

Slovenia has managed the transition process well. Judicious policy choices contributed to economic restructuring and stabilization, which facilitated the eventual adoption of, the Euro and the successful integration of Slovenia in

the European economy. This book discusses the challenges encovuntered during this process and the policy choices which led to Euro adoption in January 2007.

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From Tolar to Euro







CONTENT

STRATEGY FOR ENTERING THE EURO AREA	
Velimir Bole	7
DETERMINANTS OF INFLATION IN SLOVENIA	
Biswajit Banerjee and Haiyan Shi	
MONETARY POLICY INSTRUMENTS IN THE PERIOD BEFORE THE ADOPTION OF THE EURO	
Mitja Gaspari	
FISCAL POLICY ADJUSTMENT AND COORDINATION OF MACROECONOMIC POLICIES	
Dušan Mramor	71
PROGRAM FOR THE INTRODUCTION OF THE EURO	
Andrej Rant	
CASH CHANGEOVER EXERCISE	95
5020 Jusovic	
SLOVENIA AFTER EURO ADOPTION: CHALLENGES AND SOLUTIONS	
Thomas Dalsgaard	
WHAT DRIVES INFLATION IN SLOVENIA?1	
Jay Surti	115
PENSION SYSTEM ADJUSTMENTS	127
Dusan Kıdrıc	
HEALTH SYSTEM REFORM IN SLOVENIA	1.00
Armin Fidler and Inez Mikkelsen-Lopez	163



FOREWORD

The choice of an appropriate exchange rate regime is never easy. An exchange rate regime should provide a credible anchor for macroeconomic stability and be consistent with the overall goals of the economic policy of a country. The choice of the appropriate exchange rate regime becomes even more challenging when a country experiences dramatic changes as Slovenia did since 1991. The economy moved from a socialistic to a market-based system; trade was redirected; and, finally, the economy became fully integrated with other European economies. The IMF has been engaged in this process and has all along maintained a very fruitful dialogue with the Slovenian authorities.

Slovenia has managed the transition process well. Judicious policy choices contributed to economic restructuring and stabilization, which facilitated the eventual adoption of the euro and the successful integration of Slovenia in the European economy. This book discusses the challenges encountered during this process and the policy choices which led to euro adoption in January 2007.

Slovenia was the first of the new member countries to adopt the euro, an achievement which crowned the country's stabilization effort. However, as contributions in the book have made clear, several structural reforms, including in the areas of public expenditure, labor and product market regulation, and pensions, still need to be completed to build on the progress already achieved, and for Slovenia to fully reap the benefits of its true potential.

While the current crisis has hit all economies hard—especially those more integrated with the global economy such as Slovenia—the country has weathered its consequences well. I am confident that Slovenia will continue to advance its reform agenda in the years ahead, and that its policy choices will provide good prospects for a strong and sustainable economic recovery.

> Dominique Strauss-Kahn Managing Director International Monetary Fund

Chapter 1

STRATEGY FOR ENTERING THE EURO AREA

Velimir Bole

INTRODUCTION

Slovenia accomplished its transition to a market economy in two phases: a macroeconomic stabilization phase which lasted until 1996, and a structural adjustment phase which ended in 2000. Two additional phases were needed to enter the euro area: the "landing phase" which started in 2000 and ended upon entry into the European Union (EU) in 2004, and the "intermediate phase" which formally covered the Exchange Rate Mechanism II (ERM) II) period¹

During the landing phase, crucial macroeconomic variables (inflation, fiscal balance, interest rates, and debt) were brought into line with Maastricht targets, while in the intermediate phase the sustainability of landing was established. Policy measures in both the landing and ERM II phases could be considered together as part of an overall policy package designed to accomplish the fastest possible entrance in the euro area.

At the beginning of the process of adopting the euro, several structural shocks adversely affected macroeconomic performance and efficacy of economic policy.² Macroeconomic deterioration, coupled with potential long-term opportunity costs of being in the EU but not in the European Monetary System, resulted in a drastic change in economic policy strategy. Two crucial principles of the new economic policy were avoiding second-best solutions and ensuring tight interplay between monetary and fiscal policy.

This chapter discusses the main characteristics of the economic policy strategy for entering the Euro area. The relative contributions of monetary and fiscal policy are discussed, as are the means by which the economy was kept consistently on track towards the adoption of the euro despite shocks and resulting disequilibria.

¹ Condensed presentation of the landing phase of Slovenian transition in this chapter is based on the material from several previous papers; see Bole (2002, 2003a, and 2003b) and Bole and Mramor (2006).

² See, for example, Bole (2003a) or Bole and Mramor (2006).

The rest of the chapter consists of six sections. In the next section basic principles of the economic policy strategy are identified. Stylized monetary policy is presented in the third section, and stylized fiscal policy in the fourth sections. A formal model of the economic policy is presented in the fifth. Main findings are summarized in the concluding section of the chapter.

MAIN REASONS AND PRINCIPLES OF POLICY MODIFICATIONS

Structural changes

At the beginning of the process for entering the euro area (i.e., from the second half of 1999 onward), there were three major structural changes that profoundly affected not only the economic policy concerning inflation and financial stability, but also the strategy of the entire policy for entering the euro area.

