Privatization in Slovenia: A Macroeconomic Perspective of its Effects

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Abstract: State-owned enterprises and privatization has long been a major economic topic. After large privatizations in Great Britain, France etc., the privatization became an interesting topic again when now transition economies changed its economic system. The purpose of this article is to present preliminary results of the analysis that took into consideration of privatization proceeds potentially influencing some macroeconomic variables. However, we found that in Slovenia privatization so far influenced only on lowering public debt, while other influences could not be proven.

Keywords: state-owned enterprises, macroeconomic effects of privatization, Slovenia

JEL Classification: L33, E62, H82

Introduction

State-owned enterprises are not something new in economic theory and practice. As mentioned by Sobel (1999) already in ancient Middle East there have been state-owned enterprises in production facilities, whereas private ownership was primarily the domain of commerce and banks. Also in Greece, the state owned agricultural land, forests and mines. In Rome, on the other hand, the private ownership was more emphasized. Rondinelli and Iacono (1996) argue that the industrial revolution boosted the influence of private ownership, especially in western industrial countries – of course, large differences have been noted between different countries. Until large privatization programs in the second half of 20th century, modern economies had a large share of state-owned enterprises. In Great Britain – for example – the state founded or nationalized more than 50 big and important enterprises in steel industry, mines, railways, etc. But then suddenly large privatization waves came. The basic question is, what is the reason behind.

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Megginson and Netter (2001) mention some reasons and aspects: fiscal and economic efficiency, lower influence of government on the economy, competitiveness, etc.

It is not the purpose of proposed paper to discuss pluses and drawbacks of state-owned enterprises or aspects of nationalization and privatization. The main objective of the presented paper is to present the findings of empirical analysis that shed light on Slovenian case of so called second privatization wave, which followed voucher privatization in the beginning of 1990s immediately after the transition to market economy.

In our macroeconomic empirical analysis we studied the effect (net) privatization proceeds on several macroeconomic variables, such as public finances' deficit, public debt, unemployment, economic growth, private consumption and investments. Our finding interestingly show that contrary to major empirical studies the macroeconomic effect of the privatization in Slovenia has not (yet) been recognized or emphasized. This was a preliminary study so further analysis on longer time series would be necessary to confirm or reject our findings[1].

Theoretical Background – Expected Macroeconomic Effect of Privatization

The basic assumption in privatization analysis is that privatization tends to enhance the efficiency of the economy as a whole. Several studies (see Katsoulakos and Likoyanni 2002 for review of these studies) show that public companies lack of efficiency, especially compared to private companies. Privatization tend to have not only microeconomic effect, which has been clearly shown in many studies (see for example Boardamn and Vining (1989), Vickers and Yarrow (1991), Laffont and Tirole (1993), Shleifer (1998), Havrylyshyn and McGettigan (2000), Nellis (1999), Sheshinski and Lopez-Calva (1999), Shirley and Walsh (2001), Djankov and Murrell (2000a and 2000b), and others), but also – as mentioned – it tend to enhance the efficiency of the economy as a whole, and have a positive financial effect on public finances.

While there are numerous studies that test microeconomic effects of privatization, there are not many of them that are focused on macroeconomic aspect. Mackanzie (1998) shows that privatization has short-term and long-term effects on boosting the level and growth rate of output – on one condition: if proceeds of privatized companies are not used for additional government spending. Similar was shown by Barnett (2000), where 18 economies were taken into the analysis. He has found that a privatization at the level of 1% of economy's output increases the growth rate of output for 0,5 and 0,4 percentage points in current year (year of privatization) and in the year after, respectively. Besides that – he notes – privatization significantly

lowers unemployment; the effect is a quarter of a percentage point in the year of privatization. Very similar are results of the study by Davis, Ossowski, Richardson and Barnett (2000) – they try to a) answer the question whether privatization proceeds are mostly used for financing public deficit or for servicing the public debt; and b) are privatization proceeds correlated to economic performance of the economy and its public finances.

Aziz and Wescott (1997) argue that significant factors affecting favorable economic growth are in fact deregulation and privatization (beside price and market liberalization, and legal environment). Further, in his analysis Sala-I-Martin (1997) finds that economic growth tends to be significantly higher in economies with higher share of private ownership (in GDP). Again, Similar are results of the study by Davis e.a. (1995), where they find a strong correlation between privatization and economic growth (especially in non-transition countries).

