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QUANTIFICATION OF THE IMPACT OF SUBSIDIES FROM THE "FAMILY" SUBSIDY PROGRAM ON THE LABOR MARKET AND THE FAMILY

Abstract:

The aim of the article is, with the help of econometric analysis, to verify and further expand knowledge about the existence and nature of the influence of selected indicators of subsidies on the labor market and the family in the entire national economy of the Czech Republic from various points of view. The actual empirical results were compared with the opinions of the professional public, with the conclusions of international and domestic research and strategic documents in the area of influence of selected indicators of subsidies. The analysis primarily shows a significant preponderance of the statistically significant positive impact of wage subsidies on selected indicators of the labor market and the family over the negative impact. This conclusion is also stated by, for example, Crichton and Mazé (2013), who confirmed the effects of wage subsidies on the amount of time spent at work and that firms increase their total employment. The same tendency was found for the sub-indicators the number of hours in the agreement on the performance of work (favorable impact on the indicator average weekly number of hours usually worked for full-time work for helping family members of women) and for the indicator provided subsidy for gross wage resources in total (favorable impact on the indicator average weekly number of hours usually worked for full-time work for helping male family members).

Keywords:

Subsidy, amount of employment in the employment contract, number of hours in the agreement on the performance of work and the subsidy provided for gross wages in total, NAIRU, wages, family

JEL Classification: E24, E32, E37

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1. Introduction

The aim of the presented analysis is to use econometric tools to verify knowledge about the impact of subsidies from the "Family" subsidy program on the labor market and the family. This is an analysis of the part of the subsidies that is used to pay the labor costs during the implementation of the project, i.e. the remuneration for the work of employees in an employment relationship or working on the basis of agreements on work carried out outside the employment relationship.

Carrigan and Coglianese (1971) state that in the 1960s and early 1970s, economists viewed regulation primarily as a mechanism for dealing with market failures, not as a weapon used by firms to create barriers to effective competition. Stigler's analysis led economists and regulatory scholars to the possibility that regulation might play exactly the opposite role than intended. This warning, like Stigler's overall focus on the role of private interests, remains equally relevant to today's vastly changed regulatory environment.

The desk research analysis of the selected literature shows, on the one hand, the adverse impact of subsidies on the economy, as evidenced by all economics textbooks. The material Strategy for Social Inclusion 2014-2020 (MoLSA, 2014b) in turn draws attention to the global trend of "detachment from the state". The main role of the state is the provision and distribution of public goods. In areas that the public sector (the state and local government) cannot secure, the private (business) and civil sectors play a vital role, i.e. it represents the area of human activity located between the family, the market and the state. It is completed by private associations of citizens - associations, churches or foundations. These are private property associations that provide funds for public benefit activities. Searching for sources other than state support and state subsidies, i.e. multi-source financing, increases the entity's financial sustainability.

Pšenčík, Kouřilová and Sedláček (2018) understand subsidies as public monetary and other contributions to equalize the financial balance of a company, body or organization. Subsidies from different providers also have different forms. From a purely financial point of view, subsidies strengthen the economy. Euroscope (2018) in the case of the European Structural and Investment Funds is an instrument that in the European Union seeks to reduce economic and social differences between member countries and between individual regions. Thanks to these funds, GDP is roughly 3 percent higher than it would be without the funds. Most European money went to infrastructure. These investments also had the absolute greatest benefit. The good condition of the labor market is also rooted in European funds. In addition, the main benefit of investing in people is fully manifested in the long term: retraining processes or the acquisition of new knowledge and skills take a certain amount of time, and the positive effect of these investments will only be felt after several years.

The subsidy program "Family" (MoLSA, 2019) supports services for families that are preventive and supportive in nature. The services are intended to strengthen parental competences, improve family relationships, support families in caring for children, raising them and reconciling work and family, and assist in the prevention and resolution of crisis situations in the family, including domestic violence, child abuse and abuse. The aim is to provide comprehensive assistance to the family as a whole (i.e. the extended family including children and grandparents) and to strengthen the importance of the family for society. Subsidy from the state budget is provided for the implementation of projects to non-state non-profit organizations that contribute to the fulfillment of state policy goals arising primarily from the main areas of state subsidy policy approved by the government for the relevant budget year. Within this Program, 2 grant areas will be supported, namely I. Preventive activities to support family, partnership and parenting and II. Support for families in the area of social and legal protection of children.

The following analysis can be divided into three parts. Part 2 presents an overview of the opinions of the professional public, international and domestic research. Section 3

characterizes the data sources and research method. In part 4, empirical testing of the impact of subsidies for the payment of labor costs during the implementation of the project on the labor market and the family is carried out using a detailed breakdown of individual indicators. The last part summarizes the conclusions from the analysis carried out at the level of the entire national economy.

