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Macroeconomic Impact of Maternity (Parental) Leave Comparing the Czech Republic with Brazil

(Thesis)

Author: Marie Kalkusová

Supervisor: Ing. Tereza De Castro

Declaration

I declare that this thesis called *Macroeconomic Impact of Maternity (Parental) Leave Comparing the Czech Republic with Brazil* is a result of my own research except for the citations in the references. All used literature and materials are mentioned in the attached list of bibliography at the end of the thesis.

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In Prague Signature

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List of abbreviations

AEPS	Statistical Yearbook of Social Security
BRL	Brazilian Real
CCP	Corporate Citizen Program
CZK	Czech Crown
CZSO	Czech Statistical Office
EU	European Union
GDP	Gross Domestic Product
IBGE	Brazilian Institute of Geography and Economics
ILO	International Labour Organization
INSS	National Social Security Institute
IPEA	Institute of Research of Applied Economics
MFCR	Ministry of Finance of the Czech Republic
MSB	Maximum Social Benefit
MSS	Maximum Social Sacrifice
MPSV	Ministry of Labour and Social Affairs
NATO	North American Treaty Organization
OECD	Organisation of Economic Cooperation and Development
PT	Workers Party
UN	the United Nations
USA	the United States of America
USD	the American Dollar
VAT	Value Added Tax

Outline

Introduction

The maternity and parental leave describe the period when a parent, usually the mother, is protected by the labour market and dedicates her time to child care. In order to compensate the lack of income, the state steps in and provides financial allowances. The importance of maternity leave is undeniable. Biologically, the female body needs to rest before the labour and after the birth, the mother seems naturally the best individual for caring for the child. In addition, it has been proven that regular breastfeeding brings healthy benefits to a baby.

During my semester abroad studying in Brazil, I found out that maternity and parental leave policies differ significantly from those that we employ in the Czech Republic. I started to question why Brazilian mothers do not enjoy equally beneficial policies and this reasoning lead me to investigate what is the additional macroeconomic burden related to parental leave policies in the Czech Republic. Based on existent differences, I wanted to verify throughout the thesis whether the maternity and parental programs that work in a small, developed country as the Czech Republic, could be applied to the sizeable country in development such as Brazil.

Certainly, the macroeconomic situation in both countries differ accordingly. The Brazilian economy registered extreme growth from 2002 to 2011 with only minor decrease in 2009. However, the economy has been significantly worsening from 2014. In 2015, the public debt in terms of GDP increased from 57% to 66% and in 2016[1], Brazil faced political unrest, which resulted in impeachment of president. One of the most common criticism made by public prior to impeachment was unjustifiable public expenditure made by leftist government.

In comparison with the turmoil, the economic situation in the Czech Republic has been recently relatively stable. Except for the years 2009, 2012 and 2013, the economy has

[1]Trading Economics, Brazil Government Debt to GDP, [online], [26.11.2016], http://www.tradingeconomics.com-brazil/government-debt-to-gdp

registered steadily increasing growth. On the other hand, the rising trend is also relevant for public debt in terms of GDP. In particular, the public debt has developed from 29% in 2004 to 45% in 2013[2], with slightly decreasing trend since then.

As mentioned previously, the Czech family policies are relatively beneficent compared to other countries, providing seven months of paid maternity leave and two to four years of paid parental leave. The Czech policies of maternity and parental leave have remained stable over the time and has not experienced any great alternation. Given the continuity of these policies in the Czech Republic, the country's citizens may take this social benefit for granted. However, is the current structure of maternity and parental leave well set? Potentially, could the model of parental leave be replicated to Brazil?

Brazil, currently drawing economic and politic attention, also has maternity policy in place. Brazil provides up to six months of maternity leave and up to 20 days of paternity leave. Unlike the Czech Republic, Brazil does not have a paid parental leave, so after the maternity leave, mothers are obliged to return to the labour market or they waive their right to return to former job position. With the Brazilian macroeconomic situation, would it be possible to implement a parental leave similar to one in the Czech Republic?

The aim of the thesis is to estimate the macroeconomic impact of maternity and parental/paternal leave in the Czech Republic and Brazil. The cost estimation of these policies is expressed in terms of public expenditure and gross domestic product. Considering the lack of parental leave in Brazil, the objective of the thesis is also to evaluate the macroeconomic viability of the Czech model implementation to Brazil. The simulation is applied as well vice-versa in order to estimate the decrease of macroeconomic costs in case of Brazilian maternity and paternity leave application (removing the structure of parental leave allowances) to the Czech Republic. Lastly, since the macroeconomic impact surpasses the cost estimation in terms of public expenditure and GDP the thesis also aims to point out the inefficiencies resulting from

[2]Trading Economics, Czech Republic Government Debt to GDP, [online], [26.11.2016], http://www.tradingeconomics.com/czech-republic/government-debt-to-gdp

the current structure of maternity and parental leave in both countries and suggests possible mitigation.

To create a solid understanding of studied family policies, the first chapter explains the concept of maternity, paternity and parental leave with specifics for both countries, the Czech Republic and Brazil. Simultaneously, the first chapter brings an overview of macroeconomic key terms related to family policies, which are further applied in the second chapter. To set maternity (and parental) leave in a broader context, relevant economic and demographic theories are also explained.

The second chapter quantifies the costs related to maternity and parental/paternal leave in each country. This evaluation is done for years 2005-2014 (the latest and comparable data) and specifies the spending on these policies comparing their values as a share to public expenditure and gross domestic product. Subsequently, the potential costs are estimated for the Czech model applied in Brazil and vice-versa. The chapter covers used methodology, simplifications and assumptions of the model as well.

The third part of the thesis studies the issues related to maternity and parental leave and discusses possible solutions. Due to the fact that macroeconomic impact surpasses the cost estimation in terms of public expenditure and GDP, this chapter focuses on an impact on labour market, adverse incentives raising from the ongoing structure including also the encounter of gender gap.

The methodology applied in the thesis varies through the chapters. The first chapter utilizes mainly description and comparison method. The second chapter brings a simplified simulation model, which quantifies the costs of maternity and parental/paternal leave in terms of public expenditure and GDP. The third chapter then stresses the analysis pointing out the weak points of the current structure comparing the Czech Republic and Brazil. The data used in the thesis comes mainly from online datasets of national statistical offices, from related ministries (of Labour and Social Affairs, or Finance) and from scientific papers dealing with the topic.

1 The concept of maternal and parental leave

The first chapter of thesis provides an overview of maternity and parental leave in several perspectives. Firstly, the specifics of family policies of the Czech Republic and Brazil are presented. These are among others the length of leave, the eligibility and the quantity of allowances. By defining those, the thesis explains maternity and parental/paternal leave policies in analysed countries. Some of the characteristics of each model are then used in the second chapter when modelling the macroeconomic cost estimation. Once the concepts of maternal and parental leave are explained, the first chapter brings an overview of macroeconomic terms used in simulation and sets the motherhood policies into demographic context.

1.1 Maternity, paternal and parental leave

Maternity leave, called mateřská dovolená in the Czech Republic and licença maternidade in Brazil, is the period of protected absence from work for employed women. This term comprises pre-birth and post-birth leave. Although, the time limitation might differ from country to country, the aim of the maternity leave remains the same worldwide. Its objective is to remove a woman from her work obligations in the interest of preparation for labour, birth itself, consequent recovery and childcare dedication. International Labour Organization (ILO) in its Convention on maternity leave stipulates the period of leave to be at least 14 weeks.[3] In particular, this period of at least 14 continuous weeks of maternity leave is set in the Council Directive 92/85/EEC, on the introduction of measures to encourage improvements in the safety

[3] OECD, Family Database – Social Policy Division – Directorate of Employment, Labour and Social Affairs, [online], [6.9.2016], http://www.oecd.org/els/family/database.htm

and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.[4]

To counterbalance the lack of salary during the maternity leave, the majority of countries apply financial compensation for mothers. The latter is called *financial allowance in maternity leave* - peněžitá pomoc v mateřství in the Czech Republic or salário licença-maternidade in Brazil. This financial subsidy also varies among countries depending on given family policy. Some countries remunerate 100 % of previous mother's income as in Brazilian case, whereas other countries refund only lower amount deriving from local policy calculation in relation to previous earnings. In many countries, financial allowances in maternity leave cannot overcome a predefined ceiling on the reimbursed amount. In most cases worldwide, the allowances are either partially or fully refunded by social security or public health insurance fund. Rarely do employers cope with costs of financial allowances.

Paternity leave defines the period of excused work absence for fathers in order to take care of born baby and furthermore facilitating mother's return to daily duties. Paternity leave is not laid down by international convention, however, in general this leave is much shorter. In Brazil, this leave is called licença-paternidade and entitles fathers to take five days off after baby is born. The legislation has recently changed and from 2017, the fathers will be allowed to remain off job up to 20 days. This leave, otcovská dovolená, currently does not exist in the Czech Republic. However, if current law project passes, it will be newly introduced from 2017 with the length of five days.[5]

In addition to these, the *parental leave* also comes in place. This one determines employment-protected absence leave for employed parents. Regularly parental leave follows the period of maternity leave and thus is often supplementary. In the Czech

[4] Eurofound, Maternity Leave Provisions in the EU Member States: Duration and Allowances, 2015, [online], [7.9.2016], http://digitalcommons.ilr.cornell.edu/intl

[5] MPSV, Otcovská dovolená: Týden volna za 70% platu, návrh míří do vlády, [online], [17.9.2016], http://www.mpsv.cz/cs/23270

Republic, this leave is called rodičovská dovolená whereas, parental leave does not exist in Brazil and hence there is no language equivalent. Entitlement to the parental leave period is often individual and generally only one parent can claim the financial allowance at a time.[6]

1.1.1 Maternity leave in the Czech Republic and Brazil

The length of maternity leave in the Czech Republic begins in most cases from eight to six weeks' prior baby is born and goes on for six months after baby's birth. In other words, considering the birth of one child, the maternity leave takes 28 weeks, for twins or more children born this period expands until 37 weeks. In case of multiple pregnancy, the maternity leave takes 9 more weeks, however, the value of allowance remains the same. If the delivery occurs unexpectedly before the due date, the financial help in maternity leave dates to the date of birth and extends until 28 weeks (seven months).[7]

The maternity leave in Brazil lasts four months, in some cases of six months. The longer entitlement of six months is provided for employees in public sector and to those, whose company has adhered to Corporate Citizen Program (CCP). This established program, approved in 2008 by the law n. 11.770, allows the employer to deduct the paid value of two months from tax payments. [8]

The quantity of financial allowance that Czech women receive during the period of maternity leave is 70% of so called 'assessment base". This amount is calculated on a basis of previous income, however with predefined maximum ceiling. The daily assessment base is determined by dividing the income of last 12 months by the number of days during this period. This amount faces three reduction levels and those are

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[6] OECD, Family Database – Social Policy Division – Directorate of Employment, Labour and Social Affairs, [online], [6.9.2016], http://www.oecd.org/els/family/database.htm

[7] Zákoník práce 2015, Zákon č.262/2006 Sb., §195, [online], [31.07.2016], http://zakonik-prace.cz/

[8] PRESIDENCIA DA REPÚBLICA, Casa Civil – Subchefia para Assuntos Jurídicos, Lei N. 11.770, [online], [17.10.2016], http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2008/lei/l11770.htm

901 CZK, 1351 CZK and 2701 CZK.[9] The first level until 901 CZK is reduced by 100%, the second level from 901 to 1351 CZK is reduced by 60% and the remaining part at third level from 1351 to 2701 CZK is reduced by 30%. The exceeding amount above the third reduction is excluded from the calculation and hence creates the ceiling for the maternity leave allowance. The example of the calculation is presented in the attachment I. The eligibility of this allowance is conditioned by contribution to the social system 270 days prior to the delivery in last two years for women in position of employees, and 270 days last year for self-employed women.[10] The Czech students, who are exempted from social insurance payment according to law, are only entitled to this allowance in case of study termination and work entry before the delivery. Regardless of not fulfilling the condition of being 270 days participating in social system prior the birth, the period of studies is included in the calculation of maternity leave.[11]

Compared to the Czech system, the Brazilian mothers are entitled to receive 100% of previous salary for the period of maternity leave. Nevertheless, this entitlement is relevant only for mothers who previously contributed to the social system for a minimum period of 10 months during the former 12 months. Insured period can be extended up to two years in case the mother had been previously participating in social security system for more than 10 years.[12] Employers working without legal contract are only eligible for the financial allowance during the leave if they were contributing to the system voluntarily themselves regardless of employer. Other employees are not entitled to receive the maternity leave allowances.

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[9] Reduction levels dated on 1. 1. 2016, MINISTRY OF LABOUR AND SOCIAL AFFAIRS, [online], [downloaded on 15. 3. 2016], http://www.mpsv.cz/cs/7

[10] CSSZ, Česká správa sociálního zabezpečení, Peněžitá pomoc v mateřství, [online], [31.07.2016], http://www.cssz.cz/cz/nemocenske-pojisteni/davky/penezita-pomoc-v-materstvi.htm

[11] MPSV, Ministerstvo práce a sociálních věcí, Peněžitá pomoc v mateřství a rodičovský příspěvek, [online], [31.07.2016], https://portal.mpsv.cz/upcr/letaky/ppm_rp_2015_pdf

[12] PRESIDENCIA DA REPUBLICA, Lei n. 8.213 de 24 de julho de 1991, [online], [18.9.2016], http://www.planalto.gov.br/ccivil_03/leis/L8213cons.htm

1.1.2 Paternal leave in the Czech Republic and Brazil

As previously mentioned, the current Czech legislation does not provide any paternal leave for fathers. Nevertheless, this situation might likely change in the upcoming year 2017 when fathers should be entitled to withdraw five days of paternal leave in order to share childcare with mothers. In mid-May of 2016 the government approved a draft law on health insurance and the draft is awaiting the approval of the Chamber of Deputies. Hence, the Ministry of Labour and Social Affairs envisages the introduction of paternity leave from the beginning of next year. The financial allowance is planned to be provided by sickness insurance program and is expected to be a yearly burden for public expenses at quantity of 630 to 800 million of CZK[13] - depending on how many fathers will withdraw this financial allowance.

The Brazilian legislation entitles fathers to stay five working days with the family after the birth. The Corporate Citizen Program[14] also provides male employees with two days off during partner´s pregnancy period in order to accompany her to medical appointments and one day off per year to accompany the child to medical consultation. Paternal leave in Brazil was introduced in Constitution of Federative Republic of Brazil in 1988[15] with the length of five days. Such a period was extended in 2008 by law n. 11.770 from five days to 15 working days off for fathers working in public sector or at private companies, which participate in CCP.[16] The latest update occurred recently, just before president Dilma Rousseff was impeached in March 2016. The law 13.257

[13] MPSV, Otcovská dovolená: Týden volna za 70% platu, návrh míří do vlády, [online], [17.9.2016], http://www.mpsv.cz/cs/23270

[14] PORTAL TRIBUTÁRIO, IRPJ – Dedução de gastos com o programa Empresa Cidadã, [online], [17.7.2016], http://www.portaltributario.com.br/artigos/irpj-empresa-cidada.htm

[15] PRESIDENCIA DA REPUBLICA, Lei n.11.770 de 9 de setembro de 2008, [online], [16.9.2016], http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2008/lei/l11770.htm

[16] PRESIDENCIA DA REPUBLICA, Lei n.11.770 de 9 de setembro de 2008, [online], [16.9.2016], http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2008/lei/l11770.htm

modifies the current structure granting the total of 20 days off for fathers[17] again applying only to fathers working in companies, which are involved in the CCP or in public sector. In other cases, the fathers are entitled to withdraw only five days of paternal leave.

1.1.3 Parental leave and related benefits

When maternity leave is over for Czech parents, the social system transfers it into parental leave that might vary from two to four years. Within this term, the mother receives the fixed amount of 220 000 CZK[18] which becomes divided by the number of months the parent decides to stay at home. Every mother (or father) in the Czech Republic is entitled to this financial help regardless her (or his) previous contribution to social system. Nevertheless, the option of free choice of length spent at home with a newly born baby is limited only to those who were formerly contributing to the social insurance system. The rest of parents are restricted only to four-year withdrawal of parental leave allowance. This leave is called parental because it can be withdrawn by one of the parents and is not determined to mothers only. However, the recent statistics show that in the majority of cases (98% in 2014), the parent who remains at home childbearing are the mothers.[19] In case of multiple pregnancy, the parent needs to cope with the same amount of allowance.

Parental leave, or the leave following maternity leave, allowing one of the parents stay at home to care of the child, does not exist in Brazil. Hence, the only period when parents are protected on labour market to child bearing are the maternity and paternal leave. The second chapter of the thesis will later estimate the costs related the implementation of Czech parental leave into Brazil. The simulation will be carried out

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[17] PRESIDENCIA DA REPUBLICA, Lei n. 13.257, de 8 de Marco de 2016, [online], [5.7.2016], http://www.planalto.gov.br/ccivil_03/_Ato2015-2018/2016/Lei/L13257.htm

[18] According to up-to-date Exchange rate, 220 000 CZK stands for 30316,26 BRL, [online], [30.7.2015], http://cs.coinmill.com/BRL_CZK.html#CZK=220000

[19] MAŘÍKOVÁ H., RADIMSKÁ R., *Podpora využívání rodičovské dovolené mezi muži*, MPSV, [online], [10.10.2016], www.mpsv.cz/files/clanky/956/pruzkum.pdf

through a simplified extrapolation model. Given the results, the thesis will then discuss the possibility of Czech parental leave system introduction to Brazil.

1.2 Macroeconomic overview related to maternity (and parental) policies

This chapter gives a macroeconomic overview of theories and key terms related to maternity and parental/paternal leave policies. Firstly, the financial allowance during the maternity leave is discussed through different perspectives. Secondly, the terms of gross domestic product (GDP) and public expenditure are introduced and explained. These are relevant, in particular, because of the second chapter of the thesis where these terms are employed throughout the simulation model. The third part provides an overview of the social benefit system and the health insurance as financial sources for the maternity, paternity and parental leave.

1.2.1 Economic theories related to maternity leave

The attitude towards motherhood policies has been developing over the years and also changing with different economic approaches. Until the 19th century, the laissez-faire economic system was rather in place and the maternity policies did not stand in the spotlight. An English economist, David Ricardo (1772 – 1823), affirmed that '*Labour, like all other things which are purchased and sold, and which may be increased or diminished in quantity, has its natural and its market price. The natural price of labour is that price which is necessary to enable the labourers, one with another, to subsist and to perpetuate their race, without either increase or diminution.*[20]*'* Such an approach reflects the economic system, which is free from government interventions. In particular, the costs of reproduction should be included in the wages and there is no need of additional benefits redistributed by the government. Analysing into its

[20] RICARDO D., The principals of Political Economy and Taxation, 1821, ISBN 978-0486434612, p.52

extremity, according to Ricardo, only working individuals should be reproducing the race.

