)

Year	Ruling party	Year	Ruling party
1945	Labour	1983	Conservative
1950	Labour	1987	Conservative
1951	Conservative	1992	Conservative
1955	Conservative	1997	Labour
1959	Conservative	2001	Labour
1964	Labour	2005	Labour
1966	Labour	2010	Con/Lib coalition
1970	Conservative	2015	Conservative
1974	Labour	2017	Conservative
1974	Labour	2019	Conservative
1979	Conservative		

Source: Compiled by the author based on data from the Comparative Political Dataset

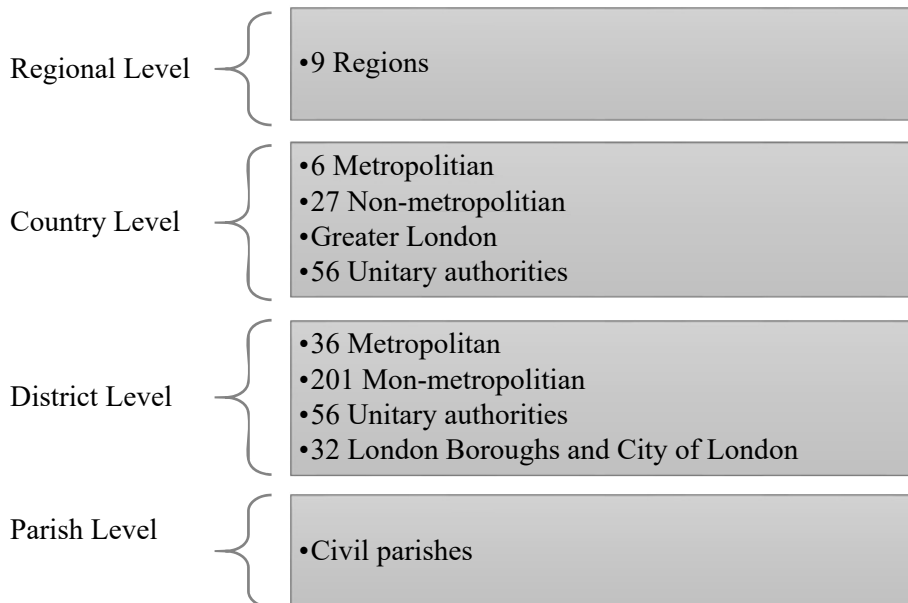


Figure 62: Administration system of Great Britain

Source: Author's work

Table 16: Ministerial departments in the UK and their core functions

Ministerial Departments	Core Functions	Est. year
Cabinet Office	Supporting the government in developing, coordinating and implementing policy; Supporting the National Security Council and Joint Intelligence Organisation in crises management and cyber security matters; Providing improvements in efficiency of reforms, service delivery and the civil service; Developing constitutional and political reforms	1916
The Treasury	Economic policy, Government finance, Public finance policy	1126
Department of Health and Social Care	Health care, NHS, Social services	1988
Department for Work and Pensions	National Insurance, Social assistance, Employment, Pension service	2001
Department for Communities and Local Government	Local government; Urban policy; Housing	
Ministry of Justice	Law, Probation service, Prison service	2007
Home Office	Public order, Immigration, Security, UK visas, Police, Fire	1782
Department for Education	Child protection, Education (compulsory, further and higher education), Apprenticeships	2010
Department for Business, Energy and Industrial Strategy	Business, Industrial strategy, Science and innovation with energy and climate change policy; Business regulation and support; Climate change policy	2016
Department for Digital, Culture, Media and Sport	Culture, Sport, Digital Economy, Media, Broadcasting, Internet, Tourism, Leisure and Creative Industries	1997
Department for Environment, Food and Rural Affairs	Environmental protection, Food production and standards, Agriculture, Fisheries and rural communities	2001
Department for International Development	Administering overseas aid	1997
Department for International Development	Foreign investments, Trade	2016
Department for Transport	Transport network	2002
The Northern Ireland Office	Northern Ireland Affairs	1972
Office of the Advocate General for Scotland	Advise the Crown and Government of the UK on Scots law	1999
Office of the Leader of the House of Commons	Responsible for arranging government business in the House of Commons	1721
Office of the Leader of the House of Lords	Providing support to the leader of the House of Lords	1721
Scotland Office	Scottish Affairs	2003
Wales Office	Welsh Affairs	1999
Export Credits Guarantee Department	Export credit agency	1919
Office for Veterans' Affairs		2019