2. Overview of the opinions of the professional public, domestic and international documents in the area of the influence of selected indicators of subsidies on the labor market and the family

2.1 Overview of the opinions of the domestic professional public on the issue of subsidiem

Representatives of the adverse impact of subsidies on the economy include, for example, Kohout (2016), according to whom subsidies damage every economy. At first glance, European subsidies contributed to record economic growth (a new factory led to the closure of another). Areas in which subsidies make sense include education, science, research, cultural monuments, i.e. things that are essentially non-profit. Certain investments in the transport network are to be handled by the state budget, or by some state agency that issues bonds for this purpose. Business support should consist in creating good conditions, appropriate institutions, comprehensible laws and reasonable taxes. The volume of money should be gradually minimized because stopping the flow of money from Brussels will have a big impact on growth and the economy. The economic level of regions or countries cannot be balanced by sending money. The only effect is the transfer of qualified workers to the state administration, because it offers more and better paid jobs.

Zlámalová (2010) also states that the economy is on shaky foundations when growth is based on subsidies. This is not sustainable in the long term. At the same time, it is not only about corruption in public contracts, but also about who will support the projects built with European funds after these subsidies stop.

Dušek (2012) admits that subsidies were apparently stolen in many regions, but these had a positive impact on the growth of regions in the amount of 1.6 p.p. The basis is to decide whether the European regions that received large subsidies from the European structural funds grew faster as a result of the subsidies.

A representative of the favorable influence of subsidies is, for example, Niedermeierová (2019), when she considers the introduction of a limit on European subsidies for farmers as a source of negative employment development in the Czech countryside. Capping European subsidies for farmers would have the worst impact on medium-sized businesses. In the case of capping, expensive animal production, which requires human labor, would have to be reduced.

businessinfo.cz (2013) even states that the rate of youth unemployment is so serious that it is necessary to consider even unimaginable steps. One of them could be subsidies for companies that would create new jobs for young people. The European Council also addressed the high rate of youth unemployment at the June summit. EU leaders have agreed to allocate €8 billion under the next multiannual financial framework to the Youth Employment Initiative, which would help people under the age of 25 get further education, a new job or a traineeship within four months of leaving education or losing their job.

2.2 Conclusions of domestic and foreign research on the issue of the influence of subsidies on indicators of the real economy

In domestic research, Hladká, Hyanek and Spalek (2017) confirms that non-profit organizations are increasingly oriented towards the state. This is due to their heavy dependence on financial support from the public sector and close ties to a wide range of

government policies. The results show a crowding-out effect of public sources, but not of other types of funding sources, such as income from the organization's own activities and business income. Low level of public of subsidies has the potential to stimulate private donors, while a high level may have the opposite effect.

Hájek et al. (2019) state that the growing level of regional disparities in the countries of Central and Eastern Europe increases interest in their reduction using regional policy instruments. Correlation and regression analysis shows the unclear contribution of EU structural funds to the reduction of territorial differences at the micro-regional level. A higher allocation of structural funds is hindered by the lower absorptive capacity of actors in lagging microregions. Strengthening the influence of the allocation of these funds in disadvantaged micro-regions will allow increasing the importance of local action groups depending on territorial differences (eg the difference between dynamically developing suburban areas and disadvantaged peripheral countryside). Attention should also be paid to strengthening the absorptive capacity of actors in disadvantaged micro-regions (e.g. increasing competencies in the field of project management, sharing services and cooperation and simplifying administrative procedures). Sedláček (2015) demonstrated using the Benchmark method that companies receiving the subsidy were more competitive than the industry as such before receiving it. However, during the period of implementation of the subsidized investment, the companies lost money and became average companies in terms of the monitored indicators of competitiveness. The conclusion was also confirmed by the Per se method, according to which the return on assets indicator for subsidized enterprises worsened in the four years after drawing the subsidy. Furthermore, there is a weak direct link between the relative size of the subsidy and the size of the ROA indicator of the subsidized enterprises. Staněk, Kvasnicka and Krcal (2018) confirmed that subsidies do not completely displace private sources of research expenditure. There is considerable diversity in the impact of subsidies on business innovation. R&D subsidies support real innovation in the Czech Republic and Germany, but only increase imitation in Bulgaria and Portugal. The Czech Republic therefore belongs to a wider group of developed countries where subsidies for research and development help to create highly innovative products.

Using a panel regression analysis, the Office of the Government of the Czech Republic (2017) found that a possible reduction in annual appropriations from ESI funds per capita by 10% would lead to a decrease in the growth of the annual regional real GDP per capita by an average of 0.15 pp. In addition to the effect of the funds, the regression analysis points out to the positive significant influence of activities in the field of innovation and research. The positive impact of infrastructure development on the regional growth of the Czech Republic is also recorded. Špaček (2013) states that the structural funds of the European Union have a positive impact on the development of personnel and financial capacities of Czech non-profit organizations. From the partial analyzes carried out, the impact estimates for total revenues, total personnel costs and total indebtedness are positive. The negative estimate of the impact comes out only for the indicator of the economic result before taxation. Potluka et al. (2013) indicate that the impact of subsidies on employee education is positive and statistically significant and ranges from 5 to 10 p.p. The average decrease in the number of full-time employees ranged between 5 and 15% for non-supported firms. The average change in employment for supported companies is around zero.