The laissez-faire economic approach has transferred into more interventionist economic system during the 20th century with an English economist J. M. Keynes (1883-1946). Keynes defended the role of the state and believed that the public expenditure was justifiable to a certain extent in order to maintain the unemployment rate low. Moreover, the female role has changed significantly especially during the 20th century. For example, Germany introduced first law concerning parental leave in 1883, shortly after that in 1891 Sweden followed, and France in 1928.[21] During the first world war, women happened to occupy the male roles in the society due to male absence at the household. In 1919 International Labour Organization created recommendations for maternity protection, which were; job-protection, a leave period and cash benefits. After the second world war, the urgent need for pro-natality policies became explicit, especially in the affected countries.

The discussion among economists about efficiency of maternity and parental leave is quite rich. The critics of paid maternity and parental leave (Paul Ryan, Robert P. Murphy) argue that government reduces the welfare of both parties involved by trying to impose the pre-defined regulations. They perceive the firm and the employee as two units operating in the free labour-market, which balances itself approaching an equilibrium. Hence, according to the critics of imposed paid maternity leave, both parts involved will voluntarily agree on the provision in case the associated benefits are higher than expected costs.[22] In addition, the mandatory paid leave turns women into more vulnerable position in the labour market. Despite the prohibited sex discrimination at work place, the employer might tend to prefer the male employee due to lower costs involved. If opting for the man, the employer potentially reduces the costs in several

[21] RUHM CH. J., TEAGUE J. L, Parental Leave Policies in Europe and North America, Working Paper N. 5065, Cambridge, p. 2

[22] RUHM CH. J., TEAGUE J. L, Parental Leave Policies in Europe and North America, Working Paper N. 5065, National Bureau of Economic Research, Cambridge, p. 5, [online], [10.10.2016], www.airc.gov.au/familyprovisions/comm/Ruhm_Teague95.pdf

aspects. Such as costs related to the trainings for woman, but also those related to procure the additional person to substitute the mother during the leave. Additionally, the employer needs to cope with the female devaluation at the labour market during the extended period of maternity (and parental) leave. And hence, after her return from the leave, the employer needs to invest again the human capital.

The protagonists of paid maternity leave (Sheila B. Kamerman, Ellen Bravo, Eileen Trzcinski) highlight the positive externalities. By being off job, the mother has more time to dedicate to the child. The longer the maternity leave, the more extended the period of breastfeeding. This, in effect, decreases the number of healthy issues and then lowers the need (and costs) of public health care system. The proponents also claim that the maternity leave is crucial to provide the welfare for children and accentuate the importance of gender equalities.[23] In addition, they believe that the job protection increases the productivity by allowing the workers to return to their former job positions. The mother returning from leave is already familiar with the job, plus she has likely already developed the needed skills. '*Spalter-Roth and Hartman calculated that the average benefits of parental leave are six times greater than the costs, mainly because of reduced unemployment and the preservation of job tenure.*[24]'

An American economist, Gary Becker (1930-2014) also argued the role of the state towards families. Becker believed that the governmental adjustments are carried out with aim to raise the welfare of children and their parents; or at least the programs raise the combined welfare of both generations.[25] Hence, he claimed that the government intervention through a solid institutionalized social system is justifiable. With the great old-age social support, the parents do not need to raise children in order to have their

[23] RUHM CH. J., TEAGUE J. L, Parental Leave Policies in Europe and North America, Working Paper N. 5065, National Bureau of Economic Research, Cambridge, p. 6, [online], [10.10.2016], www.airc.gov.au/familyprovisions/comm/Ruhm_Teague95.pdf

[24] RUHM CH. J., TEAGUE J. L, Parental Leave Policies in Europe and North America, Working Paper N. 5065, National Bureau of Economic Research, Cambridge, p. 6, [online], [10.10.2016], www.airc.gov.au/familyprovisions/comm/Ruhm_Teague95.pdf

[25] BECKER G. S., A Treatise on the family, 1930, ISBN 0-674-90698-5, p. 363

beloved ones to take care after them once retired. Old people can rely on social system and do not need to bear a child in contemplation of prospective care needed.

The recent family policies differ according to local economic approach. In particular, European countries pursuit family policies as a welfare state economics where the role of state is crucial. The state intervenes by taking care of a mother and a child by providing financial allowances, facilities and institutions to raise and bear young generation. At the same time, it guarantees the protection on the labour market for mothers. Therefore, welfare state economics perceive the need of their supportive role towards parents.

On the opposite, more liberal, orthodox economic approach regards maternity and parental leave as an individual responsibility. An example that illustrates more liberal economic approach is the maternity leave in the United States of America (USA). The USA together with Guinea-Bissau are the only two countries in the world where paid maternity leave is not obligatorily required by the legal system. Employers can offer maternity leave and allowances, nevertheless, they are not obliged to do so. Or American lawmakers believe that the labour market equals itself and there is no need of mandatory leave policy in place or they might be afraid of macroeconomic costs related to the leave implementation. The economists Earle, Mokomane and Heymann have discussed this potentiality in the article *International Perspectives on Work-family related policies*: *Lessons from the World's Most Competitive Economies.* In this study, they analyse what would happen to the American competitiveness after introduction of paid maternity and paternity leave. By comparing with highly competitive countries, the article comes to the conclusion that having work-family policies in place, the United States of America would remain still competitive.

The current situation of family policies in Brazil and the Czech Republic reflects welfare economics approach. With financial allowances in maternity leave, the state intervenes, takes partly responsibility of newly born child and through income redistribution provides social benefits and care. Mothers are guaranteed to maintain their former job position during the period of the leave. Hence, the governments in both

analysed countries perceive the maternity leave as a civil right and entitles mothers to the allowance.

1.2.2 GDP and public expenditure

This chapter provides an overview of terms gross domestic product (GDP) and the public expenditure. These two indicators are further used in the second chapter of the thesis and hence are worthy to be mentioned here. GDP is one of the most prevailing approaches to measure the economic performance of a country, although at some point its meaning might become too broad and that is why the public expenditure is in place as well.

GDP is an indicator used to evaluate the health of a country´s economy and to track the economic production and growth over the time. The GDP indicates *'the market value of all final goods and services produced within country in a given period of time*[26]*'* and might be calculated via the income approach, the output approach or expenditure method. The identical mode of measure and calculation serves to compare the productivity of diverse countries. A calculation of the economic growth or decline can be adjusted by taking yearly inflation to the account and thus comparing the relative percentage to previous periods.

Notwithstanding, the GDP methodology faces certain criticism such as; not including the unofficial economy, measuring income and not equality, ignoring environment and social cohesion and others. Despite its weaknesses, this indicator is further used when estimating the macroeconomic costs in the second chapter mainly due to its simplicity and quick overview of total macroeconomic output. The utilization of this indicator turns relevant thanks to the cost estimation of maternity and parental leave in the terms of economy as a whole. For more detailed examination, the comparison towards the public expenditure as is employed as well.

[26] MANKIW, G.; Principles of Macroeconomics, ISBN 978-1285165912, page 208

The **public expenditure** represents the value of all the goods and services purchased by the state and its components within the year. The role of the public spending is to ensure the state functions as justice and security, as well as the communication infrastructure. The government is also responsible for the income redistribution; where among others the pension payments or the maternity leave allowances belong. Another function of public expenditure is to compensate the fluctuations depending on the economic cycle, to promote promising sector within the economy and to bolster the education, science, health and others.[27]

The public spending can be divided into three main categories; mandatory spending, quasi-mandatory and discretionary spending. Mandatory expenditure can be only very hardly changed since the spending is set by the law or by the international treaties. In particular, these are the operations related to debt payment, payments to the international organizations such as European Union (EU), North Atlantic Treaty Organization (NATO) or the United Nations (UN). In addition, among the mandatory spending are also the state guaranteed social benefits including the pension system and the maternity and parental leave system. The quasi-mandatory spending is not unchangeable, though the process might be lengthy, for example the salaries of public employees. The remaining category of discretionary spending enables the government on yearly basis to spend the money freely. However, this category comprises the lowest part of the all public expenditure. [28] For example, only 3.9% of the public spending was discretionary in Brazil in 2015.[29]

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[27] Transparency International, Průhledný státní rozpočet?, [online], [10.10.2016], kvf.vse.cz/storage/1170172889_sb_pruhledny_rozpocet.pdf

[28] Transparency International, Průhledný státní rozpočet?, [online], [10.10.2016], kvf.vse.cz/storage/1170172889_sb_pruhledny_rozpocet.pdf

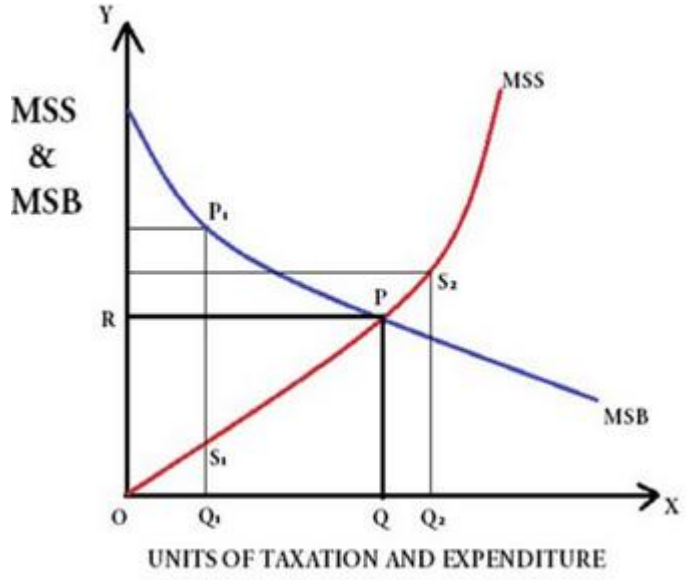
[29] SANTOS P., M., A., Relatório de Análise Economica dos Gastos Públicos Federais, 2016, p. 13, [online], [25.10.2016], http://fazenda.gov.br/centrais-de-conteudos/publicacoes/relatorio-de-analise-economica-dos-gastos-publicos-federais

The public expenditure can be characterized by an increasing trend in the long term. As mentioned previously, until the 20th century the economic system of laissez-faire did not dedicate too much attention to the social transfer payments. Social benefit system, pension system, public sickness insurance and others were gradually introduced during the 20th century. The pension system each time includes more elderly as nowadays older people live longer what then creates the additional costs. Additionally, the fertility has a decreasing trend and hence there is a lower number of economically active population each time. This trend is equally relevant for the Czech Republic as well as for Brazil. Regarding the health care, in some countries the National Health Service is provided exclusively by the state (the case of Brazil), whereas in other countries, such as the Czech Republic, the health care system is provided by the health insurance companies. Although these are not technically the part of the government, they are fully regulated and hence are practically the state-run agencies. [30]

To finance the expenditure, the government needs to counter-balance the account with revenues. The public budget revenues come mainly from taxes. These are divided between the direct and indirect taxes. The direct taxes are the income tax, inheritance or the property tax, whereas among the indirect taxes are the value added tax, consumption or environmental tax. The additional income to the public budget comes from the social insurance, from European funds or via other manners. To achieve the maximum social benefit, according to the principle of Maximum Social Advantage, the public revenues need to be aligned with public expenditure. In particular, the maximum social benefit (MSB) needs to be equal to maximum social sacrifice (MSS).

[30]Transparency International, Průhledný státní rozpočet?, [online], [10.10.2016], kvf.vse.cz/storage/1170172889_sb_pruhledny_rozpocet.pdf

Figure 1: Equilibrium of public expenditure and revenues



Source: Akrani G., Dalton's Principle[31]

1.2.3 Social security system

The public expenditure, through social security system, ensures the various worker protection rights, such as the retirement payments, cases of illness, disability, unemployment, maternity and other kinds of needs. The income redistribution process is based on fundamental principles such as social justice, social solidarity, equivalence, subsidiarity and participation.

Social justice defines the rules, which distribute income and opportunities more equally among the society. Although, the real social justice does not exist, the rules try to shrink the gaps between the habitants. To permit the social justice, the solidarity between the social groups needs to be in place as well. The principle of subsidiarity then links the personal responsibility with solidarity towards the society. The equivalence principle is more closely tight to the neo-liberal doctrine because it assumes that the distribution of

[31] AKRANI G., Dalton's Principle of Maximum Social Advantage Public Finance, 2011, [online], [10.10.2016], http://kalyan-city.blogspot.cz/2011/01/dalton-principle-of-maximum-social.html

income, goods and services to individuals is equivalent to their own performance and work deserved.[32] These principles are reflected on the maternity and parental leave policies. With the leave allowances, the social security system tends to embed more social justice and equivalence between different social classes.

During the process of social system redistribution, the government handles a significant amount of capital. To illustrate, the approved state budget of the Czech Republic for the year 2016 entitles the Ministry of the Labour and Social Affairs to receive 544 billion of CZK, representing 43% of a whole budget.[33] In comparison, the social system payments in Brazil can consume over 34% of public budget the same year.[34] The quantity of macroeconomic burden highlights the relevancy of the discussion on the public spending. And hence, the constant examination of the social system layout and its payment is crucial.

As already mentioned above, one of the transfers that government is in charge, is the maternity and parental leave payment. Financial allowance in maternity leave is a social benefit paid by health insurance care in the Czech Republic. There are several kinds of social benefits provided by health insurance such as sickness allowance, financial help in maternity, nursing allowance and compensatory contribution during pregnancy and motherhood.[35] The costs of nursing allowance and compensatory contribution during pregnancy are not in a spotlight of the thesis and hence, for this purpose, are neglected.

Financial allowance in maternity leave is though only obtainable to mothers who have been contributing to the system of sickness insurance. The number of women not fulfilling the condition of entitlement remains relatively stable over the years and

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[32] KREBS, V. ,Sociální politika, ISBN 98-7357-585-4, p. 27

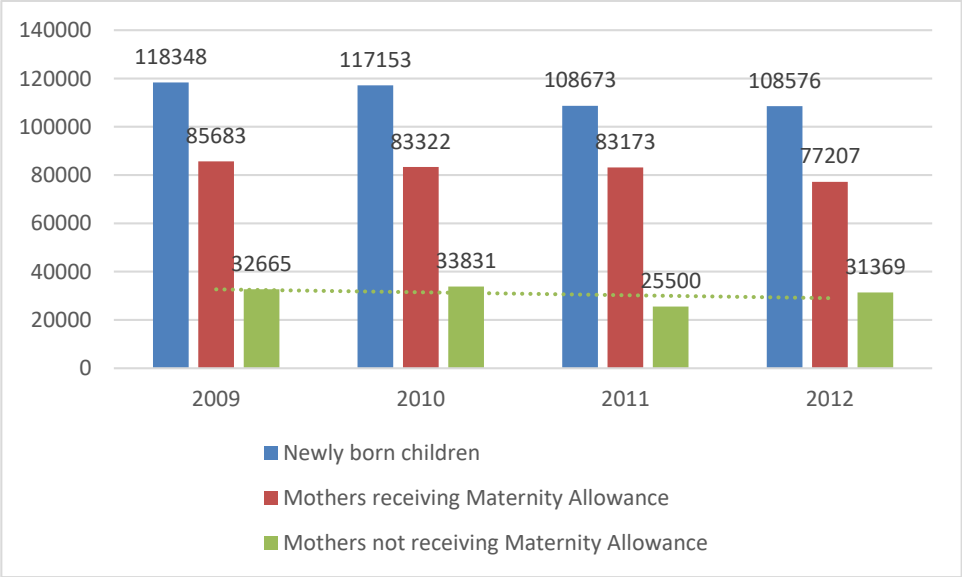
[33]MFCR, Poslanecká sněmovna schválila státní rozpočet na rok 2016, [online], [25.10.2016], http://www.mfcr.cz/cs/aktualne/aktuality/2015/poslanecka-snemovna-schvalila-statni-roz-23323

[34]BARBOSA N., Edicao 2016 – Orcamento Federal, [online], [27.10.2016], www.orcamentofederal.gov.br

[35] MPSV, Finanční podpora rodiny, [online], [31.07.2016], http://www.mpsv.cz/cs/14470

oscillates around 30 000 mothers per year.[36] This amount is calculated by the number of newly born children (newly mothers) deducted by the number of newly paid allowances in maternity leave. As mentioned previously, the mothers not eligible to maternity allowance are mainly self-employed mothers not paying health insurance, students or unemployed women. As shown in the figure below, in 2009 nearly every fourth Czech mother was not receiving financial help in maternity leave, increasing to every third woman in 2012.

Figure 2: Number of Czech Mothers not/Receiving Maternity Allowance



Source: MPSV[37]

Unlike the Czech Republic, in Brazil, the maternity leave allowance is paid from Social Security system and not from the Sickness Insurance. Brazilian Social Security system is administered by the Ministry of Labor and Social Security. All the policies related to this area are run by the federal agency called the National Institute of Social Security (INSS) which is also responsible for maternity leave payments in Brazil. Though, not all the Brazilian mothers are entitled of financial allowance (see the chapter 1.1.1).

[36] MPSV, Finanční podpora rodiny, [online], [31.07.2016], http://www.mpsv.cz/cs/14470

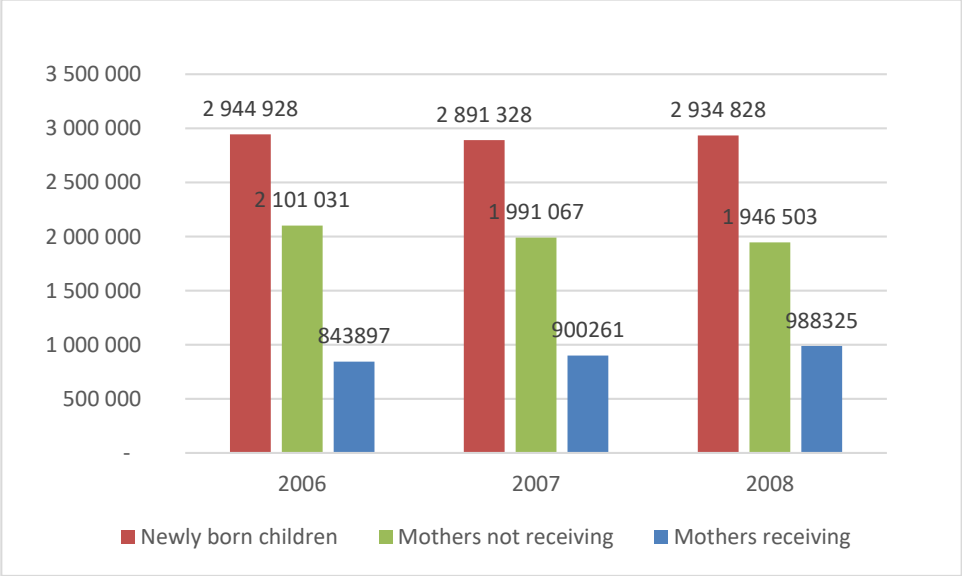
[37]MPSV, Analýza vývoje nemocenského pojištění 2015, [online], [17.11.2017], http://www.mpsv.cz/cs/7

Equally, the paternal leave in Brazil is also paid by INSS directly for first five days and indirectly through the employer the other additional 15 days.