Source: Author's work

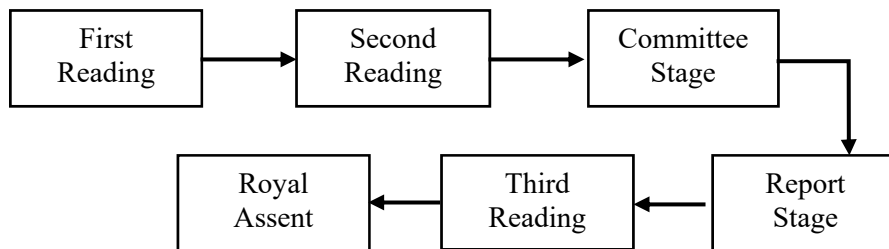


Figure 63: Stages of passing the bill

Source: Author's work

All bills are passed by three hearings. The first reading is an introduction of the bill. During the second reading, the first formal vote occurs. Then, the bill is discussed and examined in the committee stage, and modifications are reported in the report stage. The third and final hearing of the bill takes place at third reading. At the royal assent stage, the bill is approved and becomes an act (Hazzell and Rawlings, 2015).

All processes mentioned above must be fulfilled in one session. As the bill has to be approved by both houses, the process is often long, because both houses insist on making amendments to the bill. Thus, the bill is normally not approved directly and goes through various returns and exchanges between houses. However, the House of Commons has superior power in legislation, and many bills are considered only in the House of Commons. Additionally, the House of Lords does not have an authority (Salisbury convention) to block bills that are written down as promises in the election manifesto of the elected political party.

The above-described process is only one type of legislation, known as primary legislation. Secondary, or delegated, legislation is an extension of the primary legislations that approves certain specific pieces of the primary legislation. Normally, secondary legislations are passed without debate.

Annex 4: Empirical overview of manifestos of the Labour and Conservative parties from 1940–2016

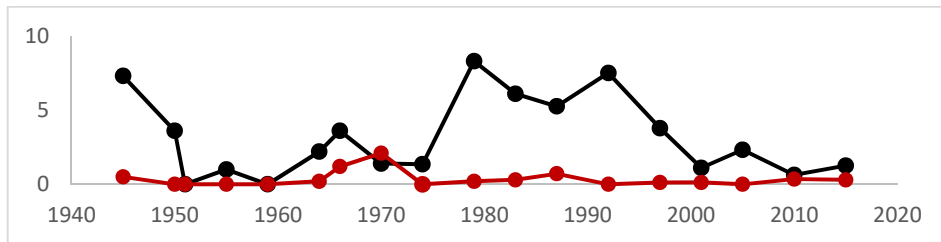


Figure 64: Party preferences over free-market economy

Red: Labour Party

Black: Conservative Party

Source: Author's work based on manifesto project dataset (Volkens et al., 2017)

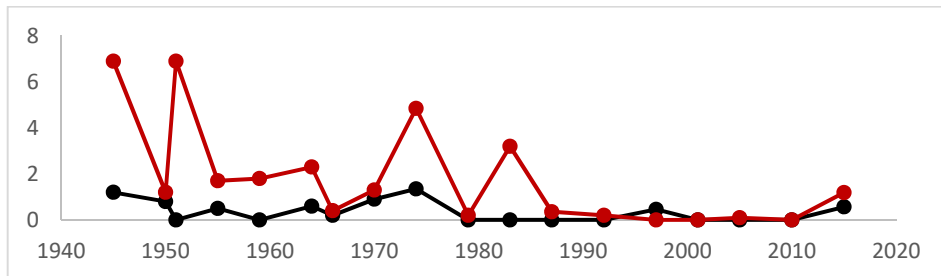


Figure 65: Party preferences over controlled economy

Red: Labour Party

Black: Conservative Party

Source: Author's work based on manifesto project dataset (Volkens et al., 2017)