Davis e.a. (1995) and Barnett (2000) note also that privatization has a positive effect on public finances. They argue that privatization proceeds can be considered as saved, regardless the nature of its spending: either to cover budget deficit or to lower public debt. The analysis of Davis e.a. (1995) shows that analyzed economies usually use privatization proceeds for servicing public debt or lower current public borrowing, rather then for raising the current public spending. Additionally Galal (1994) proves a long-term positive influence on privatization on tax incomes.

Analyzed from microeconomic perspective public companies (compared to private ones) tend to have higher number of employees, and higher wages and benefits (ceteris paribus), which is mostly due to so-called soft budget restraint (Megginson e.a. 1994). From the macroeconomic perspective, however, Boubakri and Cosset (1998) and Davis e.a. (1995) find that privatization does not cause unemployment. On the contrary, they even prove that economies tend to lower unemployment rates after privatization waves. However, they also note that such effect cannot be attributed only to privatization because economies with high privatization push usually change other economic parameters and policies as well (e.g. policies focused on economic growth and unemployment).

And lastly, privatization tends to boost the efficiency of capital market in the economy (Yeaple and Moskovitz 1995), even though researchers have hard time proving this effect. Leeds (1991) argues privatization arouse new investors, who start to 'play' on the stock exchange – such effect has especially a voucher privatization (similar to Slovenian first wave of privatization). Cook and Colin (1988) further show that in developing countries privatization significantly boosts capitalization of the stock exchange and its liquidity, whereas Leeds (1991) finds that in selected developing and transition countries stock market prices grew up for 15% on average.

Academic Rationale for the Article

Studies on privatization and its micro- and macro-effect have been very popular in the 80s of the past century, when most of European economies pushed at least several large privatizations. Especially in France and UK, privatization was up-to-date in that period and also academic studies have been largely focused on it effects (especially from microeconomic perspective). In present times privatization is topical issue in transition countries, especially so-called post-communist countries, also Slovenia. No prior research has been done with similar attention to Slovenian case of the 2nd wave of privatization. The present study – even though there are some drawbacks of the analysis as such, which is explained later on – tries to fill this gap and tries to discover new facts on the effects of the privatization in one of the post-communist countries.

Data and Methodology

Data

Regarding the main focus of the analysis we used data on gross and net privatization proceeds as explanatory variable. All data are on-line published by Ministry of finance. As dependent variables we used the same data as Barnet (2000), and Katsoulakos and Likoyanni (2002) used in their macroeconomic analyses:

- budget deficit/surplus,
- public debt,
- unemployment rate,
- economic growth,
- consumption and
- gross investments.

The analysis was performed on yearly data for the period from 1992 until 2005.

Methodology

A cointegration analysis was used to test the effect of privatization proceeds on selected macroeconomic variables. As a statistical test Eager-Granger test was used at 5% level of significance. Before testing a cointegration between selected variables, a level of serial correlation was determined to find the appropriate lag to be included

in further analysis. If necessary lagged dependent variable was included in the analysis.

Results and Discussion

In Slovenia only one major privatization transaction was performed so far. This was the sale 49% in the largest Slovenian bank (Nova Ljubljanska banka) in 2002. Other privatization transactions were relatively low as so were also the proceeds from privatization. However, it seems that (excluding year 2002), the majority of gross privatization proceeds were realized in 1990's. Figure 1 shows these proceeds in Slovenia. The real picture is maybe misleading because of one large transaction in 2002.

Figure 1: Privatization proceeds in Slovenia in the period from 1992 until 2005
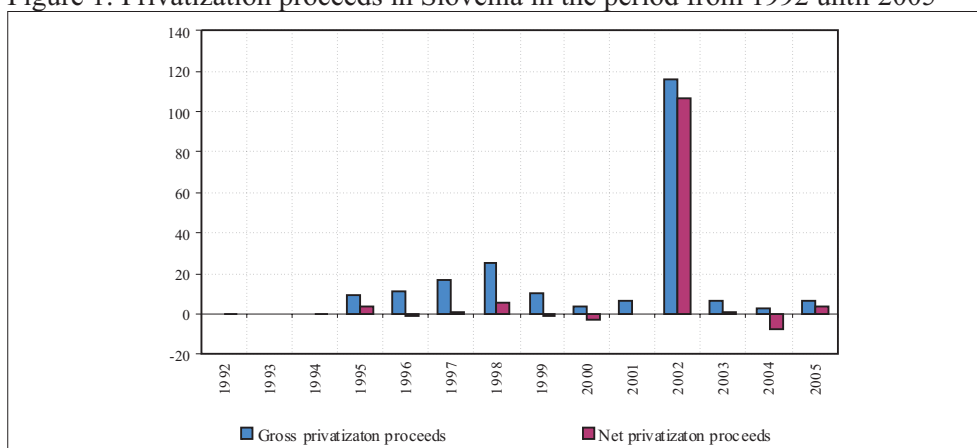
Source: Ministry of finance