Brazilian Social Security also offers other benefits apart from the maternity leave payments such as birth benefit or pharmacy benefit. To decrease the poverty, the Bolsa Familia program redistributes the capital to very poor families in exchange of infant compulsory school attendance. The Bolsa Familia program, however, cannot be understood as family oriented policy since the entitlement is conditioned on the family income and not the children themselves. The aim of the Bolsa Familia program is not to moderate the natality trend, but instead to fight the poverty. The thesis focuses only on maternity and paternity leave allowances. Nevertheless, when estimating the total costs related to maternity and parental leave policies in the second chapter, the costs of Bolsa Familia program are estimated as well since this program occupies a significant amount of social expenditure.

The following figure shows the proportions of Brazilian mothers who received the maternity allowance for the years 2006-2008. The highest column shows the total number of children born in the year and the lowest number points out the number of mothers who received the financial allowance in maternity leave. The trend of eligibility in the Czech Republic is around two thirds of mothers whereas, in Brazil the level of eligibility stands rather at the ratio of one third.

Figure 3: Number of Brazilian mothers not/Receiving Maternity Allowance



Source: INSS[38]

Regarding the parental allowance paid in the Czech Republic, this benefit is managed and paid by the social benefit system. Regardless of former contribution, one of the parent is entitled to withdraw the benefit. Apart from the parental leave allowance, the social benefit system also provides child benefit, social and housing allowance, childbirth financial support, funeral financial help and foster care aid, however, the parental leave represents the majority part – over 60% in 2014. [39] Other than that, the Czech government also supports the families by indirect measure, which means parent's tax reduction for each child. [40] The financial allowances in parental leave represent the greatest share of social benefits related to family and hence the thesis explores further only this financial aid.

[38]INSS, Salário-maternidade, [online], [17.11.2016], http://www.previdencia.gov.br/servicos-ao-cidadao/todos-os-servicos/salario-maternidade/

[39] MPSV, Vývoj sociálních výdajů- vývoj výdajů dávkových systémů, 2014, [online], [17.11.2016], www.mpsv.cz/files/clanky/20863/TZ_160415a.pdf

[40] MPSV, Finanční podpora rodiny, [online], [31.07.2016], http://www.mpsv.cz/cs/14470

The long-term objective of the household policy is to provide institutional support for functional families; to set up a family and to dispose infrastructure facilities. The peculiar component of household policy, is the cross-sectional nature affecting high variety of fields ranging from education, health care, tax policy, housing, transport to regional infrastructure.[41] As well, by detaching females from their jobs, the family policies have direct impact on the labour market. In addition, the changes in maternity and parental leave policies might have straightforward effect on the total number of a population within society. Therefore, the maternity policy should be always considered in the context with other related policies.

1.3 Demographic trends and theories

Maternity and parental leave allowances, among other benefits, have a significant demographic impact. In the following chapter, the thesis interconnects the maternity and parental leave policies to the demographic trends in both countries in order to provide more complex overview. The second chapter later discusses the population theories, whether or not the population increase is a threat to the society.

1.3.1 Maternity policies related to demography

Support to parenthood has had a long history in the Czech Republic. After the creation of Czechoslovakia in 1918, the former president T. G. Masaryk established a well functional social system including the benefits for mothers-to-be. Consecutively, on 1.4.1964 the law n. 58/1964 of Increase of Care for Pregnant Women and Mothers was implemented. This law defined maternity leave of 22 weeks and parental leave (called as Additional maternity leave by that time) of one year.[42] Indeed, such a change was reflected by the increase of the birth rate.[43] This framework was updated by a new

[41] MPSV, National Family Report (abridged version), 2004, [online], [28.8.2016], www.mpsv.cz/files/clanky/4330/report_AJ.pdf

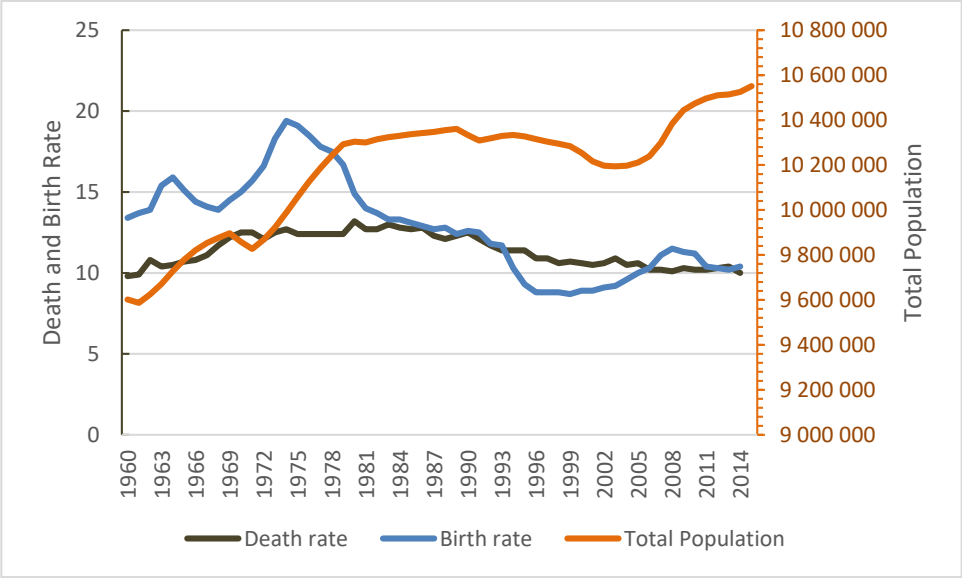
[42] PSP, Poslanecká sněmovna Parlamentu ČR, [online], [12.4.2016], https://www.psp.cz/sqw/sbirka.sqw?cz=58&r=1964

[43] Birth rate is the total number of live births per 1000 of a population in a year.

Labour Code, n. 65/1965[44], which became effective on 1.1.1966 and increased the period of maternity leave to 26 weeks.

Another significant increase of birth rate was registered in the 1970s. Between the period of 1.1.1970 to 30.6.1987 the additional maternity leave (nowadays so called parental leave) was increased up to two years. In order to support pro-population policies, the president of Czechoslovakia at that time, G. Husák, introduced also other measures. These were in particular, very cheap loans to newlyweds, easily attainable housing facilities, and increased child allowances or as above mentioned the increased parental leave up to two years. These modifications consequently led to increased birth-rate and steep growth of total population as shown in the Figure 4 below.

Figure 4: Demographic Trends in the Czech Republic (1960-2014)



Source: World Bank[45]

[44]PSP, Poslanecká sněmovna Parlamentu ČR, [online], [12.4.2016] http://www.psp.cz/sqw/sbirka.sqw?cz=65&r=1965

[45] World Bank, World Bank Open Data, [online], [17.11.2016], http://data.worldbank.org/

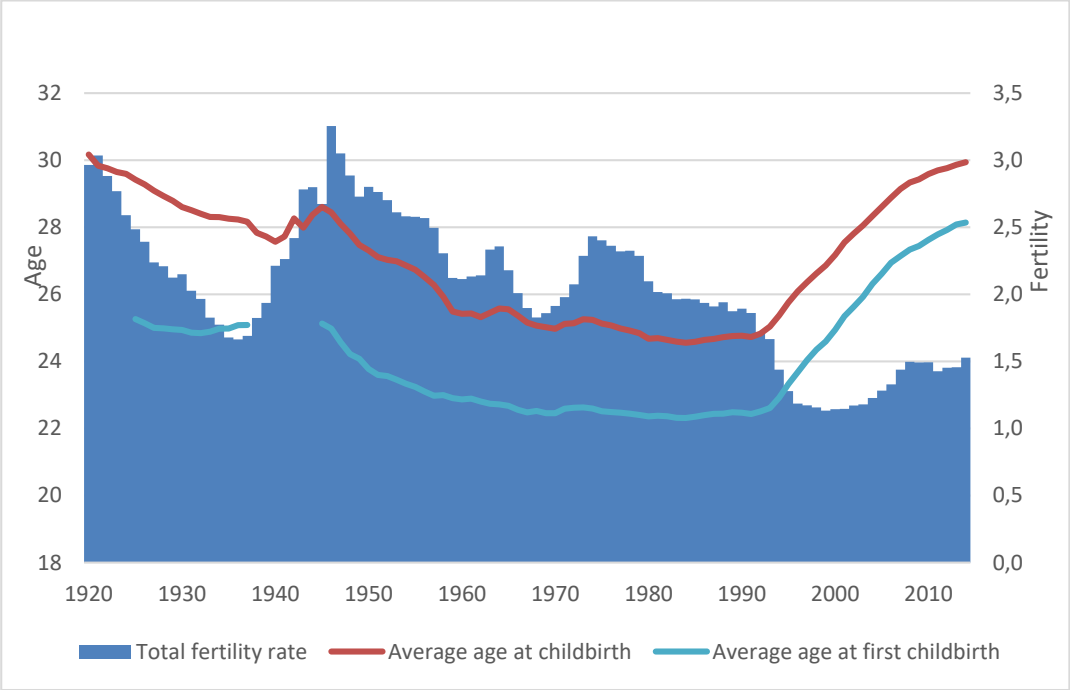
In 1989, the amendment of Labour Code increased the additional maternity leave up to three years and up to four years of a child in 1995.[46] Despite these favourable changes, the demographic trends registered birth rate decline accompanied with the decrease of total population. For the first time of the Czech history, the death rate exceeded the birth rate. Or, in other words, more people died than were born. Such a fact is alarming because older people outnumber children and with low number of fertility, the proportion of old-age dependency increases and indicates the pressures that public health and social security system need to face. Therefore, the old-age dependency comes to be one of the arguments used to justify pro-population policies in order to counterbalance the number of economically active population.

Despite increased additional maternity leave to three and later to four years, the trends in the 1990s reflect rather reproductive slow-down. As shown in the Figure 5, the post-communist era was characterised by structural break with declining fertility rate accompanied by increasing age of first marriage and childbirth.[47]

[46] This leave was formally renamed in 1.1.2001 by parental leave, which reflected the change that also fathers were newly allowed to go on leave.

[47] MPSV, Information about Family Policy System in the Czech Republic, [online], [16.7.2016], page 4, www.mpsv.cz/files/clanky/information_family_policy.pdf&usg=AFQjCNFWPgRdAor2Eo5EipxPce_6jo9ELg

Figure 5: Fertility Rate and Average Mother´s Age at Childbirth in the Czech Republic (1920-2014)



Source: CZSO[48]

In comparison, the maternity leave in Brazil was introduced in 1943 as a part of Consolidation of Labour Laws by the law n. 5.452. Respectively, the maternity leave was established to start four weeks before childbirth and to end eight weeks after baby was born. During this period, the woman was entitled to 100% of salary and guaranteed the right to return to her work position. The financial burden of maternity allowance, however, were transferred to Social Security system in 1974 by the law n. 6.136. Until then, the maternity leave allowances were paid the employer. In 1988, the maternity leave was ratified as a social right with duration of 120 days.[49]

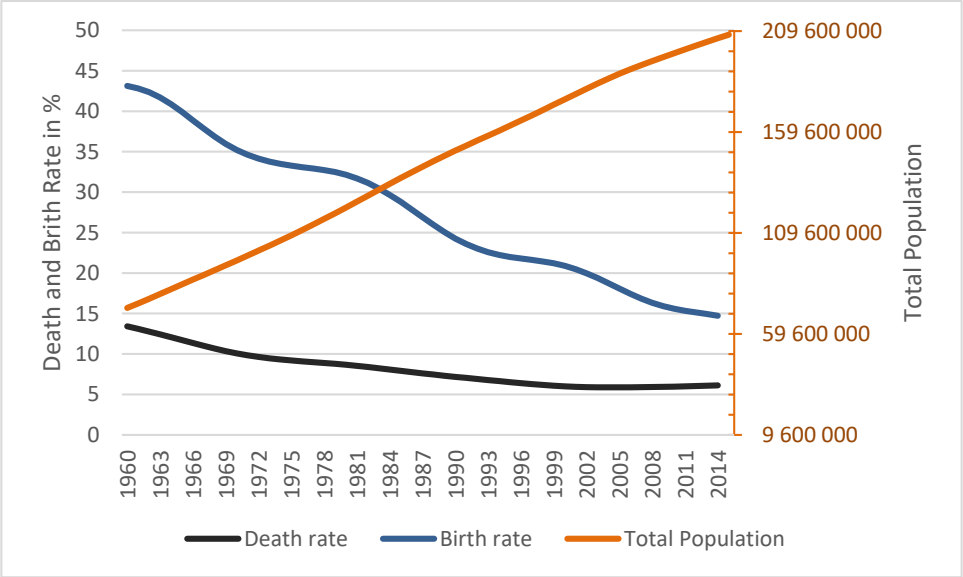
Nevertheless, analysing the Figure 6 below, the death rate and birth rate present steady and constantly decreasing trend, hence with increasing Brazilian total population. Maternity policy introduction had no significant impact on the demographic trends. The

[48] CZSO, Demografický vývoj, [online], [17.11.2016], https://www.czso.cz/documents

[49] ANSILIERO, G., Previdencia Social - Histórico e Evoluçãao Recente da Concessão de Salário-Maternidade no Brasil, 2002, Vol. 19, Num. 2, p.1

orange line shows the data for total population measured on right axis. In particular, the population increased from 60 million inhabitants in 1960 to over 200 million during 54 years. At the same time, birth rate decreased from 43 to 15% accompanied by the downturn in death rate from 13 to 6%. Due to declining trend of birth rate, the need for stabilization of total Brazilian population might be expected in the future. The decrease of death and birth rate mainly is driven by economic development of the country.

Figure 6: Demographic Trends in Brazil (1960-2014)



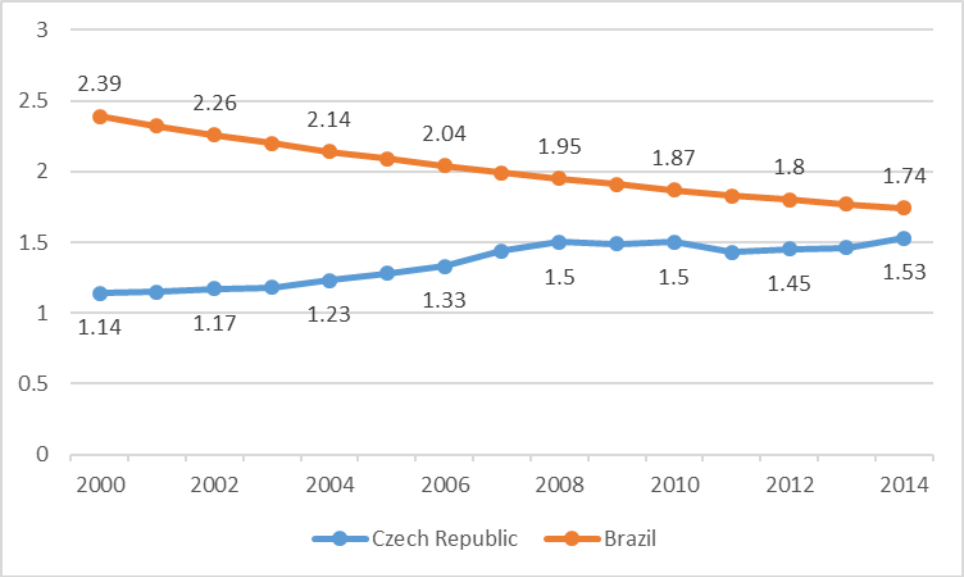
Source: World Bank[50]

To zoom the recent demographic situation from 2000 to 2014, the figure 7 of fertility of the Czech Republic and Brazil follows. The fertility, or the number of children born per mother, features different trends in each country. Brazilian fertility is steadily declining from 2.39 children per mother in 2000 to 1.74 infants per mother in 2014 whereas, the last Czech trend is increasing from 1.14 offspring in 2000 to 1.53 child 2014. By taking into account the figure 5, the higher Czech fertility rate in recent years could be explained with few perspectives; the strong generation born in 70ties reached

[50] World Bank, World Bank Open Data, [online], [17.11.2016], http://data.worldbank.org/

the reproductive age and in addition, some couples might have delayed the babies during the prior period.

Figure 7: Fertility in the Czech Republic and Brazil (2000-2015)



Source: IBGE[51] and CZSO[52]

1.3.2 Population theories

This chapter brings an overview of theories related to population growth discussing whether, the population increase is a threat. By providing different perspectives, the maternity and parental leave policies are put into demographic context. In particular, the purpose of family policy justifies the means applied.

Protagonists of the trend of population pessimists believe that population growth is a menace. The most famous economist and demographer fearing the population increase was Thomas Malthus (1766-1834). In his *Essay on the Principle of Population*,

[51] IBGE, Taxa de fecundidade Total – Brasil – 2000 a 2015, [online], [17.11.2016], http://brasilemsintese.ibge.gov.br/populacao/taxas-de-fecundidade-total.html

[52]CZSO, Total fertility rate 1950 – 2015, [online], [17.11.2016], https://www.czso.cz/csu/czso/total-fertility-rate-1950-2015

he discussed the population growth carried out as geometrical progression, whereas the food production is realized through arithmetical progression resulting in disequilibrium between food supply and population.[53] To flatten the growth, he suggested two ways possible; positive/natural checks or preventive measures.[54] The former refers to wars, famines, epidemics, famines, floods, earthquakes or other natural disasters whereas, the latter attributes to the family planning methods, self-restraint, celibacy or late marriages. '*Unlike latter-day Malthusians, he did not advocate birth control, which as a minister he considered immoral.*[55]*'*

The pessimists believe that population growth is harmful to the economic development. Among others, an economist Edgar Hoover and a demographer Ansley Coale[56] perceive that the decline in birth rate would result in increase of the GDP per capita. Once the total number of population falls, the world's GDP gets divided by lower number of people and hence the material welfare will increase. Therefore, such a perspective would not be supportive to the implementation of pro-population policies.