In the framework of foreign research, Einarsson and Sigurdsson (2013) confirm the importance of effective institutions on the labor market in protecting short-term unemployment during the transition to long-term unemployment. The presence of hysteresis also has important implications for macroeconomic policy. From the point of view of monetary policy, monetary policy reacts to the growth of inflation by reducing overall demand, which can mean not only a temporary increase in unemployment but rather a permanent and even long-term increase in unemployment. Schünemann, Lechner and Wunsch (2013) examine the impact of employer subsidies targeting long-term unemployed workers in Germany. The authors find very large effects on employment. Tadashi, Yukiko and Kazuhiro (2016) show that

governments engaged in subsidy competition provide positive outcomes of subsidies to manufacturing firms. The authors also show that subsidy competition is beneficial when there are large labor market frictions. In the case without a subsidy competition, the number of applications from production companies is inefficiently small. Konig and Domonkos (2015) estimate the effective amount of state subsidies for job creation. Such a measure on the labor market could help alleviate the adverse situation on the labor market within a reasonable time frame and also reduce the pressure on public finances to some extent. The measures will require tight coordination that will be resistant to abuse.

Crichton and Mazé (2013) confirmed the effects of wage subsidies on the amount of time spent on the job and the total employment income of job seekers who started a subsidized job. About half of the participants are employed and one-third receive benefits 12 months after starting subsidized work. Employment of non-subsidized workers is estimated to increase when subsidized workers are employed. Most SMEs hire only one subsidized worker at a time. On average, the number of subsidized workers hired in these "treated" firms is 1.09. For firms between 100 and 250 in size, they infer that hiring 1.28 subsidized workers induces firms to increase employment by more than 7 workers. Caliendo and Steiner (2006) report that program participants are much more likely to be self-employed or in wage employment than a control group. Additionally, participants earn significantly more than comparable participants 28 months after becoming self-employed. Monetary efficiency from the point of view of the federal state Labor Agency is positive.

Atzeni and Carboni (2006) found that the overall effect of subsidies on investment is positive, meaning that firms would invest less if they did not receive public support. Subsidies influence investments by increasing internal and external financial resources and increasing the financial capacity of enterprises. These effects are strongly dependent on firm size. Small companies use grants as much as possible, while for medium and large companies subsidies seem to be only a substitute for more expensive sources of finance. The authors found that the decision to accept ICT subsidies is positively correlated with age, workplace organization, R&D and subsidies. Dorward and Morrison (2013) report that agricultural subsidies have a large impact on food security and poverty reduction for billions people in Asia and through their impact on food supplies and prices around the world. In this situation, the differentiated and new use of food production subsidies in both developed and developing countries will be essential to support sustainable food security and poverty reduction.

Thoresen (1995), using a simulation using a sample of mothers of preschoolers since 1990, predicts a labor force reduction of 3%. This result is primarily due to the very low valuation of childcare for the mothers concerned. Baker and Milligan (2008) drew attention to the deterioration of children's results since the introduction of the program. The families studied also became more tense with the introduction of the program. This manifests in increased child aggression and anxiety, hostility, less consistent adult parenting, and poorer adult mental health and relationship satisfaction. In addition, they examined why families would use policies that lead to poorer child outcomes, poorer parenting, and poorer parenting outcomes. It is possible that other unmeasured benefits of higher family incomes offset these costs.

3. Description of used data sources and methods of analysis

The indicators of the Ministry of Labor and Social Affairs and the Czech Statistical Office became the explanatory variables when examining the influence of a selected part of the subsidies on the indicators of the labor and family market, its character and intensity in the entire national economy. In the case of the Ministry of Labor and Social Affairs, this is an indicator of the share of unemployed persons[1]. The Czech Statistical Office represents the following indicators: the average registered number of employees[2], the average monthly

[1] http://portal.mpsv.cz/sz/stat/nz/casove_rady

[2] https://www.czso.cz/csu/czso/evidencni-pocet-zamestnancu-a-jejich-mzdy-4-ctvrtleti-2018-3lj28y9f6u

wage in CZK[3], income and living conditions of households[4] and the indicator of employment and unemployment according to the results of the Labor force sample survey[5]. These indicators are analyzed in detail, with two exceptions (average registered number of employees and average monthly wage in CZK).

From the adopted unemployment rates, i.e. from the indicator of the share of unemployed persons, the values of the non-accelerating inflation rate (hereinafter NAIRU)[6] were estimated with the help of the HP filter[7]. We use the NAIRU indicator for analysis, as this concept measures the long-term potential of the labor market and thus provides an insight into structural unemployment.