First, in mid-1999, a value-added tax (VAT) and excise taxes were introduced, resulting in a jump in prices, a severe shift in relative prices in favor of services, and an almost complete pass-through of the price shock into wages. Second, due to a marked deterioration in the management of public sector finances in the late 1990s, the resulting chronic problems of insufficient tax revenues were systematically resolved by substantial rises in domestic taxes levied on goods and services and large increases in directly or indirectly regulated prices, which led, in turn, to additional supply price shocks. Finally, in mid-1999, all remaining restrictions on financial transactions with the rest of the world were abolished as a part of the EU accession process.³

These structural changes considerably weakened macroeconomic performance. The restructuring of the tax system, the changes in the management of public finances, and major revisions to indirectly and directly regulated prices significantly accelerated the growth of prices. For the same reasons, the relative prices of nontradable goods and services increased, even though they had already been far in excess of what would have corresponded to the Slovenian economy's level of development. In the 1990s, from the very beginning of transition, producers' market power in the nontradables sector was, namely, much higher than producers' market power in tradables.⁴

The efficiency of foreign exchange interventions to sterilize inflows was drastically reduced by deregulating foreign financial flows, and it became impossible to set independent (policy controlled) paths for money supply and the exchange rate.

³ See, for example, Bole and Mramor (2006).

⁴ See Bole (2002 and 2003b).

Economic policy modifications for entering the euro area

In the process of entering the euro area, economic policy was determined by three factors: deterioration of crucial economic performances at the beginning of the process, the short time span available prior to expected entry into the EU, and the evaluation of (potential) opportunity costs (risks) of being in the EU (and more so in the ERM II) but not in the common monetary area.

At the beginning of the process of adopting the euro, macroeconomic performance measures were far from the zone acceptable under the Maastricht criteria. Only the public debt was within Maastricht limits. The structural changes described above were key contributors to weak macroeconomic performance.⁵ The main focus of policy modification was therefore on neutralizing these negative effects. This included, first, mitigating the negative effect of huge foreign financial inflows on inflation and the stability of the financial (banking) system; second, preventing the inflationary effects of regulated price and tax increases systematically used for the strengthening of the government revenues; and finally, reversing the rising trend of government spending and deterioration of the fiscal balance by sustainable cuts (of the share in gross domestic product (GDP)) of government wages, social transfers, and current government spending on goods and services.

Upon entering the EU, it could be expected that the exchange rate would become a matter of common interest for the member states and that there would be a sharp decline in perceived country risk. On both accounts, a substantial increase in foreign exchange inflows was to be anticipated, with weakening of interest rate policy and the ability of the Bank of Slovenia (BoS) to sterilize foreign exchange inflows. In this way, entering the EU but not the euro area would have increased the risks to nominal convergence and financial stability. The response, decided upon by Slovenian policymakers well in advance of entering the EU, was to enter the euro area as quickly as possible.

At the time policymakers were considering these issues, the time available before anticipated entry into the EU in 2004 was very short indeed. This led to a fundamental strategic policy shift, from tackling Maastricht-related problems *seriatim* to tackling them all simultaneously. Second-best solutions, carrying with them side effects that needed to be mitigated, were to be avoided, that is, problems were to be addressed at the source. More generally, the strategy of "no offsetting disequilibria," according to which problems in one part of the economic system might not be solved by causing problems in another, was implemented. A high degree of coordination of fiscal and monetary policy was needed because monetary policy alone was unable to cope effectively with crucial macroeconomic performances in the short period of time available.⁶ Policymakers of fiscal and monetary policy even formally committed to high coordination of policy.⁷

⁵ See, for example, Bole and Mramor (2006).

⁶ See Bole and Mramor (2006).

Policymakers from both segments (fiscal and monetary) of economic policy formally committed to common a goal—the fastest entrance into euro; see "Joint Program of the Slovenian Government and the Bank of Slovenia," 2003. In the Program necessary adjustments of monetary and fiscal policy were proposed to make performances of the economy by EU entrance (in 2004) already prepared for immediate entering and the shortest (formally possible) staying in the ERM II.

MONETARY POLICY IN THE PROCESS OF ADOPTING THE EURO

Why did the strategy of monetary policy have to change?

After lifting capital controls in mid-1999, controlling money through short-term targeting of the monetary base became almost impossible. Any significant change in the expected rate of return differences (even in the short term) could potentially trigger an offsetting inflow of foreign capital, most notably through an increase in foreign exchange credits supplied by domestic banks. Lifting capital controls made the dynamics and levels of short term lending rates for foreign exchange credits of domestic banks almost equal to those of short-term credits abroad (see Figure 1).



Note: In percent of GDP; interest rates of German banks are presented for "banks abroad"; period of modified policy strategy is shaded.

Net foreign assets of the BoS were already much higher than base money, and the BoS therefore could not sterilize financial inflows to match money targets over shorter time horizons of three or four quarters.⁸ The difficulty of meeting short-term monetary targets was compounded by the considerable increase in long-term capital inflows, which are far less elastic with respect to interest rates. These long-term inflows accelerated not only because capital controls were lifted, but also because uncertainty regarding Slovenia's eventual EU accession virtually disappeared.⁹



⁸ See, for example, Bole (2003a). At the end of 2001, for example, when the euro was launched, capital inflows through the household sector attained around 4 percent of yearly GDP in only one month. It took the Bos over three quarters to neutralize the corresponding increase in the monetary base.

⁹ See Bole and Mramor (2006). Several large foreign direct investment inflows occurred in that period (e.g., Novartis took over the pharmaceuticals firm Lek).