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[53] ,*The faster population increases, the more help will be got to draw off the water, and consequently an increasing quantity will be taken every year. But the sooner, undoubtedly, will the reservoir be exhausted, and the streams only remain. The yearly increase of food will depend upon the amelioration of the land already in possession; and even this moderate stream will be gradually diminishing. But population, could it be supplied with food, would go on with unexhausted vigour, and the increase of one period would furnish the power of a greater increase the next, and this without any limit.'* MALTHUS, T., An Essay on the Principle of Population, 1798, ISBN 978-0-521-42972-6, p.34

[54] Originally, Thomas Malthus referred to positive checks only. However, in later editions he included the birth rate control through so called preventive checks.

[55] MALTHUS, T., An Essay on the Principle of Population, 1798, ISBN 978-0-521-42972-6, p.232

[56] A study written in 1958 about Mexico and India called 'Population Growth and Economic Development in Low-Income Countries' pioneered such an idea. Its mathematical model unveiled that the fall in birth rate would increase the income per capita in three different ways. Firstly, the lower number of newly born and would lead to a lower quantity of labour force, which would allow to shift the means from capital widening into capital deepening or in other words the capital shallowing. Second, the lower number of citizens would enable to reshuffle the capital from schooling and health expenditures into physical capital, which is considered being more efficient public spending. Thirdly, the lower birth rate would decrease the dependency ratio of non-working population. - PERKINGS D. H., RADELET S., LINDAUER D. L., BLOCK S. A., Economics of Development, 2014, ISBN – 0-393-93435-7, page 238

Malthus expected rising fertility as a consequence of higher income. Wealthier families have more facility to back greater number of children, couples might marry sooner and richer woman should be better fed and hence have a better capacity to get pregnant and deliver a baby. However, decline in death rates in Europe, followed by wage increase had resulted in fall in fertility showing the opposite trend. Such a variation compared to original population growth theory was explained by post-Malthusians, who primarily promote contraception as a solution to the contradiction between population growth and food, commodity and energy resources. Apart from that, it stresses the working class with the problem of overpopulation. The neo-Malthusian position was supported by the elite, which was afraid of expropriation of their property by overpopulated working class. However, birth control discussion was not well accepted in the society until first quarter of 20th century due to its considered amorality. Once accepted, the contraceptive was treated more in the way of 'family planning' or 'planned motherhood'.[57]

Post-Malthusian population theory was consequently rejected by German economist, socialist and journalist, Karl Marx (1818-1883). According to his perspective from *Capital* Vol. I, the legitimate origin of world wrong was not the world's rapidly growing population but rather the capitalism. He believed that the competitive economic system had the ability to produce enough supply, but it was the unequal distribution of wealth that ruled the production. By massive machine instalments, the labour force was substituted while capitalists were gaining the maximum, pushing down the salaries and hence deepening the gap of inequalities. '*The constant generation of a relative surplus-population keeps the law of supply and demand of labour, and therefore keeps wages, in a rut that corresponds with the wants of capital.*[58]' Marx believed that when a society is equally organized, the population enlargement should lead to a greater wealth and not to poverty and deprivation.

[57] MALTHUS, T., An Essay on the Principle of Population, 1798, ISBN 978-0-521-42972-6, p.35

[58] MARX K., Capital – A Critique of Political Economy, Vol. I, The Process of Production of Capital, ISBN-10: 0140445684, p.523

He argued that labour's relation to capital plays a crucial role. Among others; working class is deemed to extend wealth of the capitalist to the greatest possible lengths, which precludes the capitalist's interest being more than strictly economic. In addition to that, the nature of the capitalist-labourer relation serves to perpetuate labour-power by forcing the worker to constantly return to the labour-market.[59] In other words, according to Marx, the surplus population was the result of unequal distribution of wealth.[60] Given that, Marx perceived income redistribution as a solution to the population increase.

On the other hand, the population optimists believe that the total growth is an opportunity to increase factor productivity. Anti-Malthusians believe that human's ability and inventiveness will manage to find a way to solve the potential shortage of food and energy supply. A Danish Economist Ester Boserup (1910-1999) believed that '*the power of ingenuity would always outmatch that of demand'*. She argued that the technology improvement will solve the prospective lack of resources. In particular, optimists claim that population pressures on discovery can induce to the real advancement in the technical field, including new machines or the artificial manure hence, bringing the solution to the food supply issue. Apart from that, they believe that larger population would benefit from economies of scale, especially in infrastructure. Probably, the most famous population optimist, an American professor, Julian Lincoln Simon (1932-1998) argued that larger population contains greater proportion of innovative people who can significantly contribute to the complex of humanity. He equally believed that human creativity can overcome any depletion of other resources.[61]

Meanwhile, the population revisionists or sometimes referred as population neutralists reflect the middle-way perspective on threats of population growth to the economy.

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[59] JERMAIN, D. O., Marx on population: a critical review including a comparison to Malthus and a new perspective on Marx, 1975, paper 823, p.126, [online], [26.8.2016], oatd.org/oatd/record?record=oai%5C%3Apdxscholar.library

[60] Marx accused Malthus in the Capital Vol.1, p.357, of Master of shameless plagiarism blaming Malthus for having only copied what had been written previously about population growth.

[61] PERKINGS D. H., RADELET S., LINDAUER D. L., BLOCK S. A., Economics of Development, 2014, ISBN – 0-393-93435-7, page 242

According to this stream, the final effect of population enlargement on economic welfare depends on each specific circumstances, such as situation, place and/or time. Unlike the neo-Malhusians, revisionists argue that the main problem is not the sharp enlargement of society but the lack of well-defined property rights.

Compared to other population theories, neutralists seek the root cause in market failures. They apply the logic of Garrett Hardin's Tragedy of Commons into overpopulation field. Each individual acting for own prosperity contributes to the depletion of common sources. Increasing individual utility gets in conflict with the total utility of society. Ultimately, the government services might not manage to expand at the same speed as population growth. In other words, another risk pointed out by population revisionists is the incapacity of government to finance the increased demand for publicly arranged services and goods. The last but not least, they perceive market failure also in accessibility and availability of contraception. The lack of information or access to family planning results in higher fertility even if those mothers would preferentially opt for lower number of children.[62]

[62] PERKINGS D. H., RADELET S., LINDAUER D. L., BLOCK S. A., Economics of Development, 2014, ISBN – 0-393-93435-7, page 220, 227, 254

2 Macroeconomic impact of maternity and parental leave

The following chapter brings an overview of cost estimation related to maternity policies in the Czech Republic and Brazil. The costs related to these polices are expressed in terms of public expenditure and GDP for both countries. The analysis of the Czech maternity policies spotlights financial allowance in maternity and parental leave whereas, analysis of Brazilian case focuses on maternal and paternal financial allowance. The different aspects of these policies were specified in the previous chapter 1.3. The simulation model, which follows in the subchapter 2.3 and 2.4 applies Czech system of maternity and parental leave into the Brazilian data and vice-versa. By this simulation, the sustainability of Czech model implementation into Brazil, is discussed. The simulation model is very straightforward and due to its easiness, its assumptions and simplifications are explained in each relevant chapter, not having a special chapter for the methodology itself.

2.1 Macroeconomic cost estimation in the Czech Republic

The model quantifies the burden of maternity and parental leave allowance from 2005 to 2014 comparing the amount to the public expenditure and GDP. The data related to Czech maternity leave are extracted from Sickness Insurance accounts and those related to parental leave allowances come from Social Benefit system dataset. The data sources come from the Ministry of Labour and Social Affairs and the Czech Statistical office. The units are expressed in billions of CZK or as a % of variable. The other financial benefits to parenthood are neglected.

2.1.1 Macroeconomic impact of Czech maternity leave aid

The currency applied is the local currency, hence CZK. Considering the fact that the financial burden is expressed as the percentage of public expenditure and GDP, there's

no need to change the currency into USD, for example. Moreover, by maintaining the local currency, the inconsistencies related to undervaluation (or overvaluation) of currencies are avoided. The comparison is done by percentage; hence the estimation of costs sticks to relative data. The Table n. 1 shows Czech maternity leave allowances expressed in terms of public expenditure and GDP. The ratios have not changed significantly over 9 years, oscillating around the similar level. In particular, in 2014 the maternity leave allowance represented 0.40% of Czech public expenditure and 0.17% in terms of GDP. These numbers do not signify an unsustainable macroeconomic burden. [63]

Table 1: Czech Maternity Leave as % of Public Expenditure and GDP

Year	Maternity leave allowance (bn CZK)	Public expenditure (bn CZK)	GDP (bn CZK)	Maternity leave allowance as % of public expenditure	Maternity leave allowance as % of GDP
2005	4.5790	1362.40	3257.97	0.34%	0.14%
2006	4.9810	1430.82	3507.13	0.35%	0.14%
2007	5.8930	1530.89	3831.82	0.38%	0.15%
2008	6.2970	1612.53	4015.35	0.39%	0.16%
2009	7.0840	1710.66	3921.83	0.41%	0.18%
2010	7.4100	1698.79	3953.65	0.44%	0.19%
2011	7.5060	1735.92	4022.51	0.43%	0.19%
2012	7.2240	1805.84	4041.00	0.40%	0.18%
2013	7.2580	1745.91	4077.11	0.42%	0.18%
2014	7.3340	1821.98	4260.80	0.40%	0.17%

Source: Own calculation based on MPSV[64] and CZSO data[65]

[63] This amount could be compared to the total number of mothers who are withdrawing this benefit, see the figure 2. Though, the costs are not estimated per mother, but in terms of public expenditure and GDP in order to maintain the same logic applied throughout the whole chapter 2, which permits the comparison.

[64]MPSV, Vývoj sociálních výdajů MPSV, [online], [17.11.2016], www.mpsv.cz-files/clanky/20863/TZ_160415a.pdf

[65]CZSO, Database of National Accounts, [online], [17.11.2016] http://apl.-czso.cz/pll/rocenka/rocenka.indexnu_en

Comparing the data of Czech maternity allowance to all Sickness Insurance spending, a slight change can be noticed during these nine years. In 2005, a maternity allowance payments occupied only 12% whereas, in 2013 the burden came nearly to 1/3 of all reimbursements. Nevertheless, this change was not caused by significant alternations in maternity leave policy but was due to the policy change of sickness leave, which entered in vigour in 2009. Since 2009, the new sickness insurance law introduced payment of compensation wages by employer in first weeks of sickness leave. As a matter of a fact that led to a decrease of expenses related to sickness leave and consequently increased the percentage distribution of maternity leave expenses.[66] For detailed development of costs, see the Attachment n II.

2.1.2 Macroeconomic impact of parental allowance

The following Table 2, depicts Czech parental allowance expressed in terms of public expenditure and GDP. According to the table, the year with the highest government expenditure on parental allowance was in 2007. This number corresponds also to the Figure 7, showing demographic trends in the Czech Republic. The birth rate in that year was the greatest in the post-communist period. Hereafter, the birth rate slowly declined, which reflects the decreasing burden of parental leave allowance as a percentage of public expenditure and GDP. Unrelated to the table, only to bring an overview, the Czech public expenditure maintains a relatively stable level in terms of GDP, representing 40%.

[66] MPSV, Analýza vývoje nemocenského pojištění 2015, [online], [12.10.2016], www.mpsv.cz/files/clanky/23180/Analyza_nemocenskeho_pojisteni_2015.pdf

Table 2: Parental Allowance as % of Public Expenditure and GDP

Year	Parental allowance (bn CZK)	Public expenditure (bn CZK)	GDP (bn CZK)	Parental leave allowance as % of public expenditure	Parental leave allowance as % of GDP
2005	12.6270	1362.40	3257.97	0.93%	0.39%
2006	13.5257	1430.82	3507.13	0.95%	0.39%
2007	28.6904	1530.89	3831.82	1.87%	0.75%
2008	28.2943	1612.53	4015.35	1.75%	0.70%
2009	28.5858	1710.66	3921.83	1.67%	0.73%
2010	27.7220	1698.79	3953.65	1.63%	0.70%
2011	25.7059	1735.92	4022.51	1.48%	0.64%
2012	25.0317	1805.84	4041.00	1.39%	0.62%
2013	24.3364	1745.91	4077.11	1.39%	0.60%
2014	22.9130	1821.98	4260.80	1.26%	0.54%

Source: Own calculation based on MPSV data[67]

The parental allowance in 2014 delineated 1.26% of public expenditure and 0.54% of GDP. This percentage of GDP is quite relevant[68], though, does not create a current burning issue. In comparison, the pension system occupies 9%[69] of Czech GDP and is greatly discussed among political topics. To maintain the reimbursement payments sustainable, the law postpones the retirement age of elderly. The generation of current retirees was not educated to save own income for retirement period, as they used to believe that social system will look after them. Moreover, the old couple manage to pay to bills once both alive. With one retirement income only, the financial situation becomes dramatic. The high age-dependency ratio justifies then the pro-natality policies. Thus, 0.54% of GDP dedicated to support parental leave allowances does not

[67]MPSV, Vývoj sociálních výdajů MPSV, [online], [17.11.2016], www.mpsv.cz/files/clanky/20863/TZ_160415a.pdf

[68] As will be shown in the following sub-chapter 2.2, the Brazilian program Bolsa Família occupies similar percentage. Though, the costs to this program, together with other reasons, contributed to the impeachment of Brazilian president in March 2016.

[69] Own calculation based on ČSÚ data

represent a current issue. Thought, it might happen that the situation and the government approach might change in the future.

2.1.3 Total costs related to maternity and parental policies

As shown in the summarizing Table 3, the maternity and parental leave allowance in total reaches 1.66 % of public expenditure and 0.71 % of the Czech GDP in 2014. The peak of macroeconomic impact in terms of public expenditure was registered in 2007 when the allowances represented the highest value. Since 2007, the expenditure related to maternity and parental payments have been slowly, though steadily, declining over the years. Nevertheless, still above the values of 2005.

Table 3: Maternity and Parental Costs as % of Public Expenditure and GDP

Year	Maternity and parental allowance as % of public expenditure	Maternity and parental allowance as % of GDP
2005	1.26%	0.53%
2006	1.29%	0.53%
2007	2.26%	0.90%
2008	2.15%	0.86%
2009	2.09%	0.91%
2010	2.07%	0.89%
2011	1.91%	0.83%
2012	1.79%	0.80%
2013	1.81%	0.77%
2014	1.66%	0.71%

Source: Own calculation based on MPSV data[70]

The Czech Republic has not implemented yet the paternity leave. However, based on the government estimations, mentioned in the first chapter, the paternity leave

[70]MPSV, Vývoj sociálních výdajů MPSV, [online], [17.11.2016], www.mpsv.cz/files/clanky/20863/TZ_160415a.pdf

allowance will consume around 630 – 800 million of CZK, depending on how many fathers will withdraw this benefit. Adding the estimation of 800 million of CZK into total expenditure on allowances of year 2014, the burden of public expenditure would reach up to 1.70 % and 0.73 % of Czech GDP.[71] Hence, the implementation of paternity leave will not have a dramatic macroeconomic impact on the current ratio spending.

2.2 Macroeconomic cost estimation in Brazil

This chapter estimates the macroeconomic impact related to maternity leave policy in Brazil. To evaluate the burden, the costs are expressed in terms of public expenditure and GDP analogically as in the Czech case in the previous sub-chapter. The data comes from governmental data source DATAPREV[72] and also from the Central Bank of Brazil.[73] The costs are expressed in the local currency, the Brazilian Real (BRL) to prevent from inconsistencies related to exchange rate fluctuations. The overview and the comparison of macroeconomic impact is done through the percentage variable in terms of public expenditure and GDP and hence. The ratios are calculated for the years 2005 – 2014 analogically as in sub-chapter 2.1.

2.2.1 Macroeconomic burden of maternity allowance

The Table 4 shows maternity leave allowances paid within the ten years expressed in terms of public expenditure and GDP. According to the results, the total amount has been slowly increasing over the time, nevertheless, the macroeconomic impact is negligible. Maternity leave allowance in terms of public expenditure reached 0.0408% in 2014 and in terms of GDP 0.0090 percent. Such a spending is extremely low and thus, is not a macroeconomic issue.

[71] Own calculation based on ČSU and MPSV data

[72]DATAPREV, Ministério de Previdencia Social, [online], [10.5.2016], http://www3.dataprev.gov.br/scripts10/dardoweb.cgi

[73]BCB – Central bank of Brazil, [online], [10.5.2016], http://www.bcb.gov.br/pec/Indeco/Port/indeco.asp

Table 4: Maternity Allowance as % of Public Expenditure and GDP

Year	Maternity leave allowance (in millions of BRL)	Public expenditure (millions of BRL)	GDP (millions of BRL)	Maternity leave allowance as % of public expenditure	Maternity leave allowance as % of GDP
2005	125.50	435 149	2 171 736	0.0288%	0.0058%
2006	153.06	494 062	2 409 803	0.0310%	0.0064%
2007	184.96	560 702	2 718 032	0.0330%	0.0068%
2008	226.71	629 934	3 107 531	0.0360%	0.0073%
2009	293.08	698 689	3 328 174	0.0419%	0.0088%
2010	325.32	796 831	3 886 835	0.0408%	0.0084%
2011	351.44	894 746	4 374 765	0.0393%	0.0080%
2012	424.94	981 881	4 713 096	0.0433%	0.0090%
2013	473.74	1 092 970	5 157 569	0.0433%	0.0092%
2014	497.38	1 219 733	5 521 256	0.0408%	0.0090%

Source: Own calculation based on IBGE data[74]

2.2.2 Macroeconomic burden related to Bolsa Família

To estimate the macroeconomic impact of maternity leave in Brazil, the cost estimation for the program Bolsa Família is included as well. This social program is destined for poor families, which monthly family income per capita does not overcome 170 BRL (approximately 50 USD[75]). Poor families in the precarious economic situation might participate only if they have children up to 17 years old or pregnant female. By complying with several requirements, the families are eligible to obtain a credit card with a certain monthly income. The requirements to receive the financial allowance are to ensure at least 85% frequency of school attendance for pupils aged 6-15, and 75% for those 16-17 years. For pregnant woman, the conditions are to participated in educational activities offered by the Ministry of Health on breastfeeding and health

[74]IBGE, Meta Dados, [online], [17.11.2016], http://www.meta-dados.ibge.gov.br/consulta/prnPesquisa.aspx

[75] Applying the Exchange rate relevant to 17.11., [online], [17.11.2016], http://brl.fxexchangerate.com/usd/170-currency-rates.html

food. In addition, to be entitled to receive the financial allowance, the family must keep up the vaccination cards of children from 0-7 years.[76]

Table 5: Costs Related to Bolsa Familia as % of Public Expenditure and GDP

Year	Bolsa Familia (in millions of BRL)	Public expenditure (millions of BRL)	GDP (millions of BRL)	Bolsa Familia as % of public expenditure	Bolsa Familia as % of GDP
2005	6 500	435 149	2 171 736	1.49%	0.30%
2006	7 800	494 062	2 409 803	1.58%	0.32%
2007	9 200	560 702	2 718 032	1.64%	0.34%
2008	10 500	629 934	3 107 531	1.67%	0.34%
2009	12 700	698 689	3 328 174	1.82%	0.38%
2010	14 600	796 831	3 886 835	1.83%	0.38%
2011	17 600	894 746	4 374 765	1.97%	0.40%
2012	20 300	981 881	4 713 096	2.07%	0.43%
2013	24 900	1 092 970	5 157 569	2.28%	0.48%
2014	27 200	1 219 733	5 521 256	2.23%	0.49%

Source: Own calculation based on IBGE data[77]

Although, this program is not equal to allowance in maternity leave due to its selectivity only to poor families, the cost estimation of this program is relevant to this thesis due to its orientation to families with children. It is a significative financial support from the government, however, only the poorest families are eligible for this benefit. In total, nearly 14 million of families are beneficiaries of this program and the financial allowance varies with the precariousness of the economic situation and the number of children.