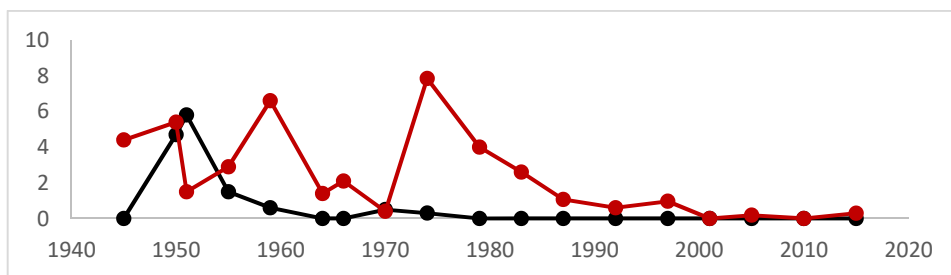


Figure 66: Party preferences over nationalisation

Red: Labour Party

Black: Conservative Party

Source: Author's work based on manifesto project dataset (Volkens et al., 2017)

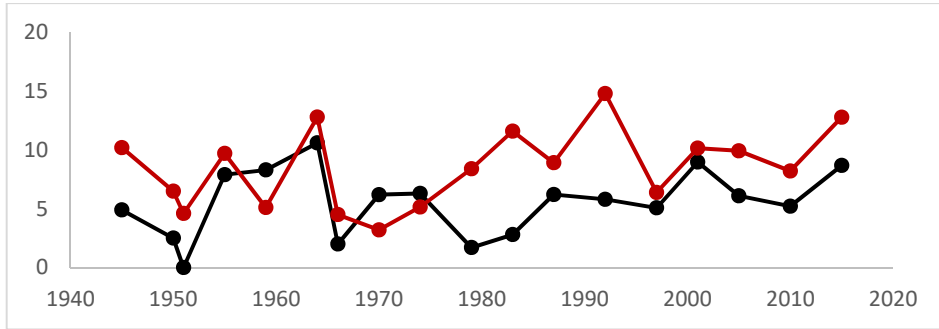


Figure 67: Party preferences over welfare state expansion

Red: Labour Party

Black: Conservative Party

Source: Author's work based on manifesto project dataset (Volkens et al., 2017)

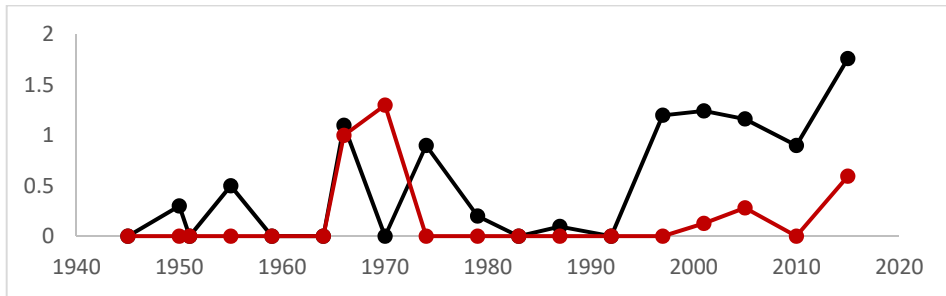


Figure 68: Party preferences over welfare state limitations

Red: Labour Party

Black: Conservative Party

Source: Author's work based on manifesto project dataset (Volkens et al., 2017)