Monetary policy had to focus on stabilizing prices in the nontradable sector by exerting control over domestic demand. This was made necessary because of still-present differences in the market structure between the tradable and nontradable sectors along with the corresponding high level of distortion in relative prices of tradable vis-à-vis nontradable products, as well as the sizable supply shocks to prices at the beginning of the process of adopting the euro. A second-best approach, such as one that would focus on the total price index, ran the risk that the relatively underdeveloped and improperly regulated nontradable-producing sectors would breed economic inefficiency, expressed in not only higher inflation, but also in a wider public sector deficit and/or larger external imbalance. ¹⁰

In such circumstances reducing inflation by exchange rate stabilization would be distortionary, since it would restrain prices in the tradable sector, but not (or not enough) in the nontradable sector, the nexus of instability. Moreover, a corresponding increase in the relative prices of nontradables would reduce the economy's prospects for long-term real convergence. ¹¹ After EU entry, the exchange rate of the tolar would become a matter of common interest for all EU member states, which would preclude the possibility of any further adjustments to the overvalued exchange rate.

What was the modified policy strategy?

Because of the aforementioned changes to macroeconomic performance and goals, the BoS changed its monetary policy strategy after 1999.

The increase in prices in the nontradable sector became the BoS's ultimate focus in that period. In the short term, it began targeting real interest rates and adhered to the basemoney volume targets only for the longer horizon.¹² Via operational targeting of the real interest rate, the BoS adjusted the degree of restraint on domestic demand with the ultimate objective of curbing the prices of nontradables.

To make effective real interest targeting possible, offsetting financial flows needed to be sterilized or at least neutralized. Therefore, the BoS began to tightly intervene in the foreign exchange market so as to prevent swings in the expected rate of return differences. Since domestic banks also offered residents foreign exchange claims (both debt and holdings),¹³ policy consistency demanded that the BoS prevent differences among expected (nominal, exchange-rate-risk-adjusted) returns on foreign-exchange- and tolar-denominated claims. Otherwise, the supply of foreign exchange claims would have been less restricted than the supply of tolar-denominated claims. In such a case, the overall monetary policy stance would not have been appropriate.

¹⁰ See, for example, Bole (2003b). On theoretical optimality of such policy in the economy with sectoral differences in the market structure, see, for example, Aoki (2001) or Clarida and others (2001).

¹¹ See, for example, Bole (2003b).

¹² Practical problems with implementing short-term money volume targeting pushed the BoS to adopt the same steps that Romer proposes in theory; see Romer (2000).

¹³ Currency substitution after 2000 attained almost 50 percent of banks' balance sheets.

A new strategy required adjustment of BoS instruments to enable much tighter management of exchange rate fluctuations. After 2000, in addition to permanent offerings of its tolar bills, the BoS also offered a permanent foreign exchange swap as a crucial new instrument for managing exchange rate dynamics. It offered the foreign exchange swap through a specially organized "club" of market maker banks. To increase the credibility of its commitment to interest parity, in the contract with club member banks, the BoS determined bands of swap price volatility around the main financing rate of the European Central Bank.¹⁴

The exchange rate therefore became a crucial instrument for dealing with capital inflows, though not through its unexpected volatility but through minimizing volatility and the size of the expected rate of return differences.

Track record of the modified monetary policy strategy

The change in the strategy and implementation of monetary policy is illustrated by graphs of the rate of return differences, real exchange rate, ex post real interest rates, and prices of goods and services. See Figures 2, 3, and 4.



In Figure 2 growth rates (quarter over quarter in the previous year) of prices of goods and services are given. Heuristically speaking, the figure illustrates that monetary policy was refocused on inflation in the nontradables sector. After 2002, rates of price increases in services decelerated much more than rates of price increases in goods. Price dynamics of services relative to goods therefore dropped to much lower values than before 2002. In

¹⁴ For details on the instrumentalization of foreign exchange swaps see Chapter 3 by Mitja Gaspari in this volume.

1996–2002, the average yearly relative growth rate of services (in comparison with goods) was 29 percent higher (e.g., if the price of goods increased 10 percent, the price of services on average increased 12.9 percent), but after 2002 the increase was only 15 percent.



between yearly nominal interest rate party (oii). Tate of return dimetences are calculated as a dimetence between yearly nominal interest rate on tolar credits and yearly interest rates on foreign exchange credits (converted in tolars) of the same maturity; RIR: ex post real interest rate is calculated as nominal interest rate on tolar short-term credits deflated by the increase in prices (measured on the quarter over quarter in the previous year basis); period of modified policy strategy is shaded.

Figure 3 illustrates that, after 2000, monetary policy used real interest rates as an operative target. In this figure, real interest rates and the rate of return differences between tolarand foreign-exchange-denominated instruments are presented. Real interest rates stopped falling in 2000; in the following six years real interest rates stayed at around 5.5 percent (for short-term lending) until entry into the euro area at the beginning of 2007. Meanwhile, the rate of return differences stabilized at around 1.5 percent, as an indicator of the common risk premium for country and currency. The figure therefore confirms that the modified monetary policy used the exchange rate to stabilize the rate of return differences between tolar- and foreign-exchange-denominated instruments.



Figure 4 presents further evidence that exchange rate policy was used to keep monetary (i.e., interest rate) policy consistent over different instruments. It presents the variability of rate of return differences (between tolar- and foreign-exchange-denominated instruments) and the real euro (ECU before 1998) exchange rate. After 2000, the strategic shift in monetary policy drastically reduced the variability of the rate of return differences. The exchange rate policy obviously prevented changes in the rate of return differences if tolar interest rates were changed. At the same time, the figure shows that the variability of the real exchange rate did not change. It therefore also illustrates that claims that the BoS targeted the real exchange rate were not correct.