The total costs related to Bolsa Família in terms of public expenditure and GDP are substantial (see the Table 5). In 2005, 6.5 billion of BRL were transferred to poor families whereas, in 2014 this amount incremented to 27.2 billion of BRL. These

[76]CAIXA, Bolsa família, [online], [10.10.2016], http://www.caixa.gov.br/programas-sociais/bolsa-familia/Paginas/default.aspx

[77]IBGE, Meta Dados, [online], [17.11.2016], http://www.meta-dados.ibge.gov.br/consulta/prnPesquisa.aspx

amounts are massive, representing 2.23 % of public expenditure and 0.49% of GDP in 2014. It might not seem that much comparing with the costs in the Czech Republic, however, it is important to perceive the social program in its national context. Program Bolsa Familia faced strong criticism in Brazil and it was one of the reasons, which contributed to the impeachment of president in March 2016.

The Bolsa Família program, implemented and maintained by left wing government of Workers Party (PT) constantly redistributed the income throughout the years with increasing trend, thus the total value of subsidizing raised more than four times in ten years. After the impeachment of Dilma Rousseff in March 2016 and the overthrow of the leftist government, this financial expenditure might potentially change in upcoming years since one of the criticism raised during the impeachment process, made by middle-income class, was this income redistribution social policy.

2.2.3 Total costs estimation

The Table 6 quantifies the total costs related to maternity leave allowance and Bolsa Família program in terms of public expenditure and Brazilian GDP. As shown in the Table 4, the costs related to maternity leave allowances are negligible, though, those related to Bolsa Familia are definitely significant. It is worth mentioning that the paternity leave allowances paid in Brazil within the analysed years 2005 – 2014 are included in figures of maternity leave allowances since they belong to the same national account. The maternity allowance and Bolsa Familia represented 2.27 % of Brazilian public expenditure and 0.5% of GDP in 2014. The retirement system, in comparison, cost 7.4% GDP in 2015. The spending related to pension system has an increasing trend in Brazil. In 2006, the pension system occupied 6.9% of GDP increasing by a half of percentage of GDP nine years later. [78]

[78] Ministry of Finance, Relatório de Análise Economica dos Gastos Públicos Federais, [25.10.2016], [online], http://www.fazenda.gov.br/centrais-de-conteudos/publicacoes

Table 6: Total Costs as % of Public Expenditure and GDP

Year	Maternity leave allowance and Bolsa Familia as % of public expenditure	Maternity leave allowance and Bolsa Familia as % of GDP
2005	1.5226%	0.3051%
2006	1.6097%	0.3300%
2007	1.6738%	0.3453%
2008	1.7028%	0.3452%
2009	1.8596%	0.3904%
2010	1.8731%	0.3840%
2011	2.0063%	0.4103%
2012	2.1107%	0.4397%
2013	2.3215%	0.4920%
2014	2.2708%	0.5016%

Source: Own calculation based on IBGE data[79]

The results of cost estimations related to maternity (and parental leave) in the Czech Republic and Brazil might tend to be compared. The total Czech costs expressed as percentage of public expenditure are 1.66 % and 0.71 % of GDP. The Brazilian total costs consume 2.27% of public expenditure and reflects 0.50% of GDP. Nevertheless, I strongly believe that the results should not be compared at this level since the studied programs are different. Instead each country should be analysed separately in its own circumstances.

2.3 Cost estimation of Czech model implementation to Brazilian data

The following simulation will analyse the possibility of implementation of Czech system of maternity and parental leave into Brazil. By doing so, the model will estimate the total maximum costs related to these policies in terms of public expenditure and GDP for years 2005-2014. The model uses the real data nevertheless, simplifies the

[79]IBGE, Meta Dados, [online], [17.11.2016], http://www.meta-dados.ibge.gov.br/consulta/prnPesquisa.aspx

process of estimation in an extrapolation model. The simulation uses the IBGE and IPEA data.

2.3.1 Cost estimation of Czech maternity leave model in Brazil

The model has several assumptions, which might though decline the precision of the results. In particular, the model establishes one to one relation between a child and a mother. Each mother gives birth to a one child only and hence the number of children equals to the number of beneficiaries of social aid. The twins or greater multiple births at once are neglected for the simplicity of the simulation. In addition, the model assumes that all the mothers, before giving a birth, were legally employed and contributed to the social system and hence are eligible to receive the maternity leave allowance. In reality, this number would be lower and hence the total costs. By this premise, the model overestimates the real costs. Or, in other words, estimates the total maximum costs related to the implementation of Czech maternity and parental leave model to Brazil. In addition, the simulation applies the average salary. The average salary tends to be greater than modus or median, which would be more accurate for the calculation. However, these indicators were not found for the Brazilian statistics and thus the model uses the average income. Again, this tends to overestimate the real burden. For the plainness of the model, the calculation uses 70% of average salary, neglecting the specifics of three reduction levels of assessment base. In addition, the inflation rate during 10 years is neglected.

Maternity leave allowance in the Czech Republic constitutes of 70% of previous gross wage. In order to see the Brazilian costs, the model uses 70% of average Brazilian salary. The maternity leave in the Czech Republic takes seven months, hence to estimate the costs, the 70 percentage income salary is multiplied by seven months of the leave during which the mother is entitled to receive the aid. To obtain the full cost estimation, this amount is multiplied by the total number of children born on yearly basis projecting the number of mothers who would withdraw this benefit. This yearly costs are then compared to the total public expenditure and GDP in the step two.

Table 7: Maximum Total Costs of Maternity Leave Allowances

Year	Monthly Average salary (in BRL)	70% of average salary (in BRL)	Children born in Brazil	Cost of maternity allowance for 7 months (millions of BRL)
2005	983.1	688.17	3 035 096	14 621
2006	1059.1	741.37	2 944 928	15 283
2007	1141.4	798.98	2 891 328	16 171
2008	1261.4	882.98	2 934 828	18 140
2009	1357.5	950.25	2 881 581	19 168
2010	1491.7	1044.19	2 861 868	20 918
2011	1634.7	1144.29	2 913 160	23 334
2012	1800.7	1260.49	2 905 789	25 639
2013	1938.2	1356.74	2 904 027	27 580
2014	2134.6	1494.22	2 905 888	30 394

Source: Own calculation based on IPEA data[80]

The table 7 shows the cost estimation for the years 2005-2014. The monthly gross average salary is decreased to its 70%, multiplied by the beneficiaries (the number of children born in Brazil in that period), multiplied by seven months estimating the total costs in millions of BRL. The total number of children born in Brazil is decreasing over the time, though the monthly average salary is increasing and thus, the total costs of maternity allowance for seven months almost doubled in 10 years, neglecting the inflation rate.

The Table 8 uses the costs of maternity leave allowances in millions of BRL and compares them to public expenditure made throughout the same years, plus estimating the burden in terms of Brazilian GDP. If Brazil had adopted the Czech model of maternity leave, the macroeconomic impact would be 2.49% of public expenditure and 0.55% of GDP in 2014. It is worth noticing that despite the increasing total costs of maternity leave allowance (see Table 7), the burden in terms of public expenditure and GDP is decreasing over the time (see Table 8). It is necessary to highlight that due to presumptions, the table shows the maximum total costs and the real burden would be

[80] IPEA, Ipea Data, [online], [17.11.2016], http://www.ipeadata.gov.br/Default.aspx

lower. The real macroeconomic burden would most likely decrease by 2/3 if taking into the account the Figure 3, which shows that generally only 1/3 of mothers contribute to the social system and hence are eligible to receive the financial allowance.

Table 8: Maximum Costs of Maternity Leave Allowances in Terms of Public Expenditure and GDP

Year	Public expenditure (millions of BRL)	Maternity leave allowance in terms of public expenditure	GDP (millions of BRL)	Maternity leave allowance in terms of GDP
2005	435 149	3.36%	2 171 736	0.67%
2006	494 062	3.09%	2 409 803	0.63%
2007	560 702	2.88%	2 718 032	0.59%
2008	629 934	2.88%	3 107 531	0.58%
2009	698 689	2.74%	3 328 174	0.58%
2010	796 831	2.63%	3 886 835	0.54%
2011	894 746	2.61%	4 374 765	0.53%
2012	981 881	2.61%	4 713 096	0.54%
2013	1 092 970	2.52%	5 157 569	0.53%
2014	1 219 733	2.49%	5 521 256	0.55%

Source: Own calculation based on IPEA data[81]

2.3.2 Cost estimation of Czech parental leave in Brazil

The following calculation estimates the potential costs related to parental leave in Brazil. Again, the Czech system is applied to Brazilian data. In the Czech Republic, every mother is entitled to a maximum amount of 220 000 CZK per child regardless of her former contributions to the social system. The model still assumes one to one relation between mother and a child, so to obtain the total number of beneficiaries the costs are multiplied by the number of children born in studied years. In the Czech system, the burden would be divided by the chosen period between 2-4 years. For the

[81] IPEA, Ipea Data, [online], [17.11.2016], http://www.ipeadata.gov.br/Default.aspx

simplicity of the simulation, the model assumes that every mother will withdraw the benefit in one year only.

Additional premise is that each mother will withdraw the full amount of 220 000 CZK, again overestimating the real macroeconomic burden. This amount is converted to BRL by average yearly exchange rate using the web site of Czech National Bank, taking into account the yearly fluctuations of the rate maintaining the same currency for whole calculation. The total maximum costs related to parental leave model implementation in Brazil are converted to millions to maintain the same unit and then expressed in terms of public expenditure and GDP.

Table 9: Maximum Total Costs of Parental Leave Allowances

Year	Yearly average exchange rate	Parental leave in BRL	Children born in Brazil	Total costs of parental leave (in millions of BRL)
2005	10.52	20 910.56	3 035 096	63 465.56
2006	9.76	22 531.98	2 944 928	66 355.06
2007	10.21	21 547.50	2 891 328	62 300.90
2008	9.40	23 416.71	2 934 828	68 724.02
2009	9.57	22 988.51	2 881 581	66 243.24
2010	10.86	20 257.83	2 861 868	57 975.23
2011	10.58	20 788.06	2 913 160	60 558.93
2012	10.06	21 860.10	2 905 789	63 520.82
2013	9.11	24 151.94	2 904 027	70 137.88
2014	8.84	24 892.51	2 905 888	72 334.84

Source: Own calculation based on IPEA data[82]

As shown in the Table 9, the fixed amount of 220 000 CZK is converted by yearly rate to BRL defining how much financial aid the parent would be entitled to receive. The measure is then multiplied by the total number of children born in Brazil per year to define the total amount of needed financial burden. The final result is then converted to millions of BRL to preserve the same unit within the calculation.

[82] IPEA, Ipea Data, [online], [17.11.2016], http://www.ipeadata.gov.br/Default.aspx

Analogically, the results of total maximum costs of parental leave in Brazil are compared to public expenditure and Brazilian GDP (see the Table 10). As per calculation, the Czech model of parental leave would consume 5.93% of public expenditure and 1.31% of Brazilian GDP in a year 2014. Ten years before, though, the parental leave would stand for almost 15 % of public expenditure and nearly 3% of Brazilian GDP.

Table 10: Total Costs of Parental Leave Allowances in Terms of Public Expenditure and GDP

Year	Public expenditure (millions of BRL)	Costs of parental leave in terms of public expenditure	GDP (millions of BRL)	Costs of parental leave in terms of GDP
2005	435 149	14.58%	2 171 736	2.92%
2006	494 062	13.43%	2 409 803	2.75%
2007	560 702	11.11%	2 718 032	2.29%
2008	629 934	10.91%	3 107 531	2.21%
2009	698 689	9.48%	3 328 174	1.99%
2010	796 831	7.28%	3 886 835	1.49%
2011	894 746	6.77%	4 374 765	1.38%
2012	981 881	6.47%	4 713 096	1.35%
2013	1 092 970	6.42%	5 157 569	1.36%
2014	1 219 733	5.93%	5 521 256	1.31%

Source: Own calculation based on IPEA data[83]

The macroeconomic burden of paternity leave is not calculated due to the fact that this policy is not yet effective in the Czech Republic. The simulation model only applies the current Czech policies into Brazilian data in order to quantify the total macroeconomic burden.

[83] IPEA, Ipea Data, [online], [17.11.2016], http://www.ipeadata.gov.br/Default.aspx

2.3.3 Total macroeconomic burden

The implementation of Czech model of maternity and parental leave would require 8.42% of public expenditure and 1.86% of GDP in 2014 and, compared to that, nearly 18% of public expenditure and 3.6% of GDP in 2005 (see the Table 11). Comparing this data with current macroeconomic burden of maternity leave and costs related to Bolsa Família program (2.27% of public expenditure and 0.5% of GDP), it might be stated that despite the overestimation of costs, the implementation of Czech maternity and especially parental system would not be sustainable in Brazil considering the fact that the macroeconomic burden would increase almost 7 times, representing half of the pension system payments.

Table 11: Total Costs of Maternity and Parental Leave

Year	Costs of maternity and parental leave in terms of public expenditure	Costs of maternity and parental leave in terms of GDP
2005	17.94%	3.60%
2006	16.52%	3.39%
2007	14.00%	2.89%
2008	13.79%	2.80%
2009	12.22%	2.57%
2010	9.90%	2.03%
2011	9.38%	1.92%
2012	9.08%	1.89%
2013	8.94%	1.89%
2014	8.42%	1.86%

Source: Own calculation based on IPEA data[84]

[84] IPEA, Ipea Data, [online], [17.11.2016], http://www.ipeadata.gov.br/Default.aspx

2.4 Cost estimation of Brazilian model implementation into Czech data

The simulation model to come in this sub-chapter is analogical to the model in the chapter 2.3 but is viewed from the other side around. The Brazilian model of maternity and paternity leave is applied to the Czech data to estimate the total maximum costs. The macroeconomic burden is estimated for the same years 2005-2014. The data used in the simulation model mainly comes from the Ministry of Labour and Social Affairs (MPSV) and from the Czech Statistical Office (CZSO). The maximum total costs are estimated in billions of CZK or as a percentage of public expenditure and GDP.

2.4.1 Macroeconomic burden of maternity leave allowance

The maternity leave in Brazil takes up to 6 months and the mothers are eligible to receive 100% of previous income in case they were contributing to the Social System. This model assumes one to one relationship between a mother and a child. Each mother has exactly one child, hence the numbers of child defines the number of mothers, therefore the number of beneficiary. Another premise is that all the mothers are entitled to receive the maternity leave allowance. By this assumptions, the model tends to overestimate the burden because in the real case scenario, not all the mothers would be eligible for the financial aid.

As well, the maternity leave in Brazil takes four months, in some cases six months. Since the model estimates the total maximum costs, the macroeconomic burden is calculated with the maximum period of maternity leave of six months, which again tends to overestimate the results from the reality. The model estimates the total maximum costs related to maternity and paternity leave of Brazilian system if implemented in the Czech Republic estimated in terms of public expenditure and GDP. Another unprecise input biasing the results is the average salary. It is known that the average salary is higher than medium or modus salary. Nevertheless, to maintain the

calculation same for both countries, the average salary despite the overestimation is employed.[85]

To calculate the total maximum costs on yearly basis, the monthly average salary is multiplied by six months (total costs per mother) and by the number of children born each year (total costs for all mothers). The maximum total amounts are converted to billions of CZK for years 2005-2014 (see the Table 12).

Table 12: Total Costs of Maternity Leave Allowances

Year	Monthly average salary in local currency	Number of children born	100% of salary multiplied per 6 months (in CZK)	Maximum total costs (in bn CZK)
2005	18344	102211	110064	11.25
2006	19546	105831	117276	12.41
2007	20957	114632	125742	14.41
2008	22691	119570	136146	16.28
2009	23488	118348	140928	16.68
2010	23932	117153	143592	16.82
2011	24319	108673	145914	15.86
2012	25109	108576	150654	16.36
2013	25128	106751	150768	16.09
2014	25686	109986	154116	16.95

Source: Own calculation based on MPSV data[86]

The second step of the calculation consists of comparing the total estimated costs to the public expenditure and GDP (see the Table 13). The maximum total costs would

[85] The compare the salary median in 2010 was 23 059 CZK for men, 19 453 CZK for women, average of both 21 453 CZK. For the year 2014, the male median wage was 24 670 CZK whereas female reached only 20 660 CZK, average of both 22 844. This shows, that the median wage is not very distant from the average male salary, though related to females median wage, the simulation overestimates the costs by nearly 1/5.

[86]MPSV, Vývoj sociálních výdajů MPSV, [online], [17.11.2016], www.mpsv.cz/files/clanky/20863/TZ_160415a.pdf

develop from 11.25 billion of CZK in 2005 to nearly 17 billion CZK in 2014. This would represent 0.93% of public expenditure and around 0.40% of Czech GDP for the year 2014. Though, this proportion would not have changed too much over the time. The real macroeconomic burden of maternity leave in 2014 was 0.40% of public expenditure and 0.17% of GDP (see the Table 1).