Annex 5: Quantitative analyses—UK case study

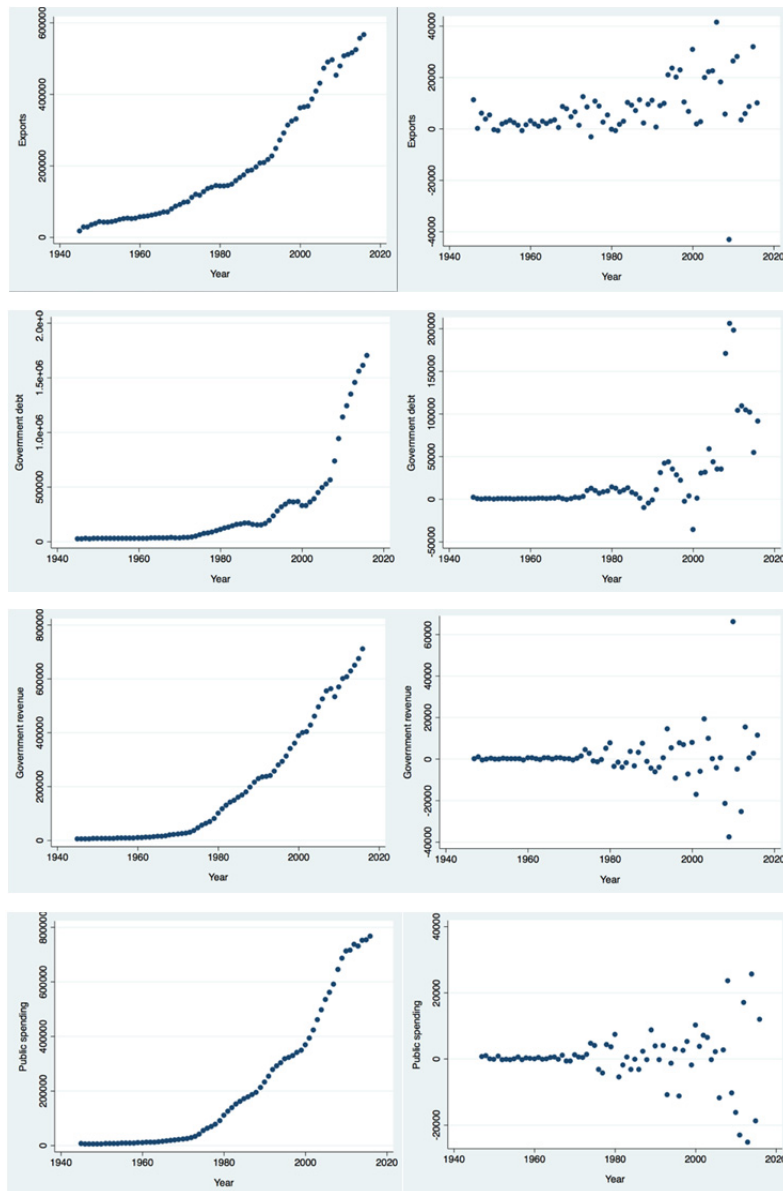


Figure 69: Increasing trends of economic variables and corresponding differencing operations

Table 17: OLS estimation results

Variables	Ratio					
	Model 1		Model 2		Model 3	
GDP growth	0.006*	(-1.71)	0.007*	(-1.42)	0.007*	(-1.42)
Government receipts	-0.062***	(-4.27)	-0.056***	(-3.53)	-0.055***	(-4.63)
Debt	0.004*	(1.25)	0.002*	(1.39)	0.002*	(2.32)
Deficit	0.062**	(5.73)	0.058***	(5.71)	0.034***	(3.61)
Economic openness	0.010	(1.51)	0.007	(1.79)	0.007	(1.52)
Unemployment rate	-0.043	(-2.60)	-0.046	(-3.04)	-0.043	(-2.86)
Inflation	-0.006**	(-2.72)	-0.051**	(-2.86)	-0.063**	(-1.01)
Government ideology (right)			0.054**	(3.10)	0.056**	(4.41)
Election year			-0.043	(-1.94)	-0.042	(-1.02)
Change in government			0.109	(2.82)	0.132	(1.91)
Governance year (2)					0.001	(0.39)
Governance year (3)					0.034	(0.59)
Governance year (4)					0.711	(1.81)
Governance year (5)					0.012	(0.74)
Time trend					0.005	(0.85)
Constant	-0.045**	(3.53)	-0.068**	(-2.75)	-0.065**	(-2.65)
Adj. R-squared	0.68		0.71		0.71	
Number of obs.	60		60		60	

Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

SUMMARY IN ESTONIAN

Avaliku sektori areng poliitilise majandustsükli tingimustes – teooria ja empiirilised tõendid

Teadustöö motivatsioon

Avaliku sektori reformide toetamine ja nende tõhususe parandamine ei kajasta mitte ainult riigi majanduslikku ja tehnilist suutlikkust, vaid näitab ka poliitilist toetust ja valmisolekut (Bukanya ja Yanguas, 2013). Avaliku sektori reformimine on muutunud olulisemaks peamiselt seetõttu, et reformid on poliitilisemad kui varem (Pollitt ja Bouckaert, 2017). Kiire areng tehnoloogia ja teaduse vallas, aga ka globaalsed majandushäired on sundinud valitsusi muutuma ettevõtlikumaks ja vastutama oma poliitika eest.