The source of the main explanatory variables when examining the influence of a selected part of subsidies from the Family Subsidy Program (MoLSA, 2019) on indicators of the labor and family market, its character and intensity in the entire national economy, became the Subsidy applications submitted within the OKservices - Family[8] internet application. Specifically, the following indicators were concerned: the amount of time in the employment contract, the number of hours in the agreement on the performance of the work and the subsidy provided for the total gross wage resources.

The data cover the years 2017 and 2018. From the original data of the numerical variables, year-on-year changes in % or in p.b. were calculated.

Linear regression was used to assess the intensity and nature of the influence of selected indicators of subsidies on the labor market and the family. Cleaned R^2 is applied to select the most appropriate model to approximate the analyzed data. The Jarque Ber test (EViews, 2013) is used to test the normality of the residuals. The Breusch-Godfrey test is applied to test autocorrelation of residuals (EViews, 2013). The Wald test (EViews, 2013) is used to test for heteroskedasticity of residuals. The Variable Inflation Factor (EViews, 2013) is used in the analysis to measure the carrying capacity of multicollinearity. The failure of normality tests of residuals due to fluctuations in the development of some segments of the explained variable and interannual changes calculated from them in the case of a large number of observations allows us to assume the validity of the central limit theorem, which states that t tests are asymptotically valid.

The influence of selected subsidy indicators on the labor market and the family is examined using the Method of Least Squares. The determined value of the regression coefficient then indicates the intensity of the influence of the selected indicators on the labor market and the family and the sign of its character. In the case of a positive sign, the text speaks of a positive influence, and in the case of a negative sign, of a negative influence. If the explanatory variable is not statistically significant in the model, we speak of failure to demonstrate its influence on the labor market and the family.

A positive value of the regression coefficient means that with the growth of the selected indicator of subsidies, the indicator of the labor market and family grows. A negative value of the regression coefficient means that with the growth of the selected subsidy indicator, the labor market and family indicator decreases. The regression coefficients in the interval from 0.0001 to 0.408 in our analysis indicate a very weak sensitivity of the labor market and family

[3] https://www.czso.cz/csu/czso/evidencni-pocet-zamestnancu-a-jejich-mzdy-4-ctvrtleti-2018-3lj28y9f6u

[4] https://www.czso.cz/csu/czso/prijmy-a-zivotni-podminky-domacnosti-kf03f95ff5

[5] https://www.czso.cz/csu/czso/prijmy-a-zivotni-podminky-domacnosti-kf03f95ff5

[6] According to Tobin (1997), Non-Accelerating inflation rate of unemployment is the rate of unemployment at which the effects of rising inflation from markets with excess demand balance the effects of falling inflation from markets with excess supply.

[7] Fabiani, S.; Mestre, R. 2000. base trend and cycle identification on filtering methods such as the Hodrick-Prescott filter. According to the authors, univariate tools are easy to implement.

[8] Ministry of Labor and Social Affairs https://isocrod.mpsv.cz/rodvvaclient/

indicators to the development of the selected subsidy indicator, however, it is statistically significant and robust.

4. Overview of results from empirical testing of the influence of subsidy indicators on the labor market and the family in the entire national economy of the Czech Republic

In this part, the econometric method is applied to analyze the nature and intensity of the influence of subsidy indicators on the labor market and the family from different points of view and in different degrees of detailed breakdown of the indicators used. The obtained regression coefficient values are divided into three groups (A, B, C). The first group (A) will summarize all proven positive and negative values of regression coefficients with a favorable impact on the development of the labor market and the family. The second group (B) will summarize all proven positive and negative values of regression coefficients with an adverse impact on labor market and family indicators. In the third group (C), no statistically significant influence of the selected area of subsidies on the labor market and the family was confirmed. The results are presented in the following regression analysis. The used labor market and family indicators are viewed in the structure presented in part 3 of this article.

This chapter presents an overview of the summary results from a thorough analysis of the influence of selected subsidy indicators on the labor market and the family. Examples of the complete output of regression parameters and statistics from the econometric software are then included in the tables in the appendix of the entire article (see Tab. 1 and 2). The accompanying text draws attention only to the strongest positive impact of subsidies on labor market and family indicators. In accordance with part 3 of the article, we assess the intensity of the influence of changes in selected subsidy indicators on the labor market and the family as generally very weak.

As part of the analysis of the impact of selected subsidy indicators on the labor market and the family, this area was first tested from the point of view of the indicator of the size of the employment contract.

A. First of all, the analysis carried out generally shows a very weak, statistically significant positive and negative sensitivity of the labor market and family indicators to the size of the employment contract of subsidies. The highest intensity of impact was demonstrated for the indicator the household could not afford to pay an unexpected expense of CZK 10,700, when the number of such households decreased by 0.015 p.p. with a year-on-year increase in the subsidy of 1%. The increase in subsidies also had a positive impact on the decrease in employed men with primary education (by 0.02%). The year-on-year growth of this subsidy by 1% also increased the employment of men aged 30 to 34 by 0.012% in 2018 compared to 2017. Further analysis mainly draws attention to the year-on-year increase in the indicator of the average weekly number of hours usually worked for full-time work by 0.081% for helping family members of women, with a year-on-year increase of the above subsidy by 1%. The number of employed men aged 65 and over also increased year-on-year above average (by 0.030%). According to the regression coefficient, the average favorable impact of the year-on-year increase in subsidies for all indicators of the labor market and family had a value of + 0.008, or -0.005.