The difference between these two results reflects the overestimation made by original assumptions. Not all the mothers were entitled to receive the maternity leave within this period, the 70% of former income was reduced by the three assessment bases, plus the average salary equally tends to overestimate the macroeconomic burden. These assumptions hence make the simulation of extrapolation model slightly inexact, deviating the accuracy of the model. In particular, according to the Figure 2, the trend shows that only 2/3 of mothers are eligible to receive the allowance in maternity leave and hence the total costs would most likely decrease by 1/3.

Table 13: Maternity Leave Allowances in Terms of Public Expenditure and GDP

Year	Maximum total costs (in bn CZK)	Public expenditure (bn CZK)	Total costs of maternity leave allowances in terms of public expenditure	GDP (bn CZK)	Total costs of maternity leave allowances in terms of GDP
2005	11.25	1362.40	0.83%	3257.97	0.35%
2006	12.41	1430.82	0.87%	3507.13	0.35%
2007	14.41	1530.89	0.94%	3831.82	0.38%
2008	16.28	1612.53	1.01%	4015.35	0.41%
2009	16.68	1710.66	0.97%	3921.83	0.43%
2010	16.82	1698.79	0.99%	3953.65	0.43%
2011	15.86	1735.92	0.91%	4022.51	0.39%
2012	16.36	1805.84	0.91%	4041.00	0.40%
2013	16.09	1745.91	0.92%	4077.11	0.39%
2014	16.95	1821.98	0.93%	4260.80	0.40%

Source: own calculation based on MPSV data[87]

[87]MPSV, Vývoj sociálních výdajů MPSV, [online], [17.11.2016], www.mpsv.cz/files/clanky/20863/TZ_160415a.pdf

The simulation of Brazilian parental leave into the Czech data is not estimated by the calculation since there is no such a policy in Brazil. The model only calculates the costs resulting from applying the current Brazilian maternity (and paternity) policy into the Czech data.

2.4.2 Impact of paternity leave

The following sub-chapter estimates the macroeconomic impact raising from the application of Brazilian paternity leave into the Czech Republic. The Brazilian paternity leave takes five days in some cases 15 days. The recent law changed the legislation and prolonged the paternity leave into 20 days, though not all the fathers are eligible to withdraw the leave of 20 days (see chapter 1.1). Nevertheless, the model tries to estimate the maximum macroeconomic costs related to the implementation of the paternity leave and hence the calculation is done with 20 days.

The model firstly assumes one to one relationship between a father and a child and disregards the twins and multiple births at once. Secondly, the model presumes that all the fathers will withdraw the leave and will stay at home for the period of 20 days receiving the financial aid. The third premise is the typical family unit of two parents (male and female) with a born child. The model includes the second born child in the family (once born in a different year within the period of 2005-2014) because the calculation is done through the number of born children assuming that the mother will withdraw the financial benefit again for the second child in a different year. Since the calculation is done based on the monthly average income, the simulation ignores the income differences between the male and the female.

Table 14 shows the estimation of maximum costs related to the implementation of paternity leave in the Brazil if fathers were entitled to receive 100% of their salary for 20 days. To obtain yearly average salary, the monthly average salary is multiplied by 12 months. This value is divided by 365.25 to obtain the daily average salary, which is then multiplied by 20 days to estimate the amount per father. This number is multiplied by the number of children born, which gives the total number of the value paid to all fathers within the year. The result is converted to billions of CZK to maintain the same units within the calculation.

Table 14: Total cost estimation of paternity leave

Year	Monthly average salary in local currency	Yearly average salary	Daily average salary	Average salary for 20 days	Number of children born	Total costs of paternity allowances (in bn CZK)
2005	18344	220128.00	602.68	12053.55	102211	1.23
2006	19546	234552.00	642.17	12843.37	105831	1.36
2007	20957	251484.00	688.53	13770.51	114632	1.58
2008	22691	272292.00	745.49	14909.90	119570	1.78
2009	23488	281856.00	771.68	15433.59	118348	1.83
2010	23932	287184.00	786.27	15725.34	117153	1.84
2011	24319	291828.00	798.98	15979.63	108673	1.74
2012	25109	301308.00	824.94	16498.73	108576	1.79
2013	25128	301536.00	825.56	16511.21	106751	1.76
2014	25686	308232.00	843.89	16877.86	109986	1.86

Source: Own calculation based on MPSV[88] and CZSO[89] data

The maximum total costs of paternity allowance are then compared to the value of public expenditure and GDP on yearly basis to create a benchmark. In fact, the paternity leave implemented in the Czech Republic with these predefined conditions would require 0.10% of public expenditure and 0.04% of GDP for the year 2014 (see Table 15).

[88] MPSV, Vývoj sociálních výdajů MPSV, [online], [17.11.2016], www.mpsv.cz/files/clanky/20863/TZ_160415a.pdf

[89] CZSO, Database of National Accounts, [online], [17.11.2016] http://apl.czso.cz/pll/rocenka/rocenka.indexnu_en

Table 15: Paternity Leave Allowance in Terms of Public Expenditure and GDP

Year	Total costs of paternity allowances (in bn CZK)	Public expenditure (bn CZK)	Paternity allowance as % of public expenditure	GDP (bn CZK)	Paternity allowance as % of GDP
2005	1.23	1362.40	0.09%	3257.97	0.0378%
2006	1.36	1430.82	0.09%	3507.13	0.0388%
2007	1.58	1530.89	0.10%	3831.82	0.0412%
2008	1.78	1612.53	0.11%	4015.35	0.0444%
2009	1.83	1710.66	0.11%	3921.83	0.0466%
2010	1.84	1698.79	0.11%	3953.65	0.0466%
2011	1.74	1735.92	0.10%	4022.51	0.0432%
2012	1.79	1805.84	0.10%	4041.00	0.0443%
2013	1.76	1745.91	0.10%	4077.11	0.0432%
2014	1.86	1821.98	0.10%	4260.80	0.0436%

Source: Own calculation based on MPSV[90] and CZSO[91] data

The estimation of the Czech government for the five days leave, that should be newly implemented, is 0.04% of public expenditure and 0.02 % of GDP[92] in 2014 benchmark. The comparison of these data is though-provoking since the estimation of the Czech government was made for five days, but the model simulation was calculated for four times as many days, but only with double increase of macroeconomic costs. Such a result points out some inconsistencies.

Firstly, the costs related to paternity leave were estimated by the Czech government at the level 630-800 millions of CZK. Since the simulation model is always applying the logic of the maximum cost approach, the calculation was made with the upper limit of 800 million. Secondly, the costs might be likely lower, situated around the lesser limit. In addition, the calculation uses the benchmark of 2014, but the estimation of population

[90] MPSV, Vývoj sociálních výdajů MPSV, [online], [17.11.2016], www.mpsv.cz/files/clanky/20863/TZ_160415a.pdf

[91] CZSO, Database of National Accounts, [online], [17.11.2016] http://apl.czso.cz/pll/rocenka/rocenka.indexnu_en

[92] For the detailed calculation see the chapter 2.1.3

for 2017 might deviate the input data. Since the government estimation was not accompanied by any closer calculation these are only approximate thoughts of calculation. Thirdly, rounding up the large numbers only to two decimal places may as well distort results.

2.4.3 Total costs estimations

This chapter estimates the maximum total costs related to the implementation of the Brazilian model of maternity and paternity policy in the Czech Republic. The costs of both policies are sum up, since the paternity leave aims to relocate father from the work in order to support mother in her new maternal duty, hence both the parents are withdrawing the benefit. The costs are then estimated in terms of public expenditure and GDP for the years 2005-2014.

By the implementation of the current Brazilian system, the total allowance of maternity and paternity leave would consume 1.03% of public expenditure and 0.44% of GDP in the 2014 benchmark (see Table 16). This percentage would be lower than the recent macroeconomic burden of 1.66% of public expenditure and 0.71% of GDP (see Table 3). The main disparities between the real macroeconomic burden and the costs estimated by the simulation model are mainly because the model entitles all mothers to receive the maternity leave allowance (overestimating costs), but does not include the more significant paternity leave allowance (underestimating costs). Nevertheless, this estimation gives an overview of total costs related to the maternity leave policies in case the parental leave would be abolished in the Czech Republic and the maternity leave would be accessible to all the mothers. This estimation is relevant from the future perspective, when the payment of parental leave will become an issue and the government will need to alter the current structure.

Table 16: Total Costs in Terms of Public Expenditure and GDP

Year	Maternity leave allowances in terms of public expenditure	Paternity allowance as % of public expenditure	Total allowance as % of public expenditure	Maternity leave allowances in terms of GDP	Paternity allowance in terms of GDP	Total allowance as % of GDP
2005	0.83%	0.09%	0.92%	0.35%	0.04%	0.383%
2006	0.87%	0.09%	0.96%	0.35%	0.04%	0.393%
2007	0.94%	0.10%	1.04%	0.38%	0.04%	0.417%
2008	1.01%	0.11%	1.12%	0.41%	0.04%	0.450%
2009	0.97%	0.11%	1.08%	0.43%	0.05%	0.472%
2010	0.99%	0.11%	1.10%	0.43%	0.05%	0.472%
2011	0.91%	0.10%	1.01%	0.39%	0.04%	0.437%
2012	0.91%	0.10%	1.01%	0.40%	0.04%	0.449%
2013	0.92%	0.10%	1.02%	0.39%	0.04%	0.438%
2014	0.93%	0.10%	1.03%	0.40%	0.04%	0.441%

Source: Own calculation based on MPSV[93] and CZSO[94] data

To replicate the logic of chapter 2.3 to the fullest extent, the model should also estimate the costs of Bolsa Familia. Though this program is not included in the simulation for several reasons. Bolsa Familia is designed to fight poverty and is attainable only for low income families. Hence, not all the families (parents) are entitled to receive this social benefits. The condition to obtain the financial transfer is therefore linked to poverty status and not to fertility of a couple. In other words, the Bolsa Familia program is not a relevant substitute of parental leave (or maternity leave) benefits. The thesis itself focuses on maternity and parental leave benefits and given that, the simulation does not include other social programs in vice-versa application. [95] In addition, the comparison of the poverty line in the Czech Republic and Brazil could be imprecise and misleading.

[93] MPSV, Vývoj sociálních výdajů MPSV, [online], [17.11.2016], www.mpsv.cz/files/clanky/20863/TZ_160415a.pdf

[94] CZSO, Database of National Accounts, [online], [17.11.2016] http://apl.czso.cz/pll/rocenka/rocenka.indexnu_en

[95] The chapter 2.2 includes the Bolsa Familia program in cost estimation, because the policy is relevant for poor parents, though it does not affect all Brazilian families.

3 Issues and alternatives

The third chapter inspects and highlights the main economic inefficiencies related to the current structure of maternity and parental leave and brings some possible alternatives. As mentioned previously, the impact of maternity and parental leave overlaps the macroeconomic field with different sectors and hence the family policies are being considered in a more extended context in this chapter. In particular, it discusses the low return to work rate and its possible solutions. As well the inefficiencies in the labour market related to the gender gap and thirdly, the adverse incentives that current structure might provoke. This chapter focuses more on the case of the Czech Republic, where the length of parental leave can be considered polemic and the current structure might have misleading impacts. However, where relevant the thesis points out also the Brazilian drawbacks of maternity system.

3.1 Return to work rate

Albeit the Czech Republic belongs to the countries with high share of economically active women, return to work rate for females with small children is one of the lowest in Europe. In effect, the Czech women belong to the most disadvantaged in the labour market due to parenthood in Europe.[96] In Brazil, only minority of mothers return to the former employment after the maternity leave. This chapter points out the inefficiencies related to labour market and suggests some alternatives that might improve the current status quo.

3.1.1 Low maternal employment rate

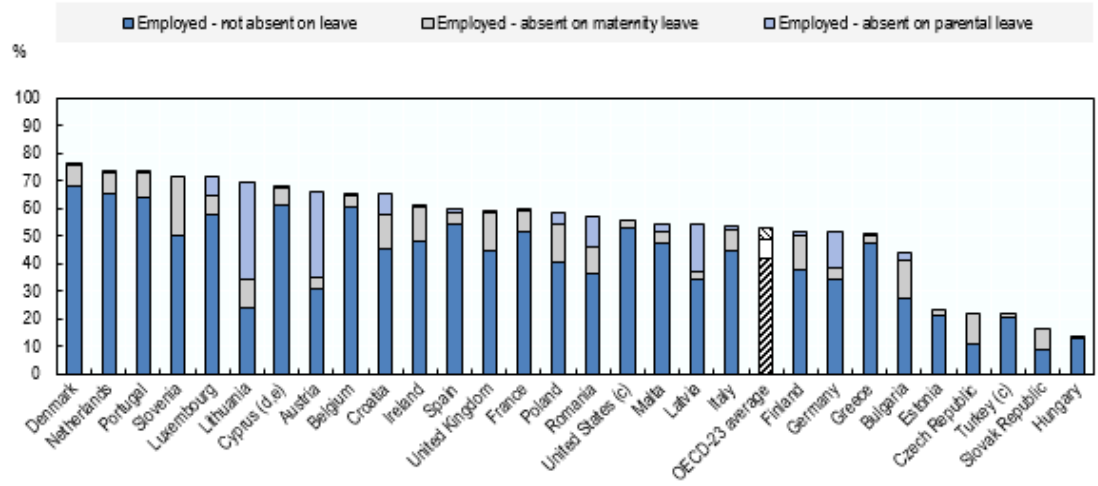
The employment rate of Czech mothers with no children aged 0-14 years reached 60.4% in 2014 whereas, the employment rate with youngest child aged 0-2 years sharply decreased to 22.4% for the same year. This percentage is slowly increasing over the

[96] Wichterlová L., Rodinná politika II, zaměřeno na kontext změn mateřské a rodičovské dovolené a nedostupnost a legislativní změny v oblasti zařízení péče o předškolní děti, 2012, [online], [10.9.2016], aa.ecn.cz/img_upload/8b47a03bf445e4c3031ce326c68558ae/rodinna-politika.pdf

years. In fact, ten years earlier, in 2004 only 13.8% of mothers with a child aged 0-2 were employed. In comparison, the employment rate with youngest child aged 0-2 in Belgium was 65.7%, France 59.1% and Poland 58.5% in 2014. Despite very low numbers, the Czech maternal employment rate grows with the age of a child. In 2014, the maternal employment rate for the youngest child aged 3-5 years increased to 71.9% and with child aged 6-14 increased to 86.6%.[97]

Therefore, these numbers point out that most of the mothers prefer to stay at home for a period of maternity and parental leave benefiting of the financial allowances. As shown in the Figure 8, the Czech employment rate for women with children aged 0-2 is together with the Slovak Republic one of the lowest of OECD countries. The trend is relatively constant for many years, but public discussion of this issue is a new phenomenon. The low return to work is mainly due to extended period of parental leave.

Figure 8: Employment Rate for Women with Children Aged 0-2 by Leave Status, 2014



Source: OECD[98]

[97] OECD, Maternal employment,[online], [1.11.2016], http://www.oecd.org/social/family/database.html

[98] OECD, Maternal employment,[online], [1.11.2016], http://www.oecd.org/social/family/database.html

The Brazilian mothers face more complicated situation in a sense of lacking the period of parental leave. Hence, after the maximum period of six months, they have to decide where to allocate their child if returning to the labour market. According to a survey conducted by Robert Half in 2013, in 85% of respondent companies, only less than 50% of its employees returned to the former position after maternity leave.[99]In Brazilian case, the tendency to return to former position is higher likely due to the fact that Brazilian mothers are not entitled to a further parental leave.

From the macroeconomic perspective, however, the extended periods of parental leave remove the labour force from the market and hence decrease the number of economically active population. As well, the additional costs are related to the decrease of employee's capacitation during the lengthy parental leave. If, for example, the employer invested heavily in the employee's knowledge and skills, once this employee leaves the labour market for a several years, the financial burden of employer turns into irrecoverable sunk costs. The longer the period of absence in the labour market, the greater the total costs. Accordingly, the human value on the labour market decreases once she or he becomes less experienced in the former professional area. The maternity leaves of six months as in Brazil or in the Czech Republic does not represent an issue because the mother does not remain located out of the market for a long time. The real issue, in the perspective of labour market, is the parental leave, which might take four years for a child, eight years for two children in a row, etc.

3.1.2 Potential solutions

To facilitate return to the labour market, some possible alternatives could be implemented. These options will be presented further. Once employed, maternal employment return rate could grow and hence all the population of economically active would increase accordingly. Given that, new job positions would be created, more income would be generated (not only redistributed) and economy would rise as a whole.

[99] Globo, Maioria das profissionais brasileiras nao volta apos licenca-maternidade, [online], [1.11.2016], http://g1.globo.com/concursos-e-emprego/noticia/2013/10/maioria-das-profissionais-brasileiras-nao-volta-apos-licenca-maternidade.html

To ease return to the labour market, the capacity of childcare institutions should be increased. As a result, a parent would have options of babysitting and hence could return to the job.

Both countries, the Czech Republic and Brazil face the lack of crèches and the low capacity of kindergartens. In particular, only 5% of Czech children under three years attend crèches, compared to 30% of European Union average.[100] The shortage of other childcare providers and the dearth of those few available, results in extended periods of parental leave taken by Czech mothers. In particular, the number of crèches dropped significantly in the 1990s mainly due to regionalisation of responsibility and the lack of mandatory service obligations. Enrolment in kindergarten is significantly greater however, the capacity is not distributed equally resulting in constraints in larger cities. According to the OECD recommendation, which refers to the Act on Child Group, the shortage of childcare supply could be solved by distribution of parental allowance as a voucher for purchasing childcare services. This measure would consecutively incentive the increase of the supply of childcare facilities. [101]

In Brazil, where parental leave does not exist, the crèches and kindergartens are publicly available. However, there are not enough places for all the children and mothers face strong difficulty. Notably in 2013, eight million children up to three years lacked public kindergarten.[102] In both countries, the capacity of childcare facilities is mainly inflexible and hence is not able to reflect the fluctuations in the number of children. Several measures could be employed in order to reply for the temporary increase.