FISCAL POLICY IN THE PROCESS OF ADOPTING THE EURO

Why did the strategy of fiscal policy have to change?

Public sector finances started to deteriorate after 1996. However, the full impact of the fiscal deterioration on crucial macroeconomic variables had not been visible before 2000, when the important structural changes in the economic mechanism started. The most important changes were caused by EU accession commitments, tax system changes, and increases in regulated prices.¹⁵

¹⁵ See, for example, Bole and Mramor (2006).

A VAT and excise taxes were introduced in 1999, which resulted in a jump in prices and severely altered relative prices in favor of services. In addition to these price increases, there were effects felt from the surge in regulated prices and further tax increases between 2000 and 2002. As has been mentioned, chronic problems with insufficient, cyclically squeezed tax revenues and expanding general government spending began to be systematically resolved by substantial increases in domestic taxes on goods and services and by large increases in directly or indirectly regulated prices (see Figure 5).¹⁶



Note: yearly growth rates; aggregate of regulated prices includes prices of social care, transport services (part), communication services (part), electricity and community services; oil products include gasoline and oil for heating; period of modified policy strategy is shaded.

Two-thirds of general government spending increases after 1996 was caused by the government's wage and household transfer increases. At the beginning of the euro process in 2000–01, upward pressure on government wages (driven by strong trade unions of doctors) increased. The resulting rise in government wages accelerated the deterioration of the fiscal balance, with the deficit reaching over 3 percent of GDP (see Figure 6). Because of demonstration effects, growth of wages in the business sector also accelerated (see Figure 7). This gave an additional push to the already strong wage pressures caused by the indexation price effects arising from VAT introduction in 1999.

¹⁶ In 2000, for example, the model of gasoline prices was adjusted, so that retail prices of oil products (gasoline, heating oil) were pegged to world oil prices (Brent Platt's) on a monthly basis.



Sources: Eurostat; and author's calculations. Note: In percent of GDP; period of modified policy strategy is shaded.



Figure 7: Average gross wages

Note: Quarter over quarter in the previous year; period of modified policy strategy is shaded.

Only parametric reform of pensions, launched in 1999, slightly alleviated the macroeconomic effects of long-run fiscal deterioration.¹⁷

¹⁷ See, for example, Bole and Mramor (2006).

What was the modified policy strategy?

It would not have been possible to reach Maastricht criteria for fiscal balance, inflation, and interest rates by entering the EU (in 2004) without a drastic change in the fiscal policy strategy. Fiscal deterioration reached such a dire state that it jeopardized not only the Maastricht fiscal criteria, but also interest rate and inflation targets. Because of strong supply price shocks arising from increases in taxes and regulated prices, the chances that monetary policy could stabilize prices and/or achieve interest rates convergence would have been seriously reduced had fiscal policy not been changed. Furthermore, a redesign of the fiscal policy (towards stricter support of the monetary policy) was also essential for the mitigation of the long-term opportunity costs (in terms of slower real convergence) of enforced nominal convergence.

A full-fledged "euro-entering" fiscal policy strategy was embarked upon after 2002, when both fiscal and monetary policymakers formally committed themselves to a common goal the fastest possible entry into the euro area. In the common program ("Joint Program of the Slovenian Government and the Bank of Slovenia," 2003) necessary adjustments to fiscal policy were proposed with a view towards preparing the economy for the fastest possible adoption of the euro following accession to the EU in 2004.

The new strategy reoriented fiscal policy towards three macroeconomic goals: reducing and restructuring general government spending, preventing and mitigating effects of the supply-side price shocks, and helping monetary policy to neutralize the effects of the huge inflow of foreign loanable funds that would accompany the process of adopting the euro.

Because of the supply-side nature of the price shocks in the 1999–2002 period, monetary policy alone was ill-equipped for curbing inflation, despite its new focus on controlling nontradable prices. Without coordinated fiscal policy actions, further relative price deterioration would have occurred and diminished the prospects for long-term growth, especially given the high degree of indexation still present in the economy. Moreover, several of the most important supply shocks were actually triggered by the government itself (increases in regulated prices, prices charged by state-owned utilities, and taxes). According to the new strategy of fiscal policy, the government had to stop using increases of taxes and regulated prices to offset shortfall in other fiscal revenues. To mitigate inflationary expectations, the new strategy also proposed offsetting increased volatility of oil prices with the opposite changes in the excise taxes on oil products.

Huge net financial inflows after 1999 considerably increased available loanable funds and therefore the opportunity costs of the increase in interest rates necessary to mop up excess money supply.¹⁸ Without fiscal policy support, the BoS could have faced acceleration in inflation or enormous (possibly even insurmountable high) financial costs of sterilization, higher real interest rates, and increased financial market volatility.

The new fiscal policy strategy changed its debt management orientation towards net repayment of foreign debt by means of increasing domestic government debt. In so doing, fiscal policymakers not only prevented rising government debt from causing additional net foreign financial inflows, but also mitigated the impact of private net foreign inflows on interest rates.

¹⁸ See, for example, Bole and Mramor (2006).

To achieve Maastricht targets for the general government balance by 2004, the new fiscal policy strategy focused on restructuring government expenditures and simplifying taxes, instead of lifting revenues by increasing taxes and regulated prices. A change in the adjustment rule for government wages with simultaneous launching of a voluntary pension scheme for public sector employees and a drastic cut in government current spending for goods and services were the most important measures introduced.¹⁹ The tax system was also restructured; reducing investment incentives in the corporate income tax was the most important tax measure for improving the fiscal balance.