B. On the contrary, this analysis shows the highest negative impact of this subsidy on the indicator household could not afford to eat meat every day, which increased by 0.030 p.p. with a 1% year-on-year increase in the subsidy. In the group of results with a positive value of the regression coefficient, we also include the indicator average weekly number of hours usually worked for men's shorter working hours (+0.010) and the indicator the household could not afford to heat the apartment sufficiently (+0.007). As part of the negative value of the regression coefficient, an above-average year-on-year decrease in the indicator of employment of women aged 60 to 64 (by 0.015%), the indicator of employment of women aged 25 to 29 (by 0.007%) and the indicator of employment of men with secondary education

without matriculation (by 0.006%). The average adverse impact of the year-on-year increase in subsidies for all indicators of the labor market and family amounted to + 0.006 and -0.005 according to the value of the regression coefficient.

As part of the analysis of the impact of selected indicators of subsidies on the labor market and family, this area was subsequently tested from the point of view of the number of hours in the agreement on the performance of work on the labor market and family.

A. In the case of a 1% year-on-year increase in the number of hours in the work agreement, the related year-on-year increase in the average weekly number of hours usually worked for full-time work for female family members helps by 0.141%. The average number of hours actually worked in the office also increased significantly year-on-year. week for shorter working hours of women (by 0.037%) and the number of employed women aged 60 to 64 (by 0.028%). Furthermore, the increase in subsidies had a positive impact on the decrease in the number of households that find it very difficult to make ends meet and, for households for whom housing costs are a certain burden (both -0.004). According to the regression coefficient, the average favorable impact of the year-on-year increase in subsidies for all indicators of the labor market and family had an intensity of + 0.019, or -0.0002.

B. This analysis, on the contrary, shows the highest adverse impact of this subsidy on the indicator the household coped with income with great difficulty and the indicator housing costs are a certain burden, which, with a year-on-year increase in the subsidy of 1%, increased by 0.005 p.p. As part of the negative value of the regression coefficient, an above-average year-on-year decrease of the employment indicator for men aged 25 to 29 years and the employment indicator of women aged 60 to 64 years (by 0.007%) was detected. The average adverse impact of the year-on-year increase in subsidies for all indicators of the labor market and family amounted to + 0.003 and -0.001, respectively, according to the value of the regression coefficient.

As part of the analysis of the impact of selected indicators of subsidies on the labor market and the family, this area was then tested from the point of view of the indicator of the subsidy provided on gross wage resources in total on the labor market and the family.

A. The analysis proves that the year-on-year growth of the indicator provided by the subsidy for gross wage resources in total by 1% caused the year-on-year growth of the indicator of the average weekly number of hours usually worked for full-time work by 0.358% for helping male family members. The favorable impact of the increase in subsidies to cover wage costs was also reflected in a decrease in the number of employed men with primary education (-0.006). According to the regression coefficient, the average favorable impact of the year-on-year increase in subsidies for all indicators of the labor market and family reached the value of + 0.027, respectively -0.001.

B. This analysis, on the contrary, shows the highest adverse impact of this subsidy on the NAIRU indicator of women and the indicator of the share of unemployed women, which increased by 0.003 p.p. with a 1% year-on-year increase in the subsidy. As part of the negative value of the regression coefficient, an above-average year-on-year decrease in the indicator of the average weekly number of hours usually worked per full-time working time of helping male family members was detected (by 0.096%). The average adverse impact of the year-on-year increase in subsidies for all indicators of the labor market and family amounted to + 0.001 and -0.007, according to the value of the regression coefficient.

Table 1

The frequency of the unproven influence of selected subsidy indicators on the labor market and the family in the entire national economy

Explanatory variables	Frequency of unproven effect
The size of the term in the employment contract	73
The number of hours in the agreement to perform the work	253
Subsidy provided for gross wage resources in total	37
In total	**363**

Source: Own calculation based on data from OKservices - Family, Ministry of Labor and Social Affairs, Czech Statistical Office.

C. Unproven regression, i.e. a statistically insignificant favorable and unfavorable influence across the national economy of the Czech Republic, was detected mainly when mapping the impact of the year-on-year change in the indicator number of hours in the agreement on the performance of work (253 cases), followed by the indicator of the amount of time in the employment contract (73 cases) and later, the indicator of the subsidy provided for total gross wage resources (37 cases).