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[100] Rozhlas, Evropská komise: V Cesku chybějí školky, i kvůli tomu mají ženy nižší platy, 2014[online], [1.11.2016], http://www.rozhlas.cz/zpravy/politika/_zprava/evropska-komise-v-cesku-chybeji-skolky-i-kvuli-tomu-maji-zeny-nizsi-platy--1357314

[101] OECD, OECD Economic Surveys Czech Republic, 2014, [online], [7.9.2016], https://www.oecd.org/surveys/Czech-Republic-Overview-2014.pdf, p.23

[102] Globo, No Brasil falta creches pública, [online], [1.11.2016], http://g1.globo.com/bom-dia-brasil/noticia/2013/10/no-brasil-falta-creche-publica-para-8-milhoes-de-criancas-de-ate-3-anos.html

First of all, the modular buildings could be utilized. Their main advantage is the ease of assembly and disassembly and thus the velocity of reaction to the need. Secondly, the elementary schools could implement the preparatory classes. These small classes of 7-15 children, would move the oldest pupils from kindergarten to the elementary school and thus enable to increase a capacity of kindergarten for younger children. Another option of solving the variation of pupils in the kindergartens is the versatility of facilities for other commercial activities. In particular, during periods of low numbers of children, the space can be rented for external individuals. Such a scheme allows to react dynamically to the changing needs.

Another option would be to develop further the concept of forest kindergarten. This one, though, is more relevant for the Czech Republic than to Brazil, where such a concept could be dangerous. According to this approach, the forest is a great playground and the nature is a wise teacher. Czech children at this alternative kindergarten could spend whole year outside, in the forest. Eventually, in bad weather, children would go to the libraries or museum. Nevertheless, these forest kindergartens are not subsidized by public budget and thus are much more expensive than the mainstream ones. [103]

Another alternative, which could help to solve the lack of childcare institutions, would be the child care provided by grandparents. Such a measure would allow parents return to the labour market, the financial entitlement of the allowance would remain, elderly would feel still valid on the market and the last but not least, parents would entrust the child to a known person. This government's proposal was made in the Czech Republic, by a political party TOP 09 in mid-2015 but was not approved. Nevertheless, the idea remains at discussion fully supported by Minister of Labour, Michaela Marksová-Tominová.[104] This option might not be so relevant to Brazil, because Brazilian

[103] Wichterlová L., Rodinná politika II, zaměřeno na kontext změn mateřské a rodičovské dovolené a nedostupnost a legislativní změny v oblasti zařízení péče o předškolní děti, 2012, [online], [10.9.2016], aa.ecn.cz/img_upload/8b47a03bf445e4c3031ce326c68558ae/rodinna-politika.pdf

[104] Hospodářské noviny, Šrajbrová Markéta – Matky by na rodičovské mohli zastoupit prarodiče, [online], [16.9.2016], http://archiv.ihned.cz/c1-64395080-matky-by-na-rodicovske-mohli-zastoupit-prarodice-stat-by-jim-vyplacel-prispevek

grandparents are not culturally used to look after grandchildren. Most of the middle income and high income families have their own babysitter, called *baba*, who ends up spending more time with an offspring than biological mother also creating very strong connections.

The last but not least potential solution of facilitating parent return to work, would be a greater offer of part time shifts. The offer of part-time jobs is very low in the Czech Republic as well as in Brazil. In 2014, only 5.4% of Czech women with at least one children aged 0-14 worked part-time. Full time positions were occupied from 56.2% the same year. When comparing the Czech Republic's rate with neighbouring country, Austria, it can be noticed that the Czech part-time rate is extremely low. The same year 40.5% of Austrian mothers with at least one child aged 0-14 worked part-time and 35.3% full-time. [105]

3.2 Income inequalities raising from gender gap

The structure of maternity and parental leave with the predominant role of mothers faces several inefficiencies related to the different role of sexes during the childbearing process. The Czech Republic is one of the few countries without paid paternity leave. Considering the fact that parental leave is currently mostly used by mothers (98% in 2012)[106], detachment from working environment for a significant period of time results in female discrimination in labour market.

The Brazilian government has already recognized the significant role of fathers during the motherhood period and hence implemented paid paternal leave for up to 20 days. Despite paternity leave, the current structure spotlights mothers as predominant in the

[105] OECD, Maternal employment,[online], [1.11.2016], http://www.oecd.org/social/family/database.html

[106]MPSV, Rodičovská dovolená v režii otců?, [online], [1.11.2016], www.mpsv.cz/files/clanky/17476/tz_120314a.pdf

babysitting process. This chapter analyses the maternity policies in terms of gender gap and secondly offers possible solutions.

3.2.1 Issues related to different role of sexes

Maternity leave policies by granting special rights to women strongly contribute to imbalance between genders. By being absent from labour market for several years[107], Czech woman is 'penalized' by her market value decrease in labour market. According to the theory of the Market for Lemons introduced by the economist George Akerlof and explored by economists Michael Spence and Joseph Stiglitz, the asymmetry of information creates the adverse selection, which declines the female market value at the labour market. The employers, in essence, assume every woman will end up staying off work for maternity leave for a longer period, which hence decrease their competitiveness in labour market compared to men. Such an attitude results in lower female salaries, their discrimination in working environment and contributes to the increase of gender gap.

Nevertheless, the different roles of sexes are not related only to the working environment, but also to the household obligations. The decision to go on for the parental leave signifies the conflict of identity for the Czech male mindset. It is not only individual masculine mindset but also the pressure of Czech society, which stresses the division of marital duties. The general perception of child care in the Czech Republic hence seems to be outdated.

3.2.2 Possible solutions

In order to reduce gender inequalities, the same rights and especially obligations should be granted to both sexes. Forcing men to abstain from work for the same period as women do by sharing the maternity leave and child care would diminish the inequalities set between genders at the labour market. Sequentially, women by requiring the same obligations for men would attain equality towards prospective employers and hence,

[107] Relevant for the Czech Republic since Brazil does not have the parental leave, but only maternity leave of few months.

shrink the information asymmetry. In other words, feminist currents should not strive for greater female rights, but in the opposite, should fight for obligations for men in order to equal their position.

In other words, the role of fathers during the child bearing process should be enhanced. Active participation of men in the child care system leads to an increased willingness of women, especially of those with tertiary education, to decide for maternity hood and in particular for a multiple one. Therefore, by involving fathers in the process, the Czech fertility could naturally increase. The majority of Czech couples opt for the standard model of mothers on parental leave while fathers remain at their work position earning income. Such a split of activities is mainly due to economic causes – men generally earn higher salaries – but also due to preconceived ideas of women responsible for childcare whereas men for bringing money in.

Comparing globally, the situation where men by law are not involved in the childcare and child raising at all looks alarming. Analysing neighbourhood countries, Germany and Austria, significant disparities can be highlighted. For example, since 2008 Austrian parents are both entitled to the parental leave. In particular, the model refers to both parents where mother and father are entitled to a certain period of time and allowance and this cannot be transferred from one to the other partner. Hence, if the couple want to utilize all financial allowances provided by government policies, both need to abstain from work in order to accomplish parental duties. The model includes three options of withdrawing benefits; 30 + 6 months, 20 + 4 months, 15 + 3 months and from 2010 also 12 + 2 months. This last model of 12 + 2 months was introduced in Germany in 2007 and the number of fathers on leave has increased noticeably since then. Two years later, in 2009 men represented 19,5 % of all parents on parental leave, whereas before 2006 only less than 4 % of fathers went on parental leave. [108.]

[108] Wichterlová L., Rodinná politika II, zaměřeno na kontext změn mateřské a rodičovské dovolené a nedostupnost a legislativní změny v oblasti zařízení péče o předškolní děti, 2012, [online], [10.9.2016], aa.ecn.cz/img_upload/8b47a03bf445e4c3031ce326c68558ae/rodinna-politika.pdf

Such a model could be equally implemented in the Czech Republic. To stimulate the relationship between father and a child, a part of parental financial allowance could be made conditional on fathers taking part of the parental leave. Apart from the deepening relationship, this measure would also contribute to the decreasing gender gap between both sexes. According macroeconomic perspective of OECD, by closing the gender employment gap by 2030, the annual growth of GDP per capita would grow by 0.5 percentage points.[109]

Simultaneously, it is necessary to push gender equality at home level. If this mentality changes and men will be perceived as competent family caregivers, most likely the confidence of courts will increase accordingly and more easily the child will be entrusted to the father's care. At the same time, the mindset of whole Czech society should change and the gender gap should be removed. Notwithstanding, the maternal leave financial support and time spent with children at early age is a cultural difference which might be hardly changed from day to day.

3.3 Length of parental leave as adverse incentive

This issue is related to the Czech Republic only, since Brazil does not have parental leave in place. The ongoing Czech structure of parental leave causes ambiguous impacts. The most sensitive groups of jobless mothers or unemployed students can only withdraw the total parental leave allowance in four years' period. Such a condition only prolongs and complicates their return to the labour market. Hence, formerly unemployed mothers will become in greater difficulty to find a job once parental leave is over. This self-feeding process is not definitely the aim of the policy, though, it is the adverse impact that the current structure causes. In addition, due to the legislation, Czech mothers can only utilize the public kindergarten since the child turns three years old. Such a measure, equally maintains artificially the mothers out of the labour market, undervalues their position of babysitter while increasing the gender gap.

[109] OECD, Economic Surveys Czech Republic, 2014, [online], [7.9.2016], https://www.oecd.org/surveys/Czech-Republic-Overview-2014.pdf, p.23

3.3.1 Extended periods of parental leave

First of all, the Czech mothers who have not been formerly employed are not eligible to receive maternity leave allowances, which is paid from sickness insurance. The same unavailability of maternity leave allowances relates to the students. The only case when students are entitled to receive the financial aid is in case they finish their studies and enter the job before delivering date.

Jobless mothers, independently of being students or formerly unemployed, represent the most sensitive group and the lack of financial aid during maternity leave only tend to deepen their economic desperate situation. These mothers are only entitled to paternal leave allowances, which are available to all regardless the previous contribution to the social system. In case a mother decides to withdraw all the financial allowance stemming from her entitlement during parental leave, which is very likely in her economic situation, she is convicted to remain out of labour market for four years[110] and thus is losing her employability.

Such a rule results in difficulty when returning to work engagement and hence extends income gap between social classes. Due to the fact, that parents are entitled to the financial allowance in parental leave only for the youngest child, this law discourage low-income families to have another child within 4 years, as otherwise the family loses its entitlement. Considering the fact that the return to the labour market for formerly unemployed mothers is more difficult, they might opt for a second child once the allowances for the first child are withdrawn. This could result in a parental leave of four years with a first child, followed by other four years leave with second child, etc. The increasing time of leave with additional number of children implicates a great issue for a mother once she decides to return to the labour market.

Secondly, the average age of mothers expecting the first child is increasing, such a measure artificially increases the mother's age once she decides to have the second

[110] Parents are entitled to 7 600 CZK for 9 months from the date when baby is born, and the remaining period until 4 years of the baby, the allowance is 3 800 CZK per month.

child. In effect, this consecutively triggers the additional burden on public accounts if C-section, special health care and treatment are needed for older mothers. Therefore, such an impact is not definitely the aim of family policy framework and hence creates adverse incentives.

Thirdly, even if some mothers might be willing to return to the labour market before the child reaches three years, they face the shortage of crèches. Those few available are often private, hence very costly and only high income families can afford those. Mothers at worse economic situation, who cannot afford such a luxury and thus opt for public facility, might only utilize it according to legislation once the child reaches three years. Therefore, such a requirement constrains mothers to opt for maternity leave with duration of three years. And again, the legislation incentivizes mothers to stay out-of-work for a significant period impeding their return to the career. In addition, it is only possible to place children in the kindergarten since they reach three years and in most of the cases merely from September. Nevertheless, the protection on the labour market related to parental leave lasts only up to three years of the child. Accordingly, the parents who do not manage to return to work process before child's completion of three years, are losing the right to return to their previous job position consistent with employment contract. However, not always the child's 3rd birthday matches perfectly on time with month of September. In this particular situation, the parents are obliged to find a different option of childcare facility or renounce on their job protection.

3.3.2 Possible alternatives

The potential solution to the current unwanted impacts would be to alter the legal framework in several aspects. The length of parental leave should be flexible for all, who withdraw this financial benefit. Simultaneously, the period of parental leave should be reduced, or at least, the shorter options (of six months, one year) could be available for all. In that way, formerly unemployed mothers or students could opt for shorter period of parental leave and hence return to the labour market faster. Currently, if they want to return to the job before the end of the parental leave, they have to give up their right to receive the financial allowance. In other words, they are punished compared to peers by opting for work instead of childcare.

Following this logic, the return to the labour market after parental leave would become easier for the mothers, who would then contribute to the proportion of economically active population, creating more income resulting in GDP growth. The aim of the family policy hence should be reshuffled from the point of providing subsidy to woman to stay at home child caring more into facilitating her return to the labour market.

The same logic applies to the legal framework, which defines the minimum age of children that might attend the kindergarten. If removing the minimum age of three years, offering greater possibilities of public child care institutions (crèches and kindergartens), the parents would most likely opt in higher percentage to return to work instead of staying home receiving the financial benefit. In addition, more infant care services would create more job positions, which would be also more convenient in macroeconomic perspective.

3.4 Quantity of children vs family income situation

This particular issue relates to both analysed countries, the Czech Republic and Brazil. The statistics have shown over the years that the negative correlation exists between income and the quantity of children. The more economically developed country, the less children per family are born and bred. This finding has not been only registered across the continents, but as well within a country. Richer parents tend to have less children compared to their peers. In addition, the same occurrence has been experienced as well throughout the time series; fertility usually drops over the time as income grows. Such a paradox goes fully against the initial Malthus theory conditioned by geometrical population growth.[111]

In the poorer regions of Brazil such as North or Northeast, the quantity of children in families is higher than in industrialized richer region of Southeast. Equally in the Czech Republic, the women with successful work life tend to have less children than those for which, the income resulting from social subsidies signifies an important income.

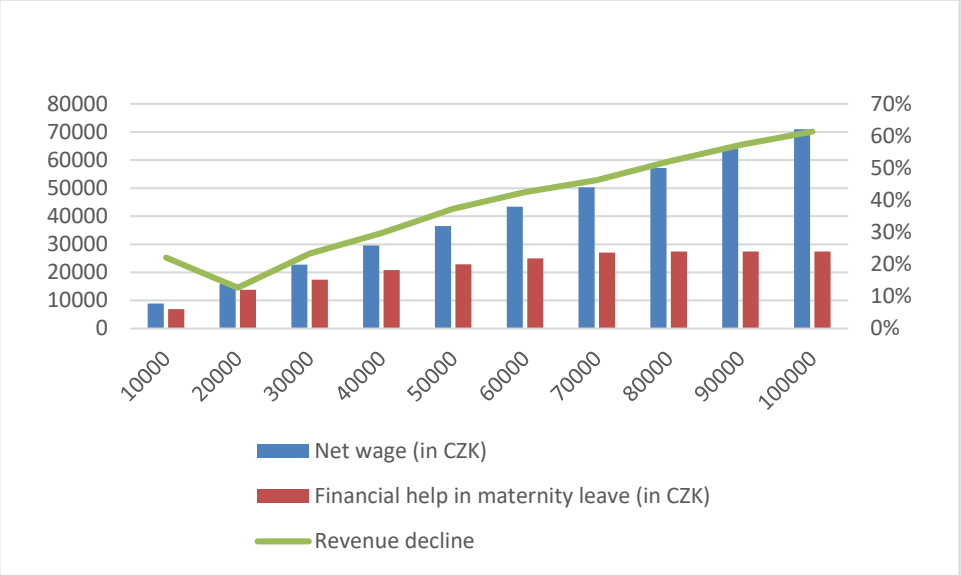
[111] PERKINGS D. H., RADELET S., LINDAUER D. L., BLOCK S. A., Economics of Development, 2014, ISBN – 0-393-93435-7, page 235

Despite the biological need of reproduction, each time the mother as rational economic agent, compares the child bearing costs to her opportunity costs. It is then particularly important that the family policies in place support fully her decision and do not create any adverse incentives.

3.4.1 Adverse incentive to low income families have more children

The ongoing legal framework of maternity and parental leave though might create ambiguous incentives. First of all, Czech mothers are entitled to receive 70% of former gross wage up to a certain ceiling. During the period of leave, the mothers are not economically active and hence are not receiving their salary. To fill the financial shortfall, they receive the allowances. Nevertheless, the rational mother compares her opportunity costs (regular salary) with the financial allowances she receives. With the ceiling in place for maternity leave allowances, from a certain level, independently from her previous income, she might not receive more than that. The mother-to-be gives up her net wage for maternity allowance and thus she takes the intertemporal decision. In other words, the higher the salary of mother, the higher opportunity cost for having the baby. The lowest relative revenue decline is at the level of 20 000 CZK of gross wage and represents rounded 13%. Since this salary, the decline in revenue comparing net wage and financial help in maternity leave is significantly growing each time as shown in the chart below.

Figure 9: Opportunity Costs of Czech Mothers Expressed by Revenue Decline



Source: own calculation based on MPSV data[112] –

(right axis relates to the revenue decline)

The financial allowances during parental leave might have even more adverse impact. Regardless of previous income, every mother is entitled to a fixed amount of 220 000 CZK. This might be a significant amount for low income families whereas, at the same time this number might be very low for higher income family. The social logic behind is to support the families in need therefore, those with low income. Nevertheless, this might lead to a point, where low income families substitute their income by reproducing and hence receiving the allowances whereas, high income families might consider the large opportunity costs and might decide to have less children.

Accordingly, the greater the quantity of children, the lower the maternal employment rate. In 2014, 86.4% of mothers were employed with no children aged 0-14 years. This proportion decreases to 67.7% of mothers with one child in this age group, to 62.1% with two children and to 40.2% only for mother with three children or more, which is again one of the lowest scores of Europe.[113] Similar correlation trend can be noticed

[112] MPSV, Nemocenské pojištění v roce 2016, [online], [5. 12. 2016], http://www.mpsv.cz/cs/7

[113] OECD, Maternal employment,[online], [1.11.2016], http://www.oecd.org/social/family/database.htm

between the level of mothers' education and the quantity of children. Maternal employment rate with high level of education was 61.8% in 2014, whereas with low level of education reached only to 29.7%. Again, the Czech Republic scored among the lowest of the OECD countries.[114] On top of that, due to the fixed amount of 220 000 CZK of parental allowance, which is the same for formerly employed as well as unemployed, mothers might end up losing the motivational factor to acquire a decent job before maternity. This model hence encourages the male breadwinner model and increment the gender gap.

The ideal, though, would be that the richer parents have more children because they enjoy more financial means to educate them and hence children are more beneficial for a society as a whole. To sum up, the current framework of maternity leave allowances in the Czech Republic has a different impact on low versus high income families. Revenue decline is less significant for low income mothers, which in effect, might encourage low income families have more children.