Selles töös väidan, et poliitiliste sündmuste ja majandustulemuste, eriti nende, mis on seotud parteipoliitika ja avaliku sektori reformidega, vaheline seos on palju keerulisem, kui varem tuvastatud. Poliitilise majanduse, riigi rahanduse ja avaliku halduse alases kirjanduses on käsitletud peamiselt riigi struktuuri, funktsioone ja ülesandeid, eelkõige seoses valitsejate mõjuga erasektori otsustajatele. Mõnes uuringus on vaadeldud erasektori otsustajate mõju avaliku sektori tegevusele hääletamise kaudu. Harva on arutletud avaliku sektori tegevuse sisu ja mahu üle, kuid seda, kuidas hääletamise kaudu mõjutatakse tegevuse käiku, mis viib avaliku halduse reformideni, on vähe uuritud. Kirjanduses on enamasti keskendunud valdkondade ja otsustajate vahelistele suhetele, kuid ei ole arvestatud valijate mõju ega võimu ja ideoloogilisi nihkeid valitsuses. Eelkõige ei ole käsitletud hääletamuse mõju avaliku sektori korraldusele. Nende majanduspoliitika perspektiivide arvestamine avaliku poliitika rakendamise ja kujundamise protsessis, integreerides majanduspoliitika avaliku sektori ümberkorraldamisse, võimaldab ühiskonnal mõista jätkusuutlike reformide mehhanismi.

Peamine uurimisküsimus ja töö ülesehitus

Töös modelleeritakse valitsuse ja avaliku sektori reformide vahelist suhet ning valitsuse sõltuvust valijate eelistustest, et selgitada valitsuse muudatusi ja aktiveerida avaliku sektori ümberkorraldamine. Peamine uurimisküsimus, millele töös vastatakse, on järgmine: *kuidas mõjutab poliitiline tsükel (ka poliitiline majandustsükel) avaliku sektori hindamist (avaliku sektori reformimist)?* Peamisele uurimisküsimusele vastamiseks püstitati järgmised uurimisülesanded:

1. olemasolevas kirjanduses esitatud teoreetiliste kaalutluste läbivaatamine;
2. uue makromajandusliku mudeli sõnastamine, mis toetab majanduslike ja poliitiliste tegijate ja protsesside vahelisi seoseid;
3. empiiriliste suundumuste jälgimine Euroopa riikides ja asjakohaste muutujate vaheliste seoste uurimine;
4. Ühendkuningriigi juhtumiuuringu väljatöötamine, et tuletada paralleele ja järeldusi teoreetilisest mudelist empiirilistes tulemustes.

Avaliku sektori arengumudel kui reaktsioon hääletustulemustele

Selles peatükis koostati uus makromajanduslik mudel, mis annab ülevaate avaliku sektori arengust, kui võimul on erinevate ideoloogiatega valitsused. Keskendusin selgelt avaliku ja erasektori tootmise arengule ning sellele, kuidas nende suhe muutub, kui valitsevad erakonnad vahetuvad. Peatükis konstrueeritud makromajanduslik mudel kujutab endast poliitmajanduslikku mudelit. Selles kasutatakse keinsistlikku raamistikku, et tuua välja poliitiliste võimuvahetuste ning avaliku sektori reformide ja muutuste vahelised seosed. Peatükis formuleeritud mudel selgitab, kuidas muutused valitseva erakonna ja seega ka valitsuse ideoloogias mõjutavad avaliku sektori suurust. Mudeli väljatöötamisel võeti kasutusele lihtsustatud suletud majanduse stsenaarium, mida arendati järkjärgult edasi, lisades peamised tegurid ja muutujad, nagu fikseeritud valimiskuupäevad, investeeringud, intressimäärad, rahahulk, maksud, eelarve, riigivõlg, koalitsioonikontseptsioon, eksport ja import. Mudelist arendati ka kahe riigiga avatud majandusega juhtum, mis selgitas võimuvahetusi kahe riigiga stsenaariumis ja ühe riigi poliitiliste muutuste mõju teise riigi omadele.