The first test was performed to analyze the cointegration between budget deficit(-)/surplus(+) and net/gross privatization proceeds. Table 1 shows that although statistically significant cointegration, the negative value of cointegration coefficient leads to a conclusion that privatization have not influenced budget deficit. One can of course expect that higher privatization proceeds, higher budget balance (i.e. lower the budget deficit or higher budget surplus).

Table 1: Cointegration test: net/gross privatization proceeds vs. budget balance

	Model	Cointegration coefficient	t statistics	R^2	EG statistics	EG test statistics (P = 0,05)	DW statistics
1)	$JFPP_i =$						
	$\beta_1 +$	7,031	-0,825	0,82	-3,577	-1,95	2,09
	$\beta_2 \cdot PP_i$	-0,908	-4,191**				
	$\beta_3 \cdot JFPP_{-1}$	0,609	4,538**				
2)	$JFPP_i =$						
	$\beta_1 +$	14,529	-1,800	0,82	-3,705	-1,95	2,06
	$\beta_2 \cdot NPP_i$	-0,933	-4,217**				
	$\beta_3 \cdot JFPP_{-1}$	0,609	4,494**				

Where:		
	$JFPP$	– budget balance
	PP	– gross privatization proceeds
	NPP	– net privatization proceeds
	t	– time variable (1992 =1)
	EG	– Eager-Granger statistics
	DW	– Durbin-Watson statistics
	*	– significant at 5%
	**	– significant at 10%

This result is expected. In Slovenia the budget law does not allow to use privatization proceeds for current budget consumption. On the contrary, these proceeds can only be used to payback public debt. This result in fact confirms the strict budget rules in case of privatization proceeds.

Second analysis (Table 2) shows cointregration between privatization proceeds and public debt. The above discussion showed that privatization proceeds can only be used to lower/payback existing public debt. Our analysis statistically confirms this – cointegration coefficient at the level of approximately -1 evidently shows, that privatization proceeds were used only for this purpose.

Other macroeconomic variables, used in our analysis, were not found to be cointegrated with net or gross privatization proceeds (see tables 3-6). According to these results we cannot confirm any influence of privatization proceeds on broader macroeconomic variables. This means that in Slovenia the government followed strictly neutral effect of privatization and these proceeds were not used to affect government consumption and consequently other macroeconomic performance of the economy.

Table 2: Cointegration test: net/gross privatization proceeds vs. public debt

	Model	Cointegration coefficient	t statistics	R^2	EG statistics	EG test statistics (P = 0,05)	DW statistics
1)	$JD_i =$						
	$\beta_1 +$	50,750	1,376	0,99	-3,243	-1,95	1,37
	$\beta_2 \cdot PP_i$	-1,054	-1,875**				
	$\beta_3 \cdot JD_{-1}$	1,058	30,633*				
2)	$JD_i =$						
	$\beta_1 +$	59,477	1,500	0,98	-3,086	-1,95	1,22
	$\beta_2 \cdot NPP_i$	-0,939	1,561				
	$\beta_3 \cdot JD_{-1}$	1,049	29,338				

Where:		
	JD	– public debt
	PP	– gross privatization proceeds
	NPP	– net privatization proceeds
	t	– time variable (1992 = 1)
	EG	– Eager-Granger statistics
	DW	– Durbin-Watson statistics
	*	– significant at 5%
	**	– significant at 10%

Table 3: Cointegration test: net/gross privatization proceeds vs. unemployment rate

	Model	Cointegration coefficient	t statistics	R^2	EG statistics	EG test statistics (P = 0,05)	DW statistics
1)	$SB_i =$						
	$\beta_1 +$	12,732	24,297*	0,04	-0,910	-1,95	0,43
	$\beta_2 \cdot PP_i$	-0,001	-0,952				
2)	$SB_i =$						
	$\beta_1 +$	12,705	26,740*	0,03	-1,025	-1,95	0,50
	$\beta_2 \cdot NPP_i$	-0,011	-0,673				

