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Introduction

This work is a collection of three empirical papers focusing on consumption and income in Slovakia. In all three papers we apply various econometrical and statistical methods to analyze economic data on both micro and macro level. The first and the second chapter study consumption as household consumption accounts for more than half of gross domestic product in most countries. Last chapter assesses the income flexibility in Slovakia.

The first chapter is based on my joint research with Jarko Fidrmuc titled "Human Capital, Consumption, and Housing Wealth in Transition", which will be published as a working paper of the National Bank of Slovakia. The paper deals with individual data on Slovak households. We focus mainly on human capital and housing wealth in Slovakia during the last two decades. We compare households that entered the labour market before and after the economic reforms in 1989. The economic reforms in Central and Eastern Europe bring benefits mainly to young and highly qualified people. Young cohorts receive an access to education without former political restrictions, open career opportunities in growing economies and a possibility to travel and work abroad. In contrast, old households had to bear the welfare costs of economic reforms. Because restructuring was associated with the destruction of non-efficient jobs, people often experienced shorter or longer periods of unemployment. Furthermore, their skills and work experience acquired in large state enterprises were often less demanded in market economy. However, we argue that the early cohorts are not necessarily worse off after the reforms.

The second chapter aims at consumption function from the macro perspective. Using the aggregate data, we estimate the elasticities on income and financial wealth in the consumption function. We also investigate the effects of interest rates, consumer confidence index and other relevant variables on consumption. Furthermore, we try to find the best proxy for financial wealth. Moreover, we evaluate three different consumption forecasting approaches in terms of forecast accuracy.

Finally, the focus in third chapter is on the concept of wage flexibility which is especially important for economic policies after the Slovak euro adoption. This chapter is based on my joint research with Pavel Gertler titled „Downward Wage Rigidities in Slovakia", which was published in Czech Economic Review. Wage flexibility is an important concept for monetary policy. It enters into central banks´ thinking about

optimum currency areas as well as into its thinking about optimum level of inflation and consequent setting of inflation target. Knowing the extent of wage flexibility is therefore important in any monetary environment; while having own monetary policy or being a part of larger monetary union. The aim of this chapter is to assess the extent of wage rigidities in Slovakia. We analyze industrial data as well as company level data.

1 Human Capital, Consumption, and Housing Wealth in Transition

Central planning in Eastern Europe put a large weight on material production and investment. Behind specialization of these countries on heavy industry, we show that these preferences were strongly anchored also in provision of human capital and physical goods to population. The access to education was strongly controlled and education was focused on areas enjoying preferences by central planning. By contrast, the countries made a significant effort to satisfy basic needs of population, including also affordable housing for everybody.

Also nearly 25 years after the beginning of economic reforms and transition in Eastern Europe, the former preferences are clearly visible in the endowment of population by human capital and physical capital. Using household expenditure surveys in Slovakia, we demonstrate significant differences between cohorts entering the labor market before and after 1990. On the one hand, returns to human capital are lower for education acquired before market reforms. On the other hand, the early labor market cohorts enjoyed also easier access to housing. We find that both effects seem to counteract each other to a significant degree. Older employees face lower returns to human capital, which lowers their disposable income. Keeping other effects unchanged, this would result in negative implications on their welfare. However, older households enjoyed also a preferential access to housing. Although the effects are difficult to quantify exactly, the magnitude of both effects, and their expected variability among individuals, lead to conclusion that it is difficult to identify winners and losers of transition, at least in the example of Slovakia. The importance of both effects describes how fragile is the political support for economic reforms in Eastern Europe. We argue that mass privatization programs (voucher privatization, but even more privatization of housing to incumbent tenants) played an important role for ensuring political support during economic reforms.

Behind political economy considerations, we provide several findings with regard to income, wealth, and consumption determinants at the household level. Household

income reflects education level of its members. However, we find also significant gender and regional differences. Disposable income is an important determinant of housing ownership as well as of its value. Finally, household consumption is determined by available income. Instrumental estimations of income effects imply marginal propensity to consume which is below 1 and it varies strongly for household categories. Finally, housing wealth is not entering directly the consumption function, which reflects low availability of financial instruments in Eastern European countries.

2 Consumption Function Estimate and Consumption Forecast: the Case of Slovak Republic

In the second chapter, we look at the impact of disposable income and financial wealth on the household consumption. We find that financial wealth influences the consumption in Slovakia. We also find the appropriate proxy for financial wealth. It turns out that the most appropriate proxy is a monetary aggregate M2 that represents a significant part of household portfolio extended for assets invested in mutual funds.

Using the Johansen procedure we obtain estimates of elasticities on disposable income (0.93) and on financial wealth (0.34). We assume that high elasticity of disposable income is caused by low share of consumer loans granted to households. As a result, the high share of disposable income is spent on consumption in Slovakia. The result is that the household consumption creates a high portion of disposable income.

We also examine the impact of other relevant variables. We find that the real consumption does not significantly respond to the changes in interest rates. Moreover, the coefficient on consumer confidence indicator is not statistically significant.

The second aim of the presented study is to find an appropriate model for consumption forecasting. We propose and compare three possible ways. The first one is based on the VEC model, the second model consists of three single equations and in the third one we forecast the consumption with ARMA model. Based on a comparison of in sample and out of sample forecasts we prefer to use the VEC model with exogenous variable (employment) for short-time forecasting of household consumption. As Slovakia belongs to the group of transition countries, it is possible that the presented relations will change in the following years and it will be necessary to revaluate the estimates of consumption function.

3 Downward Wage Rigidities in Slovakia

In the third chapter, we conclude that nominal wages are rigid downward especially in Austria, France, Belgium and the Netherlands with wage cuts prevented in excess of 40%. For all the other countries of the EU-15 sample we have not found significant wage rigidities, even though we found over 20% downward wage rigidities in U.K. and Finland. These findings are generally in line with other results from cross-country studies. Further it suggests that decreasing trend of downward nominal wage rigidities in time identified in Holden and Wulfsberg (2007) experienced its bottom point in the 1990s´ while since trending upwards again.

Nominal wages in new EU member states are relatively flexible all across the countries we have included in the sample. In case of Slovakia and Slovenia however, final result cannot be drawn. Having too few negative observations in the sample, there is higher sensitivity to random disturbances, which makes such results difficult to interpret.

In the second part of the paper we employ histogram location approach on company level data in Slovakia. The modification of this paper is the adoption of the methodology proposed by Holden and Wulfsberg (2007) to a company level data. The data sample we used covers hourly compensations in the time period between 2000 and 2007. The estimated extent of both nominal and real rigidity following the methodology used is relatively small. Conclusion that total compensations are rather flexible supports the decision of euro adoption in 2009.

We have identified and measured nominal wage rigidity only in the second part of the observed period (2005-2007). Although the methodology allows us to estimate lower bound of wage rigidity, based on estimated figures we can conclude that downward wage rigidity is small in the Slovak Republic. The computed share of companies affected by nominal wage rigidity ranges from 1.5 % in 2005 to 2.2 % in 2006 As a result, companies paid almost 300 million Sk (estimated number) more due to nominal wage rigidities in 2007. In macroeconomic sense this makes additional 0.14 percentage point of wage growth, which is a negligible effect. According to the methodology used, the extent of real wage rigidity is comparable with the degree of nominal wage rigidity and ranges between 2.1 % and 2.4 %.

Detailed analysis shows that small companies can better adjust wage costs according to their needs. On the other hand, we found significant nominal wage rigidities in larger companies in most of the years in the period studied. We can also conclude that

companies in the service sector can better adjust wage costs according to their needs whereas manufacturing seems to be more rigid in wage formation.

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