Track record of the modified fiscal policy strategy

The scale of the reorientation of the fiscal policy is illustrated by the dynamics of the primary and total fiscal balance, government expenditures, the structure of government debt, and the dynamics of regulated prices.

In Figure 5 supply-side shocks in prices are illustrated. After adopting the common program for entering the euro area, fiscal policy immediately reduced increases of regulated prices. The dynamics of regulated prices after 2002 became the same as the dynamics of free (nonregulated) prices. In only two quarters, the yearly growth rates of regulated prices dropped by 7 percentage points. The volatility of gasoline prices was also smaller, because the Ministry of Finance started to neutralize short-term swings (but not longer-term trends) in world prices of oil by changing excise taxes on gasoline and heating oil in the opposite direction. Both measures helped the central bank to efficiently use higher interest rates to squeeze domestic spending and therefore (as shown in Figure 2) the prices of nontradables.



¹⁹ For details, see Chapter 4 by Dušan Mramor in this volume.

By restructuring public debt from foreign to domestic borrowing instruments, the modified fiscal policy helped the BoS to sterilize foreign financial inflows and enabled easier steering of the exchange rate in the ERM II phase. In Figure 8 government debt (domestic and foreign) is shown in percentages of GDP. After 2000, the Ministry of Finance obviously reversed its debt management strategy: it started to restructure debt from foreign to domestic instruments. In the period of preparing to adopt the euro (end of 2000 to end of 2006) such government debt restructuring effectively neutralized net foreign financial inflows of around 14 percent of GDP. The government additionally mitigated the pressure of foreign financial inflows through its holdings with the BoS. As Figure 9 shows, the government additionally sterilized inflows of foreign loanable funds of around 2 percent of GDP by keeping its deposits with the BoS.



The modified fiscal policy strategy completely reversed the dynamics of government expenditures. Government spending, having grown from 1996 to 2001 by 3.2 percent of the GDP, was reduced between 2001 and 2006 (just before accession to the euro area) back to the level that had prevailed in 1996 (see Figure 10).





Figure 11: General government current spending for goods and services

The main contributions to the reduction in general government expenditure were reductions in pensions, wages, and current spending for goods and services (see Figures 11, 12, and 13). In the period 2001–06, all three components taken together accounted

for virtually all (2.7 percentage points of GDP) of the overall drop of general government expenditures by 2.8 percentage points of GDP.



Source: Eurostat.

Note:In percent of GDP; period of modified policy strategy is shaded.



Note: In percent of GDP; period of modified policy strategy is shaded.

A parametric pension reform was launched in 1999 and began to reduce social transfers' share in GDP as early as 2001. A modified forward-oriented rule for adjusting government wages (accepted in 2003) reduced the growth of government wages to a rate considerably slower than wage increases in the business sector (see Figure 7). The yearly growth of average government wages dropped by over 8 percentage points. This drop led not only to slower wage growth in the business sector, but to slower increase in pensions as well, as these were partly indexed to wages. A modified wage adjustment rule was based on the expected increase in an index combining inflation in the euro area, changes in the exchange rate, and domestic inflation.

In 2004, the government considerably reduced spending for goods and services as well, after a detailed screening process (see Figure 11).

By 2004, the general government balance had already attained Maastricht-eligible zone, but it improved further prior to entering the euro area (see Figure 6).

As a participant in the euro area, the fiscal stance would have had to be even more important. Still, policymakers relaxed the fiscal stance in the months just prior to adopting the euro. In the last year of the ERM II phase, the government changed the tax system for the second time by restructuring individual income taxes and abolishing the wage bill tax and softened constraints on pension growth. Because of rapid economic growth and correspondingly higher government revenues and lower social transfers in 2006–07, the effects of this fiscal loosening did not become apparent until 2008 and, especially 2009, when the correspondingly weaker fiscal stance prevented strong enough policy response to the economic crisis.

MODEL EVALUATION OF THE EURO ENTRY POLICY

Model specifications

It is difficult, using only descriptive evidence, to evaluate the consistency of the policymakers' measures, not to mention government commitment, or even to assess the efficiency and contribution of such a policy to specific macroeconomic performances. In this section, a simple reduced-form model is specified and estimated for the period 1996Q1 to 2006Q4. It is applied to corroborate the assumed policy strategy, test the consistency of the policy, and evaluate its efficiency.

To encompass basic parts of the stylized policy mechanism, the model incorporates four endogenous variables and two exogenous variables. It deals with the interplay of the real interest rate, the real exchange rate, retail prices, and economic activity (GDP). To enable the model to track the actual dynamics, the volatile environment has to be explicitly specified in the model. Two exogenous sources of volatility are built into the specification of the model: economic activity (GDP) in EU and regulated prices (including prices of gasoline).

Monetary policy could be studied through shocks to the real interest rate and exchange rate equation, while fiscal policy could be studied through shocks to the economic activity equation and regulated prices.