Where:		
	SB	– public debt
	PP	– gross privatization proceeds
	NPP	– net privatization proceeds
	t	– time variable (1992 = 1)
	EG	– Eager-Granger statistics
	DW	– Durbin-Watson statistics
	*	– significant at 5%
	**	– significant at 10%

Table 4: Cointegration test: net/gross privatization proceeds vs. economic growth

	Model	Cointegration coefficient	t statistics	R^2	EG statistics	EG test statistics (P = 0,05)	DW statistics
1)	$SGR_t =$						
	$\beta_1 +$	3,945	11,706*	0,02	-2,88	-1,95	2,02
	$\beta_2 \cdot PP_t$	-0,003	-0,365				
2)	$SGR_t =$						
	$\beta_1 +$	3,930	12,246*	0,04	-2,12	-1,95	2,20
	$\beta_2 \cdot NPP_t$	-0,005	-0,560				

Where:	SGR	– public debt
	PP	– gross privatization proceeds
	NPP	– net privatization proceeds
	t	– time variable (1992 =1)
	EG	– Eager-Granger statistics
	DW	– Durbin-Watson statistics
	*	– significant at 5%
	**	– significant at 10%

Table 5: Cointegration test: net/gross privatization proceeds vs. consumption

	Model	Cointegration coefficient	t statistics	R^2	EG statistics	EG test statistics (P = 0,05)	DW statistics
1)	$ZP_t =$						
	$\beta_1 +$	235,841	5,225*	0,99	-3,27	-1,95	2,00
	$\beta_2 \cdot PP_t$	-0,503	-0,753				
	$\beta_3 \cdot ZP_{t-1}$	1,008	45,940*				
2)	$ZP_t =$						
	$\beta_1 +$	233,215	5,062*	0,99	-3,14	-1,95	1,90
	$\beta_2 \cdot NPP_t$	-0,317	-0,456				
	$\beta_3 \cdot ZP_{t-1}$	1,006	45,179*				

Where:	ZP	– public debt
	PP	– gross privatization proceeds
	NPP	– net privatization proceeds
	t	– time variable (1992 =1)
	EG	– Eager-Granger statistics
	DW	– Durbin-Watson statistics
	*	– significant at 5%
	**	– significant at 10%

Table 6: Cointegration test: net/gross privatization proceeds vs. gross investments

	Model	Cointegration coefficient	t statistics	R^2	EG statistics	EG test statistics (P = 0,05)	DW statistics
1)	$BI_i =$			0,98	-2,69	-1,95	1,60
	$\beta_1 +$	58,597	1,206				
	$\beta_2 \cdot PP_i$	0,623	0,933				
	$\beta_3 \cdot BI_{i-1}$	1,033	20,678*				
2)	$BI_i =$			0,97	-2,67	-1,95	1,58
	$\beta_1 +$	64,077	1,300				
	$\beta_2 \cdot NPP_i$	0,454	0,649				
	$\beta_3 \cdot BI_{i-1}$	1,034	20,231*				
Where:	BI	– public debt					
	PP	– gross privatization proceeds					
	NPP	– net privatization proceeds					
	t	– time variable (1992 = 1)					
	EG	– Eager-Granger statistics					
	DW	– Durbin-Watson statistics					
	*	– significant at 5%					
	**	– significant at 10%					

Conclusion

The purpose of this article was to test macroeconomic effect of privatization in Slovenia in the period from 1992 until 2005. In our hypothesis we speculated that second wave of privatization in Slovenia had no significant macroeconomic effect. This hypothesis has been proven – we have found that privatization proceeds had not influenced empirically significant on any of the analyzed variables with only one exception – public debt.

We argue that the second privatization wave has not yet stared in significant manner, because until end of 2006 only one economically significant successful privatization transaction was realized by the government. Due to strict budget consumption rules these privatization proceeds could only be used to payback existing public debt are could not in any way be used otherwise. If the government used privatization proceeds as government spending, this could (in Keynesian model, which could be applied in Slovenia in last decade and a half) effect tested macroeconomic variables – at least economic growth and unemployment.

We thus speculate that getting forward with economic reforms and in expectation of early euro adoption the government tired to focus on fiscal Maastricht criteria. We

could argue as well that the government tied to be restrictive due to the fact that there has been only one major privatization transaction.

However, we have to underline that this was a preliminary study so further analysis on longer time series would be necessary to confirm or reject our findings. Other analysis, which tested macroeconomic effects of privatization, relied on data available for a couple of decades. In our case only a decade and a half was available.

NOTE

[1] The analysis is presented more in details in Dolenc (2006).

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