Conclusions from the analysis

The initial research on the issue of subsidies from the Family Subsidy Program tried to confirm the effect (its nature and intensity) of changes in the part of the subsidies, which are used to cover labor costs during the implementation of the project, on the labor market and the family, using regression analysis. In fact, this is only about remuneration for the work of employees in an employment relationship or active on the basis of agreements on work carried out outside the employment relationship. Research on the impact of subsidies provided on the implementation of individual project activities will be carried out in an analysis that will follow the thorough rooting of the Applications of non-governmental non-profit organizations in the area of family support for a subsidy from the state budget and the Billing of the subsidy from the state budget for the project of a non-governmental non-profit organization in the area of family support to the supported projects. The appropriateness of the application of the analysis of the character/intensity of the mutual relationship and the indication of the causal relationship to the extended set of labor market and family indicators was confirmed by a number of new significant practical implications revealed by the regression analysis.

The main findings from the analysis at the level of the entire national economy can be divided into three groups.

Table 2

The average favorable and unfavorable influence of selected subsidy indicators on the labor market and the family in the entire national economy incl. frequencies of unproven influence

Explanatory variables	Beneficial impact		Adverse impact		Frequency of unproven effect
	A positive value of the regression coefficient	A negative value of the regression coefficient	A positive value of the regression coefficient	A negative value of the regression coefficient	
The size of the term in the employment contract	0,008	-0,0053	0,006	-0,0050	73
The number of hours in the agreement to perform the work	0,019	-0,0002	0,003	-0,001	253
Subsidy provided for gross wage resources in total	0,027	-0,001	0,001	-0,007	37
In total	**0,018**	**-0,002**	**0,003**	**-0,004**	**363**

Source: Own calculation based on data from OKservices - Family, Ministry of Labor and Social Affairs, Czech Statistical Office.

Table 2 first shows a significant preponderance of the statistically significant positive impact of subsidies on wage costs on selected indicators of the labor market and the family over the negative impact. The authors Crichton and Mazé (2013) came to the same conclusion, for example, when they confirmed the effects of wage subsidies on the amount of time spent at work and the total employment income of job seekers who started a subsidized job. They further find that firms that hire subsidized workers increase their total employment relative to a sample of otherwise similar firms when they hire subsidized workers. While the average positive regression coefficient, which expresses a favorable impact, is higher by 0.015 than the positive regression coefficient, which indicates an unfavorable impact. For the average negative regression coefficient, only a very slight preponderance of the negative influence over the positive impact was found (by 0.002). The same tendency was found for the sub-indicators number of hours in the agreement on the performance of work and the indicator provided subsidy for gross wage resources in total. For the indicator of the length of employment in the employment contract, in addition to the predominance of a positive favorable influence over a negative favorable influence (by 0.002), a predominance of a negative favorable influence over a negative unfavorable influence (by 0.0003) was also found. A statistically insignificant favorable and unfavorable influence was found across the national economy of the Czech Republic in 363 cases. The statistically insignificant impact in the studied literature was mapped only by the Office of the Government of the Czech Republic (2017) when analyzing the impact of ESI funds. According to regression models, the quality of human capital brings a positive (however statistically insignificant) influence on the economic development of the regions of the Czech Republic. This may be a consequence of the choice of a proxy variable that may not sufficiently capture the differences in individual regions. The largest number was mapped during the year-on-year change in the indicator of the number of hours in the agreement on the performance of work (253 cases). This was followed by the indicator of the amount of employment in the employment contract (73 cases) and the indicator of the subsidy provided for total gross wage resources (37 cases).

Other partial conclusions from the analysis of the average favorable and unfavorable influence of selected indicators of subsidies on the labor market and the family in the entire national economy include:

1. Localization of the favorable positive and negative influence of selected subsidy indicators on labor market and family indicators in the entire national economy

1.1 In the case of a year-on-year increase of 1% in the indicator of the amount of employment in the employment contract, the analysis mainly drew attention to the year-on-year increase in the indicator of the average weekly number of hours usually worked for full-time work for helping family members of women (by 0.081%). Caliendo and Steiner (2006) state in this context that subsidized start-ups can function as a bridge to regular employment. For the indicator the household could not afford to pay an unexpected expense of CZK 10,700, the subsidy reduced their number (by 0.015 p.p.). Crichton and Mazé (2013) also confirmed the favorable impact of wage subsidies on the total employment income of job seekers who started a subsidized job.

1.2 In the case of year-on-year growth in the indicator of the number of hours in the agreement on the performance of work, there was a related increase in the indicator of the average weekly number of hours usually worked for full-time work for helping family members of women (by 0.141%). This conclusion is supported, for example, by Crichton and Mazé (2013) when they found that people starting subsidized employment are much more likely to be employed and less likely to receive benefits 12 months later than those who did not start subsidized work. Furthermore, the increase in subsidies had a positive impact on the decrease in the number of households that find it very difficult to make ends meet and, for households for whom housing costs are a certain burden (both -0.004). This finding can be supported, among other things, by the conclusion of Niedermeierová (2019), according to which,

thanks to subsidies, farm enterprises are able to maintain at least a certain standard of wages. Crichton and Mazé (2013) add that, on average, participants spend 6.1 months more in employment, 5.0 fewer months on support, and earn $20,100 more over the next 3 years than those who did not start subsidized employment .