Mudel näitab, et valitsussektori toodangu maht sõltub valimistulemustest, samal ajal kui valimistulemused sõltuvad valitsussektori toodangu muutustest. Valijate reaktsioon poliitikale tekitab tsüklilisuse avaliku sektori toodangu arengus. Mudeli abil on võimalik kirjeldada ja analüüsida mõju, mida valitsuses toimuv võimuvahetus avaldab avaliku sektori reformidele, ning mõista valimise mehhanisme ja valimistulemusi seoses poliitilise ideoloogiaga.

Era- ja valitsussektori toodangu ja poliitiliste tsüklite suhe Euroopa riikides

Selles peatükis rakendatud analüüsid annavad probleemile uue vaatenurga, hinnates valitsuse poliitilise ideoloogia mõju konkreetsele valitsussektori toodangu mõõtmele. Seda ei ole varem uuritud. Siinkohal selgitan era- ja valitsussektori toodangu suhet, mis näitab selgelt valitsussektori toodangu mahu arengut erasektori omaga võrreldes. Järgin rahvamajanduse arvepidamise süsteemis esitatud valitsus- ja erasektori toodangu määratlust, seetõttu erinevad minu mõõdikud varasemates sarnastes uuringutes kasutatud muutujatest.

FE-mudeli tulemused näitasid negatiivset statistiliselt olulist seost vasakpoolse ideoloogia ning era- ja valitsussektori toodangu suhte muutuse vahel. Lisaks näitasid tulemused, et era- ja valitsussektori toodangu suhe väheneb pigem ideoloogiliselt vasakpoolsete valitsuste kui parempoolsete erakondade puhul. Selles peatükis esitatud tulemused on kooskõlas erakondliku poliitilise majandustsükli teooriaga, mis rõhutab ideoloogia tähtsust valitsuse suuruse määramisel ja poliitika kujundamisel (Drazen, 2000; Hibbs, 1977). Tulemused toetasid teoreetilise mudeli tööhüpoteesi, et erakonnad tegutsevad vastavalt ideoloogilistele seisukohtadele ja püüavad rakendada poliitikat, mis peegeldab kõige paremini nende poliitilisi tõekspidamisi.

Poliitiline majandusüks Ühendkuningriigis: juhtumiuuring

Briti haldussüsteem ja poliitiline juhtimine muutusid aastatel 1945–2020 märkimisväärselt. Sel perioodil domineerisid kaks peamist erakonda: tööpartei (vastab teoreetilises mudelis avalikku sektorit suurendavale erakonnale) ja konservatiivne partei (teoreetilises mudelis avalikku sektorit vähendav erakond). Ühendkuningriigi poliitilist ajalugu sel perioodil iseloomustas pidev valitsemisüks. Aastatel 1945–2020 toimusid üldvalimised Ühendkuningriigis rohkem kui 20 korral ja kaheksal korral oli nende tulemuseks valitseva erakonna vahetumine. Ühendkuningriigi avalikus sektoris toimus sel perioodil suur areng. ONSi andmetel oli era- ja valitsussektori toodangu suhe tööpartei valitsuse ajal keskmiselt 2,5% madalam kui konservatiivide ajal.

Riigi avalik haldus ja poliitiline süsteem läbisid kaks suurt konsensusperioodi. Esimene konsensus tekkis pärast Teist maailmasõda ja seda tuntakse kui sõjajärgset konsensust. See konsensus põhines heaoluriigi loomisel ja edendamisel. Teine konsensus tekkis Margaret Thatcheri radikaalsete reformide tulemusena 1980. aastatel ja kestis kuni 2020. aastani. Kuigi need konsensusperioodid määrasid avaliku sektori arengu peamised suunad, põhjustasid need ka poliitilisi muutusi, eriti parteipoliitika ja ideoloogia osas. Ühendkuningriigi peamised parteid – tööpartei ja konservatiivne partei – muutusid aastatel 1945–2020 samuti oluliselt. Kuigi tööpartei on konservatiivsete režiimidega võrreldes suhteliselt vasaktsentristlikuks jäänud, liikus mõlema partei ideoloogiline positsioon vasakult paremale või paremalt vasakule, kui poliitiline ja majanduslik keskkond nende ümber muutus.