The chosen exchange rate variable is the average quarterly euro-tolar exchange rate. The

price variable is calculated as an average quarterly retail price index. The quarterly average of (yearly) lending rates for short-term credits to the business sector is used for the interest rate variable. Data are, however, available only for nominal interest rates. The real interest rate is calculated as an ex post real interest rate (for the same quarter). Quarterly real GDP presents the economic activity variable. In calculating the real interest rate and real exchange rate the retail price index is used.²⁰ Except for interest rates, all other variables are in logs.²¹

Number of cointegration vectors	Trace statistics	Significance
None	120.8	0.0000
At most one	63.1	0.0002
At most two	21.4	0.1636
At most three	0.0	1.0000

Table 1. Rank test of cointegration

Source: Author's own estimates.

Endogenous variables of the model are stationary in differences.²² Results of the rank cointegration test are given in Table 1. The test rejected at most one cointegration vector hypothesis at 1 percent significance. The model is therefore estimated in a vector error correction form with two cointegration vectors. Although testing of cointegration would have to be done conditionally on the order of the model,²³ a lack of data due to the short estimation period made any parsimonious testing unsafe. The lowest order (p=1) is used, and cointegration is tested only for such specification.

Model results

The estimated model is presented in Tables 2 and 3. In Table 2, parameters of a longrun relationship (coefficients of cointegration vectors) and feedback parameters (loading matrix) are given. Coefficients of short-run relationships are presented in Table 3. In both tables t-statistics are given in parentheses.

²⁰ The consumer price index (CPI) is, namely, available only for the period after 2000. Official data for the retail price index were published until the end of 2005. For 2006, the index is extended by using CPI growth rates.

²¹ Data for price variables are from website of the Statistical Office of the Republic of Slovenia; data for the domestic interest rate and the exchange rate are from the Monthly Bulletin of the Central Bank, while GDP data (for EU and Slovenia) are from Eurostat.

²² Variables of the model passed the unit root test in differences at 1 percent significance.

²³ See, for example, Lütkepohl and Krätzig (2004).

Table 2. Model of economic policy—I

	First cointeg	ration vector	Second cointe	gration vector
	Long-run Parameters	Feed back Long rs Parameters Param		Feed back parameters
Real interest rate	1.0	-0.362 (-3.11)	0.0	0.666 (3.42)
Real exchange rate	0.0	0.101 (1.99)	1.0	-0.217 (-2.557)
Prices	0.253 (1.86)	0.061 (2.11)	0.178 (2.54)	-0.074 (-1.52)
GDP	2.675 (7.85)	-0.239 (-3.25)	1.308 (7.46)	-0.357 (-2.90)
Trend	-0.029 (-7.19)		-0.007 (-3.29)	

Source: Author's estimates.

Note: Estimation period 1996Q1–2006Q4; prices, real exchange rate, and GDP are in logarithms; feed back parameters are for equations of increment in variables; t-statistics are in parentheses.

	Real interest rate	Real exchange rate	Prices	GDP
Real interest rate	0.065	-0.014	-0.015	0.038
	(0.51)	(-0.22)	(-1.46)	(0.46)
Real exchange rate	-0.350	-0.004	0.198	-0.083
	(-1.00)	(-0.02)	(2.28)	(-0.37)
Prices	3.396	0.062	0.234	-0.234
	(7.45)	(0.31)	(2.06)	(-0.81)
GDP	0.069	0.063	-0.033	0.064
	(0.42)	(0.90)	(-0.81)	(0.61)
GDP_EU15	-0.272	-0.022	0.060	0.669
	(-1.91)	(-0.36)	(1.70)	(7.40)
Regulated prices and gasoline	-1.228	-0.274	0.327	0.252
	(-7.51)	(-3.846)	(8.03)	(2.43)

Table 3. Model of economic policy—II: short-run parameters

Source: Author's estimates.

Note: Estimation period 1996Q1–2006Q4; prices, real exchange rate, GDP, GDP_EU15, and regulated prices are in increments of logarithms; real interest rates are in increments; t-statistics are in parentheses.

To illustrate the quality of the model specification, test of autocorrelation, heteroscedasticity, and normality of residuals are given in Table 4. Because of several shocks (lifting capital controls, VAT introduction, and sizable increase in the regulated price dynamics) to which the economy was exposed in the period after 1999, test of possible shift in the economic mechanism at the end of 2000 is made. Results are also presented in Table 4.

Table 4. Diagnostics for VEC model

	Statistics	Degrees of freedom	Significance					
Autocorrelation								
LM2	21.3	16	0.17					
LM4	13.1	16	0.67					
Nonnormality								
Skewness	2.06	4	0.73					
Kurtosis	5.55	4	0.24					
JB	7.61	8	0.24					
	Heterosc	edascity						
White	176.9	160	0.17					
VARCH_LM	316.9	300	0.24					
	Shift in 2	2000Q4						
LR	2.90	2	0.24					

Source: Author's estimates.

Note: Residuals from the model estimation period 1996Q1-2006Q4.

The long-run relationships between the real interest rate, real exchange rate, GDP, and prices have highly revealing interpretation if the cointegrating space is respanned. In Table 5 results are presented of respanning the cointegrating space and adding three (nonsignificant) overidentifying restrictions. From the table, long-run relationships could obviously be written as the following convergence relationships:

(a) Nominal and real convergence

0.4*R+(0.1*P+0.9*Y)-0.01*T

(b) Financial convergence

(0.37*R+0.63*E) -0.005*T

where R is the real interest rate, P is the log of prices, Y is log of real GDP, T is a time trend, and E is the log of real exchange rate of euro per tolar (to increase the motivation of the relationship, the inverse of the exchange rate used in the estimated model is presented in relationship (b); the sign of the coefficient is changed accordingly).