1.3 In the case of year-on-year growth in the indicator provided subsidy for gross wage resources, the increase in the indicator average weekly number of hours usually worked for full-time work for helping male family members was mainly caused by the increase (by 0.358%). Crichton and Mazé (2013) confirm that businesses with an average employment of 2 or fewer employees per subsidized job month hire on average 1.04 more employees, but total employment increases by only 0.96. The favorable impact of the increase in subsidies to cover wage costs was also reflected in a decrease in the number of employed men with primary education (-0.006). Euroskop (2018), for example, proved that the European Structural and Investment Funds are the most effective investment in human resources associated with education. Potluka et al. (2013) further publishes the results of estimates according to which the impact of subsidies on employee education is positive and statistically significant and ranges from 5 to 10 p.p.

2. Localization of the adverse positive and negative influence of selected subsidy indicators on labor market and family indicators in the entire national economy

2.1 In the case of a year-on-year increase in the indicator, the amount of employment in the employment contract, on the other hand, has the highest negative impact on the indicator: the household could not afford to eat meat every day (+0.030 p.p.). Also, Tadashi, Yukiko and Kazuhiro (2016) show that subsidy externalities reduce welfare in another country. Manufacturing markets are segmented, so an increase in the number of firms in a country will reduce welfare in another country. A decline in the number of firms reduces the number of workers working in manufacturing industries, which reduces welfare. As part of the negative value of the regression coefficient, an above-average year-on-year decrease in the indicator of employment of women aged 60 to 64 was detected (by 0.015%). businessinfo.cz (2013) recommends in this context that governments avoid steps such as early retirement.

2.2 In the case of year-on-year growth of the indicator number of hours in the agreement on the execution of work, the highest adverse impact was localized on the indicator household coped with income with great difficulty and the indicator housing costs are a certain burden (+ 0.005 p.p.). Also, Crichton and Mazé (2013) charted that the differences in average monthly earnings between subsidized and control groups are small and generally negligible. A negative value of the regression coefficient and an above-average year-on-year decrease would be found for the indicator of employment of men aged 25 to 29 and the indicator of employment of women aged 60 to 64 (by 0.007%). In this context, Einarsson and Sigurdsson (2013) recommend simplifying the access of unemployed workers to vacancies. Institutions that reduce long-term unemployment—such as employment agencies, employee training programs, and employment subsidies—become very important in a hysteresis environment because they prevent the NAIRU from rising.

2.3 In the case of year-on-year growth of the indicator, the subsidy provided to gross wage resources in total results in the highest adverse impact on the NAIRU indicator of women and the indicator of the share of unemployed women (+0.003 p.p.). E.g. Thoresen (1995) notes the increase in childcare center places in recent years, which has probably reduced the individual distributional effect of the childcare subsidy. However, according to the author, there are reasons to believe that many mothers do not use the service and take care of their children at home, and therefore do not receive the same support as other mothers. An above-average year-on-year decrease was then mapped for the indicator of the average weekly number of hours

usually worked for the full-time working hours of helping male family members (-0.096%). Atzeni and Carboni (2006) explain that the decision to accept ICT subsidies is negatively correlated with the credit constraint and with the regional interest rate.

Attachments

Tab. 1: Overview of regression parameters and statistics - Size of the employment contract

Method: Least Squares				
Number of Model	**Model-1_3_16**	**Model-1_3_19**	**Model-1_3_25**	**Model-1_3_36**
Included observations after adjustments	262	262	262	248
Independent Variable	**The size of the term in the employment contract**			
Dependent Variable	*Coefficient and Prob./ Std. Error*	*Coefficient and Prob./ Std. Error*	*Coefficient and Prob./ Std. Error*	*Coefficient and Prob./ Std. Error*
Const	205,321*** 4,247	-4,884*** 0,787	88,392*** 0,048	527,761*** 15,812
_1V_PS_VEL_UVAZ	**0,001*** **0,001**	**-0,005*** **0,003**	**0,001**** **0,001**	**0,082**** **0,039**
_3Z_DND_ZAPLAT_NEOC_VYD	1,785*** 0,03			
_5Z_PP_SKUT_ODPR_PPD_ZAM_Z	-4,537*** 0,045			
_5Z_PP_SKUT_ODPR_PPD_ZAM_M	2,394*** 0,042			
_3Z_DND_DOST_VYB_BYT	-3,729*** 0,055		-0,588*** 0,033	
_3Z_P12MPH_NAJ_A	4,155*** 0,076			
_3Z_DVP_OBT	0,133*** 0,048			
_3Z_NB_URC_ZAT	-0,509*** 0,033			
_3Z_DVP_VELK_OBT	-0,122*** 0,043			
_3Z_SN_PROBBYDL	2,270*** 0,038			105,702*** 3,547
_3Z_SN_ZNEC_PROSTR		1,001*** 0,143		
_3Z_NB_VELK_ZAT		-1,044*** 0,069		
_3Z_P12MPH_SPLAT_A		-4,900*** 0,411		
_3Z_DND_TYDEN_DOV		0,743*** 0,132		51,888*** 2,122
_3Z_P12MPH_SPLAT_N		2,968*** 0,207		
_3Z_P12MPH_TEPL_A		6,809*** 1,883		
_3Z_P12MPH_TEPL_N		3,249* 1,763		
_4Z_ZAM_Z_30_34		-0,400*** 0,032	-0,034*** 0,004	6,574*** 0,567
_4Z_ZAM_M_40_44			0,113*** 0,021	-33,408*** 1,923
_4Z_ZAM_Z_20_24			-0,049*** 0,003	-6,235*** 0,329
_4Z_ZAM_Z_35_39			-0,232*** 0,009	-8,665*** 0,658
_4Z_ZAM_Z_40_44			0,045*** 0,016	
_3Z_DND_JIST_MASO				81,182*** 2,435
_3Z_DVP_DOC_SNAD				16,544*** 1,635
_4Z_ZAM_M_25_29				-59,321*** 1,737
_4Z_ZAM_M_30_34				-140,296*** 4,213
_4Z_ZAM_M_45_49				4,495*** 1,109
R-squared	0,990	0,760	0,796	0,927
Adjusted R-squared	0,989	0,751	0,790	0,924
F-statistic	2388,319	88,524	141,371	249,533
Prob(F-statistic)	0,000	0,000	0,000	0,000
Durbin-Watson statistic	0,467	0,354	0,372	0,382