Ühendkuningriigi uurimine toetas teoreetilises peatükis sõnastatud makromajandusliku mudeli põhihüpoteesi. Peatüki teises osas täiendasin reformide perioodi kvalitatiivset hinnangut kvantitatiivse analüüsiga. Hindasin valitsuse ideoloogia mõju era- ja valitsussektori toodangu suhtele ning tulemused kinnitasid, et valitseva partei poliitilisel ideoloogial oli oluline osa Ühendkuningriigi avaliku sektori poliitika kujundamisel.

Järeldused

Töös kasutatud analüüside põhjal sai teha mitu järeldust. Esiteks on valitsussektori poliitika kujundamine ja rakendamine põhimõtteliselt poliitiline. Võimuerakonnad, kes reforme välja töötavad ja ellu viivad, tegutsevad poliitilises süsteemis, mis kujundab nende tegevust. Seega piiravad poliitikavalikut institutsioonilised ja poliitilised tegurid, nagu valitsuse ideoloogia, valimiste ajastus, koalitsiooni moodustamise võimalikkus, valimistulemused ja muu. Teiseks on majandustingimused, konkreetsemalt avaliku ja erasektori suurus ning nende omavaheline suhe, olulised valimistulemusi määravad tegurid. Valijate eelistused on otseselt seotud avaliku sektori poliitiliste valikutega. Kolmandaks, poliitilisi valikuid, mida kujundavad poliitilised tegurid, mõjutavad ka majandusnäitajad, nagu intressimäärad, rahahulk, maksud, riigivõlg, investeringud,

eksport, import ja muu. Neljandaks, tsüklilisus avaliku sektori arengus saavutatakse, kui valijad on tundlikud avaliku ja erasektori suuruse suhtes ning poliitikud (erakonnad) on parteiliini järgivad tegijad, kes rakendavad avaliku sektori poliitikat vastavalt erakonna ideoloogiale. Viiendaks, poliitiliste tegurite mõistmine majanduspoliitika väljatöötamisel, analüüsimisel ja hindamisel, eriti avaliku sektoriga seotud tegurite puhul, on palju keerulisem kui kirjandusest nähtub.

Avalikud reformid on osa poliitilisest protsessist, mis hõlmab paljusid osalejaid ja huvirühmi, nagu erakonnad, valitud ametnikud, valijad, lobistid, välispoliitikud ja meedia. See toimib ka koos paljude institutsioonidega, nagu seadusandlikud organid, kohtud, valimiskampaaniad, rahvusvahelised organisatsioonid, bürokraatlikud institutsioonid, finantsasutused ja pangad. Kõigi nende suhete samaaegne mõistmine ühe kursuse raames on võimatu. Kuid laiema teooria loomine, mis seletab avaliku sektori muutusi poliitiliste muutustega seoses, nagu selles töös sõnastatud mudel, on esimene samm teiste uste avamiseks selles suunas. Töös välja töötatud makromajanduslik raamistik annab objektiivselt läbi mille on võimalik vaadata avaliku sektoriga seotud poliitikakujundamise põhimõtteid. Seega pakub töö terviklikku teooriat, mida saab kasutada poliitiliste tsüklite tingimustes toimuvate avaliku sektori reformide mõistmiseks. Mudel seletab siiski vaid poliitika teatud aspekte, kuna see on tegelikkuse lihtsustamine. Poliitikakujundajad, nõustajad, majandusteadlased ja kõik, kes on kaasatud poliitikakujundamisse, peaksid kaaluma mudelis tehtud ettepanekuid ja andma oma hinnangu, mis põhineb tegeliku poliitika juhtumipõhistel aspektidel. Mõnel juhul võivad mudelis vajalikud olla lisaeldused.

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