In Brazil, the situation is different in the sense that the maternity allowance represents 100% of female previous income and hence, Brazilian mothers are not undergoing the intertemporal decision between a child and the income taking into account the opportunity costs.[115] Hence, the decision of becoming a mother has a similar impact on whole working female population within Brazil. The income proportion remains the same and thus, the maternity policy framework is much more equitable. It can be stated, that the maternity conditions are more equal and flat within the Brazilian society and thanks to that the Brazilian maternity policy does not create adverse incentives to the mothers-to-be.

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[114] OECD, Maternal employment,[online], [1.11.2016], http://www.oecd.org/social/family/database.htm

[115] The only exception of cap is applied in the case that mother's former monthly salary was above the salary of the Minister of the Federal Supreme Court, at the level of 12 720 BRL (approximately 150 000 CZK). [online], [18.11.2016], http://www.guiadedireitos.org-index.php?option=com_content&view=article&id=547&Itemid=250

Regarding the social program Bolsa Familia, some people can equally criticize that Brazilian poor families might want to have more children just to receive greater amount of financial aid from the government. However, statistics have shown in the chapter 1.3.1 that this criticism is rather false. The Figure 6 and 7 pointed out the decreasing numbers of fertility and natality. These two indicators are decreasing each time in Brazil, which is relevant also for poorer regions. The income redistribution made by Bolsa Familia is more oriented to fight the poverty. The financial subsidy derives from the poverty base line and not from the number of children. Hence, the program does not incentive to have artificially more children in order to receive the benefits, but instead it is more oriented to pull out the families out of poverty and develop economically the country as a whole. The richer and more educated families tend to have less children and this is what is exactly happening in Brazil. Therefore, the critique that the income redistribution increases the number of children born in Brazil is not relevant.

3.4.2 Narrowing incentives

As mentioned, the policy structure in Brazil is well set, though, the Czech case is rather questionable. The possible solution for the Czech framework would be to increase the maternity leave to 100% of previous income and to alter the parental leave allowances in terms of percentage of former income as well. Such a change would decrease the adverse incentives and no mothers would be disadvantaged.

Another alternative how to avoid adverse incentives could be to support more the parents via indirect benefits. The same quantity of the benefit, especially the parental leave allowance, could be transferred to the parents in the form of income tax reduction. Instead of receiving the monthly amount of cash, the parent would be entitled to discount the same amount from the income taxes. Such an act would highlight the role of economically active mothers. In addition, it could help to develop good working habits. Also, the psychological factor would be in place; low income families would not receive the cash on monthly basis but instead would be incentivized to return to the labour market.

The amount of the money could remain the same, but likely the mindset of people would change. Equally, the financial allowance could be in the form of pre-paid vouchers for

childcare institutions or childcare equipment. Such a measure would avoid the cases, where low income families might misuse the income for infant unrelated items, such as cigarettes or alcohol.

3.5 Macroeconomic impact

The maternity and parental leave have had a long tradition in the Czech Republic. As shown in the second chapter, the allowance represented quite a significant burden. Specifically, 0.40% of public expenditure of maternal leave allowance and 1.26% of public expenditure burden related to parental allowance. Whereas, the need of maternity leave is biologically and ethically undeniable, the long term macroeconomic sustainability of parental leave might be questionable. The Czech government should always ensure with regular cost-benefit analysis that the macroeconomic costs do not overweight the benefits. However, no scientific papers treating this topic of cost-benefit analysis regarding the Czech parental leave were found to bolster the topic with more relevant arguments.

If potentially, the unsustainability of parental leave is revealed one day in the future, finding out that the total social costs are greater than the benefits, the period and the quantity of allowances will need to be shorten. Such a measure, though, would definitely turn any Czech political party unpopular, because Czech population take maternity and parental leave rights for granted. This chapter discusses the macroeconomic effects of shortening the parental leave while providing more childcare institutions. It highlights few issues the thesis came across and comes up with several alternatives.

This chapter is equally relevant to Brazil due to the fact that Brazilian mothers also face the compelling shortfall of crèches and kindergartens. Hence, the discussion of macroeconomic effects of greater capacity of these institutions is likewise pertinent. Additionally, the costs, benefits and overall sustainability of Bolsa Familia program are discussed further.

3.5.1 Needed change

The macroeconomic issue related to family policies in the Czech Republic is the sustainability of parental leave payments in the long term. The OECD suggests to reduce gradually the duration of the parental allowance. Nevertheless, the length reduction in leave periods should be conditional on an accompanying expansion of affordable and high quality early childcare facilities.[116] The greater the offer of childcare institutions, the larger the maternal engagement in working process. Such a change would fetch several macroeconomic benefits, but also costs.

Among the profits of greater maternal employment, the followings can be stated; the lower expenditure of social benefits, the higher collection of income tax and the greater collection of insurance payments. Higher return to work rate would result in additional public budget revenues through income tax and deductions for compulsory social and health insurance payments. In the long term, these benefits would transform in higher lifetime earnings and hence greater tax collection and higher household incomes. From the demographic perspective, the greater offer of childcare institution would lead to a higher willingness to have children. Through a higher birth rate, the financial burden of demographic aging would be reduced. Similarly, in terms of labour market, the educated and experienced human capital would be better used and less wasted. [117]

Regarding the disadvantages, the operation costs of childcare institutions would arise together with needed investment burden. At the same time, by increasing the maternal employment rate, public revenues would suffer decline related to higher income tax

[116] OECD, OECD Economic Surveys Czech Republic, 2014, [online], [7.9.2016], https://www.oecd.org/surveys/Czech-Republic-Overview-2014.pdf, p.23

[117] KALÍŠKOVÁ K., MUNICH D., PERTOLD F., Veřejná podpora míst ve školkách se vyplatí: analýza výnosů a nákladů, 2016, CERGE-EI, [online], [1.11.2016], idea.cerge-ei.cz/files/Kaliskova_Munich_Pertold_2016_05_12.pdf

discounts. Additionally, this would lead in the long term to higher payments of pensions and insurance benefits resulting from the greater family income over the time. [118]

3.5.2 Paying off the costs

The key point is to analyse the macroeconomic impact as a whole with increased maternal rate employment. In other words, it is needed to review through cost-benefit investigation, whether budget revenues outweigh costs and hence how effective would be the reduction of parental leave length. The analysis carried out by CERGE-EI institute demonstrated '*that the net gain to the public budget from every additional place in pre-school is on average 10,000 crowns per year.'* In this study, the annual costs of public budgets to one new spot in the kindergarten were compared to an average annual income budget. According to the study, '*public financial support for pre-schools would not result in a loss even under very conservative estimates.'* On the contrary, the placement of one additional child in infant institution would have a net positive impact on the public revenues from 10 404 CZK – 36 443 depending on the premises and the calculation. In addition, the study points out that every extra year that the female does not work, her level of its future earnings is decreased by about 1%. In other words, by one additional place in the crèches, the future mother's annual earning would increase by one percent. [119]

Additional employment of mothers with small children would create extra job positions for nurses, but as well it would lead to an increase in net household income (assuming that family incomes are higher than received social benefits). Consequently, the families could afford to increase consumption and household savings. Presuming that the saving equals to investment, the economy would benefit as a whole. Simultaneously, through indirect taxes, such as Value Added Tax (VAT) and consumption taxes higher domestic

[118] KALÍŠKOVÁ K., MUNICH D., PERTOLD F., Veřejná podpora míst ve školkách se vyplatí: analýza výnosů a nákladů, 2016, CERGE-EI, [online], [1.11.2016], idea.cerge-ei.cz/files/Kaliskova_Munich_Pertold_2016_05_12.pdf

[119] KALÍŠKOVÁ K., MUNICH D., PERTOLD F., Veřejná podpora míst ve školkách se vyplatí: analýza výnosů a nákladů, 2016, CERGE-EI, [online], [1.11.2016], idea.cerge-ei.cz/files/Kaliskova_Munich_Pertold_2016_05_12.pdf

consumption would have a positive effect on national GDP. Hence, greater offer of infant care institutions would lead to greater maternal employment, which would result in macroeconomic positive benefits; the social transfers would decrease and the economy would grow.

Similarly, the Bolsa Familia program is examined in cost-benefit perspective. The beneficiaries of the subsidies are only the families with children who live under/on the poverty line. Hence, the program is aimed mainly to fight against the poverty and not to have a decreasing or increasing demographic impact. As shown in the second chapter, the Bolsa Familia program occupied 2.23% of public expenditure and 0.49% of national GDP in 2014. These amounts are not negligible, so is this policy cost worthy in the long term?

According to the survey by IPEA in 2011, *'56% of costs of the government's social programmes returned to public coffers through the levying of taxes'. '*The IPEA study also states that income redistribution programs are the best multiplier of gross domestic product. In particular, the GDP increases '*by R$1.44, and family income grows by 2.25% for each R$1.00 spent on the programme, after taking into account the entire income multiplication circuit in the economy'*. The study completes that the Bolsa Familia program creates more economic benefits than burden. [120]

The program was not only efficient from the macroeconomic perspective but also combating the poverty. According to IPEA data, Bolsa Familia reduced the poverty by 28% between 2002-2012 and the ratio of Brazilians living in extreme poverty decreased from 8.8% to 3.6% in the same period. [121] As per above mentioned results, the program is meeting its goal. The poverty is reduced with bearable costs within Brazilian budget.

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[120] MOURAO L., JESUS A. M., Bolsa Família Programme: an analysis of Brazilian income transfer program, 2011, [online], [2.11.2016], https://factsreports.revues.org/1314

[121] The Guardian, Bolsa-Família: template for poverty reduction or recipy for dependency? 2013, [online],[3.11.2016],https://www.theguardian.com-global-development-professionals-network/2013/nov/05/bolsa-familia-brazil-cash-transfer-system

At the same time, Bolsa Familia programme does not have negative effect on work incentives and retirement contributions. [122]

Nevertheless, some critics warn that a wide majority of beneficiaries will not be able to get out of this dependence liaison. Nowadays, more families are recipients of Bolsa Familia and the total government amount spent is raising on yearly basis. Therefore, the correct definition of the forfeiting conditions should be well defined.

This program and its utilization, though, might change in the near future. The right wing political party, which has been in power after the impeachment process, does not perceive the income redistribution programs as a first priority. So far, over 1.1 million of benefits were blocked or cancelled, which should save, according to estimations, 2.4 billion of BRL per year. [123]

[122] MEDEIROS M., BRITTO T., SOARES F. V., Targeted Cash Transfer Programmes in Brazil: BPC and the Bolsa Familia, Working paper n.46, 2008, [online], [2.11.2016], www.ipc-undp.org/pub/IPCWorkingPaper46.pdf

[123] GLOBO, SOUZA A., Governo cancela e bloqueia benefícios de Bolsa Família, [online], [17.11.2016], http://oglobo.globo.com/brasil/governo-cancela-bloqueia-11-milhao-de-beneficios-do-bolsa-familia-20425190

Conclusion

The thesis primarily aimed to quantify the macroeconomic burden related to maternity and parental leave in the Czech Republic and maternity and paternity leave in Brazil. The total costs were expressed in terms of percentage of public expenditure and GDP. Given the costs, the macroeconomic impact of these social transfers was argued in context of each country.

The Czech maternity leave allowances resulted in 2014 in 0.40% of public expenditure and 0.17% of GDP. The parental leave allowances created macroeconomic burden of 1.26% of public expenditure and 0.54% of GDP in 2014. Analysing the total macroeconomic burden for years 2005-2014 in terms of GDP, the highest peak was registered in 2009. Since then, the total costs have been declining over the time being aligned with lower fertility. This percentage of GDP is quite relevant, though, it does not represent a burning issue for public spending. In comparison, greatly discussed pension system occupies 9 % of the Czech GDP.

Equally, the thesis estimated the total macroeconomic costs related to maternity and paternity leave in Brazil. In 2014, the costs related to these policies represented only 0.04% of Brazilian public expenditure resulting in 0.009% of GDP. This value has been steadily increasing over the analysed years 2005-2014 and the total value of allowances almost doubled throughout these years. Thought, in macroeconomic perspective, the maternity leave allowances in Brazil represent nearly a negligible value. The Brazilian government also provides a social transfer program called Bolsa Familia, which is oriented to families with children living under/on poverty line. Although, the aim of this program is to fight the poverty the thesis also estimated its spending due to the fact that the entitlement is conditioned by the presence of children. This program, in 2014, consumed 2.23% of public expenditure and 0.49% of Brazilian GDP. The total results are not so distinct in both countries, however, the thesis abstained of direct comparison due to different social programs in places in both countries.

Based on the costs, the thesis aimed to stress out whether Czech model of parental leave (and maternity) could be applied in Brazil and vice-versa. Given the lack of parental leave in Brazil, the simulation estimated the potential costs of parental leave application.

As per the result of simulation, the total macroeconomic burden related to the Czech model implementation into Brazil would cost nearly 18% of public expenditure and 3.6% of GDP in terms of 2005 data and 8.42% of public expenditure and 1.86% of GDP for 2014. Hence, the implementation of Czech system would not be macro-economically sustainable in Brazil. To compare, the costs related to pension system payments represented 7.4% of Brazilian GDP in 2015. In addition, I believe that the Czech system of parental leave would not be approved since the Brazilians are very sensible to increase of public expenditure and the new right wing does not perceive social transfers as a priority. Apart from that, the whole macroeconomic situation would worsen as a whole.

The simulation was also calculated for the opposite case of Brazilian model implementation into Czech data. The results showed that by applying the Brazilian system of maternity and paternity leave, the Czech Republic would decrease its costs to 1.03% of public expenditure and 0.44% of GDP. This simulation revealed what would be the costs in case of parental leave removal but substituted by 20 days of paternity leave. In this simulation, the Bolsa Familia program was not included, due to the fact that not all the parents can enjoy its allowances since this program aims to fight the poverty. To sum up, the result illustrated the increase of macroeconomic costs if Czech structure of maternity and parental leave would be applied in Brazil. On the other hand, the result showed the cost decrease if Brazilian model of maternity and paternity leave would be employed in the Czech Republic.

During the study of the topic, it was found out, that the current structure of family policies has several negative impacts in other fields. These negatives aspects are related mainly to parental leave and its extended periods. Given the absence of parental leave in Brazil, the issues are mostly related to the Czech Republic. The Czech Republic compared to other European countries registers one of the lowest return to work rates. Such an issue could be solved by greater implementation of child care institution or other alternatives of child care. Placement of additional child in infant institution would result in net positive impact on the public revenues. Additionally, the family income would arise accompanied by higher household consumption. The public revenues in macroeconomic perspective would increase accordingly through direct and indirect

taxes and the value of social transfers would decrease accordingly. Concluding from the macroeconomic perspective, the extended periods of parental leave are inefficient and on the opposite, the government should facilitate the female return to the labour market.

The macroeconomic field is highly interconnected with the labour market. From the labour perspective, by being absent from work for several years, the Czech woman is 'penalized' by her market value decrease in labour market. Every extra year that the female does not work, her level of future earnings is decreased by about 1%. The current structure of the Czech parental leave hence creates the adverse incentives. If parents want to withdraw all the transfers, they are eligible for, the fastest way is limited to two years and seven months. If then the couple decides for the second child, the female would remain located out of the labour market for more than five years. If a mother was previously unemployed, she can only opt for four years of parental leave. With two children, withdrawing all the benefits, the mother will remain out of the labour market for eight years, which again complicates her return to the labour market. Due to the fact that the level of parental allowance is fixed, it might discourage higher income mothers from having more children due to greater opportunity costs. Therefore, the current structure of parental leave allowances incentives lower income mothers to have more children to substitute the income.

The labour market is very closely related to the gender gap perspective. Considering very low male involvement in child care process, the females become highly disadvantaged. In the Czech Republic, nearly 98% of parents who opt to go on parental leave are mothers. In Brazil, despite paternity leave in place, the situation is not much better due to the fact that paternity leave in majority of cases lasts few days. This imbalance hence provokes the income inequalities related to the gender gap. According to the theory of the Market for Lemons, the asymmetry of information creates the adverse selection. The employers tend to assume that every female will end up staying off work for maternity leave for a longer period, which results in decrease of her competitiveness in labour market compared to man. To solve this issue, the same rights but especially obligations should be granted to both sexes. In particular, forcing men to abstain from job for the same period as women do by sharing the childcare and parental leave would diminish the inequalities set between the gender at the labour market.

To conclude, the maternity and parental leave policies represent an important role within a society. The aim serves to protect the woman on the labour market, compensate her for missed income and provide her the best conditions for the child care. Though, these policies have also a broad impact towards other areas such as labour market, demography, gender gap or public expenditure via social transfers. Hence, the cost-benefit analysis should always play a key role and the ongoing structure should be periodically reviewed in order to balances the costs and benefits while avoiding any potential adverse incentives. In my personal opinion, both countries should investigate more and ensure that the public expenditure is justifiable. Besides that, especially in the case of the Czech Republic, the status quo should not be taken for granted and on the opposite, should be regularly scrutinized.

Attachment I

Calculation of Maternity Allowance in the Czech Republic

Calculation of financial aid during maternity leave	1. Example	2. Example
The average gross wage	26 140 CZK	54 500 CZK
Not reduced daily assessment base (Salary x 12 months/days)	859,40 CZK	1791,78 CZK
1. Reduction level (100 % until 901 CZK)	859,40 CZK	901 CZK
2. Reduction level (60% from 901 CZK until 1351 CZK)	0 CZK	270 CZK
3. Reduction level (30% from 1351 CZK until 2701 CZK)	0 CZK	132,23 CZK
Reduced daily assessment base (sum of previous 3 lines)	860 CZK	1303 CZK
Daily financial help (70% of calculated assessment base)	602 CZK	912 CZK
Monthly financial help during maternity leave (30 days)	18 060 CZK	27 368 CZK

Source: Own calculation based on Reduction levels dated 1.1.2016, Ministry of Labour and Social Affairs[124]

[124] MPSV, Nemocenské pojištění v roce 2016, [online], [5.12.2016], http://www.mpsv.cz/cs/7

Attachment II

Allowance in maternity leave as % burden of Sickness Insurance

Year	% burden of Sickness Insurance
2005	12%
2006	12%
2007	13%
2008	13%
2009	30%
2010	31%
2011	30%
2012	29%
2013	29%
2014	28%

Source: Own calculation based on MPSV data[125]

[125] MPSV, Nemocenské pojištění, [online], [5. 12. 2016], http://www.mpsv.cz/cs/7769

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