	First cointeg	ration vector	Second cointegration vector		
	Long-run parameters	Feed back Parameters	Long-run Parameters	Feed back Parameters	
Real interest rate	0.392 (4.01)	0.156 (1.59)	-1.38 (-5.21)	0.272 (3.92)	
Real exchange rate	0.0	0.0	2.351 (8.99)	-0.072 (-2.37)	
Prices	0.111 (2.76)	0.0	0.0	-0.032 (-1.83)	
GDP	0.889 (21.79)	-1.298 (-7.54)	0.0	-0.177 (-3.76)	
Trend	-0.010 (-20.65)		0.020 (12.33)		

 Table 5. Model of economic policy—la: alternative spanning of the cointegration space

 with overidentifying restrictions on cointegration vectors (1) and loadings (2)

Source: Author's estimates.

Note: Alternative choice of cointegration vectors from cointegration space: normalization on convex combination of prices and GDP in the first, and on convex combination of exchange rate and interest rate in the second cointegration vector; estimation period 1996Q1–2006Q4; prices, real exchange rate (tolars per euro), GDP, GDP_EU15, and regulated prices are in logarithms; t-statistics are in parentheses; three overidentifying restrictions (one on β space and two on loadings); test of overidentifying restrictions $\chi_2(3)$ = 1.598, p=0.66.

The first relation (a) captures the idea of the speed and the structure of (nominal visà-vis real) convergence. The convex combination of prices and GDP (nominal and real convergence) had a maximal long-run growth rate of 4 percent per year reduced for the intensity of financial repression (the real interest rate). The nominal and real convergence relationship therefore shows an offsetting between nominal and real convergence, as well as the effect of financial repression on the speed of convergence. Obviously, every percentage point of yearly real interest rate curbed combined convergence by 0.4 percent per quarter. The same relationship also shows that (for a given speed of convergence) there was longrun offsetting between nominal and real convergence (between GDP and prices). Namely, every percentage point of faster nominal (price) convergence in the long run decreased real (GDP) convergence by 0.1 percent.

The second long-run relationship (b) presents financial convergence. It indicates that in the period analyzed, the convex combination of real exchange rate and real interest rate grew by 2 percent per year. Obviously every percentage point of yearly real interest rate decrease in the long run increased appreciation of the tolar real exchange rate by 0.6 percentage point per quarter. The relationship for financial convergence also shows that the constant real interest rate (as in the period of landing, see Figure 3) implied long-run appreciation of the real exchange rate of 3.2 percent per year.

The model, therefore, shows that in Slovenia, the long-run dynamics of convergence of the real sector (price stabilization and GDP growth) and the financial sector (dynamics of real interest rate and exchange rate convergence) were interconnected by the real interest rate, while potential long-run restructuring of any sector resulted in a strong offsetting effect within the sector and/or changed convergence of both sectors.

Coefficients of the short-run part of the model are given in Table 3.

Deviations from both long-run relationships feed back significantly through the short-run dynamics of interest rate, exchange rate, prices, and GDP; all error correction coefficients are significant.





The mechanism of the policy measures' effects is illustrated by the impulse response graphs in Figure 14 and the structure of forecast error in the tenth quarter presented in Table 6. Figure 14 shows real interest rate responses to impulses in prices, real exchange rate responses to real interest rate impulses, and responses of prices to real interest rate, exchange rate, and GDP impulses. Structure of forecast errors is given for all endogenous variables.

	Interest rate	Exchange rate	Prices	GDP
Interest rate	0.51	0.65	0.82	0.23
Exchange rate	0.30	0.33	0.05	0.23
Prices	0.17	0.01	0.09	0.09
GDP	0.02	0.01	0.03	0.45

Table 6. Sources of forecast error (in the 10th quarter)

Source: Author's estimates.

Note: Estimation period 1996Q1–2006/Q4; prices, real exchange rate (tolars per euro), and GDP are in logarithms; real interest rates are in levels; structure of forecast errors is in columns.

The price impulse gives a strong push to the real interest rate in the second quarter; the long-run increase in real interest rate is similar. After ten quarters 17 percent of the variance in real interest rate is due to the price equation impulse. The strong effect of prices on real interest rates already apparent in the second quarter probably resulted not only from the mechanism of the policymakers' activity, but also from the system of interest rate indexation. An unexpected change in prices affected nominal interest rates immediately, while expected inflation probably changed much less (because of one additional piece of information).

Crucial evidence for the monetary policy strategy is the graph showing effects on the exchange rate of impulses to the real interest rate. An increase in the real interest rate already pushes up the real exchange rate in the first two quarters. Long-run responses are lower, approximately half of the initial effect. Nevertheless, the percentage of the real exchange rate forecast error variance due to the real interest rate does not decrease significantly in the long run. As seen in Table 6, in the tenth quarter 65 percent of the exchange rate forecast error comes from interest rate. Such an empirical fact corroborates the mechanism of monetary policy described earlier, according to which money (interest rate) control is used to stabilize prices, while the exchange rate is adjusted to maintain expected rate of return differences at the same level and so prevent the offsetting dynamics of loanable funds from abroad through credits in foreign exchange. A strong response of the exchange rate to impulses to the interest rate could also reconcile trend and volatility of the expected rate of return differences, especially after 1999, and the dynamics of the ex post real interest rate presented in Figure 3.