Source: Own calculation based on data from OKservices - Family, Ministry of Labor and Social Affairs, Czech Statistical Office.

Tab. 2: Overview of regression parameters and statistics – Amount of employment, Number of hours in The employment agreement and Provided subsidy on Gross wage resources

Method: Least Squares				
Number of Model	**Model-1_3_27**	**Model-2_1_4**	**Model-2_1_5**	**Model-3_1_31**
Included observations after adjustments	262	281	281	261
Independent Variable	**The size of the term in the employment contract**	**The number of hours in the agreement to perform the work**		**Subsidy provided for gross wage resources in total**
Dependent Variable	*Coefficient and Prob./ Std. Error*	*Coefficient and Prob./ Std. Error*	*Coefficient and Prob./ Std. Error*	*Coefficient and Prob./ Std. Error*
Const	99,097*** 0,581	32,402*** 8,023	135,044*** 10,656	-0,583 0,673
_1V_PS_VEL_UVAZ	**0,010**** **0,004**			
_2V_DPP_HODINY		**0,0003*** **0,0002**	**0,001*** **0,0003**	
_3V_POSKYT_DOT_HM				**0,004**** **0,002**
_3Z_DND_ZAPLAT_NEOC_VYD	1,018*** 0,115		-1,168*** 0,082	
_3Z_DND_DOST_VYB_BYT	1,575*** 0,209	-0,443*** 0,060		
_3Z_P12MPH_NAJ_A		-0,143* 0,084		2,109*** 0,424
_3Z_DVP_OBT				2,119*** 0,126
_3Z_SN_PROBBYDL				-0,817*** 0,156
_3Z_DND_TYDEN_DOV	-0,510*** 0,125			
_3Z_P12MPH_TEPL_A		0,631*** 0,113		
_4Z_ZAM_M_40_44	-2,006*** 0,131			
_3Z_DND_JIST_MASO	-2,748*** 0,139	0,462*** 0,043	1,175*** 0,097	
_4Z_ZAM_M_25_29	-0,632*** 0,069			
_4Z_ZAM_M_20_24	0,475*** 0,040			-0,561*** 0,052
_3Z_DVP_SNAD		-0,160*** 0,028	2,563*** 0,111	
_4Z_ZAM_Z_65_VIC		-0,026*** 0,004	-0,074*** 0,012	
_5Z_PP_SKUT_ODPR_C_M		-0,367*** 0,089	-2,080*** 0,127	
_3Z_DVP_MEN_OBT		0,171*** 0,031		
_5Z_PP_SKUT_ODPR_KPD_M			0,488*** 0,030	
_4Z_ZAM_M_STR_S_MAT			-0,611*** 0,062	
_4Z_ZAM_M_50_54			-1,735*** 0,102	
_4Z_ZAM_M_65_VIC			-0,172*** 0,010	
_3Z_DVP_VELM_SNAD				-3,301*** 0,477
_3Z_SN_VLHKO_BYT				5,467*** 0,305
R-squared	0,783	0,704	0,881	0,778
Adjusted R-squared	0,776	0,694	0,976	0,772
F-statistic	113,816	71,719	199,000	126,429
Prob(F-statistic)	0,000	0,000	0,000	0,000
Durbin-Watson statistic	0,303	0,222	0,219	0,319

Source: Own calculation based on data from OKservices - Family, Ministry of Labor and Social Affairs, Czech Statistical Office.

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