In the period of the euro adoption process, responses of prices to real interest rate impulses were considerable. At the same time, the responses of prices to impulses in the real exchange rate were much smaller than those of the real interest rate, especially over longer horizons. After ten quarters, responses to exchange rate impulses were approximately one-fourth of the responses to interest rate impulses. In the tenth quarter almost 82 percent of the forecast error variance for prices resulted from the real interest rate, and only 5 percent from the real exchange rate. Price responses to economic activity (GDP) impulses are approximately half of the responses to the exchange rate.

economic activity but not through the interest rate channel (e.g., by cutting government investment) was therefore quite inefficient in the period of euro adoption. Possible high responses of prices to economic activity could, therefore, be detected only if the interest rate channel and/or the influence of foreign economic activity are not explicitly accounted for in the analysis.

Because of the high significance of EU economic activity and regulated prices in the model equations, particular phases of both exogenous variable paths could have considerable effect on nominal (and real) convergence in the process of euro adoption. Therefore, responses of the endogenous variables to changes in EU economic activity and regulated prices have to be observed also.

We have already documented how supply shocks to regulated prices severely worsened inflation performance of the Slovenian economy at the beginning of the euro adoption process. Because the modified economic policy strategy in the process of euro adoption tackled this price deterioration mostly by fiscal policy measures (dampening large increases of regulated prices) and keeping the real interest almost unchanged (see Figures 3 and 5), it is worth comparing model effects of monetary vis-à-vis fiscal policy measures in reducing inflation.



To compare price convergence, Figure 15 shows responses of prices to one standard deviation innovations to the exogenous variables (regulated prices and economic activity in the EU).

The graph of price response to the innovations in regulated prices clearly documents the crucial importance of the regulated price mitigation for nominal convergence. The graph shows that already after four quarters, price responses to the regulated price innovations are more than ten times greater than price responses to the real interest rate, not to mention responses to the exchange rate. Figure 15 also shows that the price responses to one standard deviation innovations of GDP in the EU are similar to (but not much smaller than) price responses to interest rates, but the corresponding responses need almost two years to increase to its full size.

The model results document that actual economic mechanism (crucial causal chains and the magnitude of empirical effects) enabled the policy strategy described earlier to actually

Center of Excellence in Finance

take place in the process of euro adoption.

In particular, the model does not reject the fact that the stabilization was facilitated through targeting real interest rates. Comparison of impulse response functions corroborates, namely, that interest rate policy was considerably more effective at mitigating price dynamics than exchange rate anchoring. Model results also document the consistency of intervening in interest rates (of tolar vis-à-vis foreign exchange instruments), as exchange rate interventions were adjusted to the interest rate trajectory.

The reorientation of the fiscal policy after 2002 towards responding to supply-side shocks through regulated prices finds strong support in the model. Low economic activity in EU in 2002–03 could influence the inflation dynamics after 2004 (due to the eight-quarter lag of full effect), but its contribution to calming inflation had to be considerably smaller than the contribution of the more restrictive monetary policy and far smaller than the contribution of the reorientation in the fiscal policy towards mitigating cost-push inflation emanating from increases in regulated prices, launched after 2003.

Conclusions

In the process of entering the euro area (2000–06), Slovenia drastically changed the design and strategy of its economic policy. Avoiding second-best solutions and ensuring tight interplay of monetary and fiscal policy were the two crucial principles of the changed economic policy.

The growth of prices in the nontradable sector became the ultimate focus of the BoS. It started to effectively target real interest rates. To achieve policy consistency, the BoS also began to tightly manage exchange rate movements. By doing this, it prevented differences among expected returns on foreign exchange- and tolar-denominated instruments (adjusted for foreign currency risk premium).

A modified fiscal policy strategy refocused on three macroeconomic goals: (1) reduction and restructuring of the general government expenditure, (2) prevention and mitigation of the effects of supply-side price shocks, and (3) a restructuring of public debt from foreign instruments to domestic ones. Reduction and restructuring of government expenditure was necessary to squeeze fiscal deficit to Maastricht's zone, while mitigating supply-side price shocks through increasing regulated prices and taxes made price stabilization more credible and faster. By restructuring public debt from foreign to domestic instruments, fiscal policymakers helped the BoS to sterilize the inflow of foreign financial flows, leading to easier steering of the exchange rate in the ERM II phase and interest rate convergence towards Maastricht criteria.

The model results corroborate the effectiveness of the modified economic policy strategy, in the process of euro adoption. Evidence from the model demonstrates that targeting real interest rates was significantly more effective at mitigating inflation than exchange rate anchoring. The results also document a consistency of intervening in interest rates (of tolar vis-à-vis foreign exchange instruments), as exchange rate interventions were adjusted according to the interest rate trajectory.

External conditions (low economic activity in EU in 2002–03) influenced inflation dynamics, but the corresponding contribution to nominal convergence was considerably smaller than contribution of the more restrictive monetary policy and far smaller than the

contribution of the reorientation in fiscal policy towards mitigating increases in regulated prices and taxes.

The appropriateness and the effectiveness of the policies also testify to the fact that by entering the EU in 2004, Slovenia already fulfilled all four Maastricht criteria.

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Chapter 2

DETERMINANTS OF INFLATION IN SLOVENIA ON THE ROAD TO EURO ADOPTION*

Biswajit Banerjee and Haiyan Shi

Slovenia's inflation developments from independence in 1991 to euro adoption in 2007 can be divided into three broad phases. Inflation declined rapidly from over 200 percent in 1992 to the single digits in 1996 and, after a pause in 1997, to below 5 percent in the first half of 1999. Thereafter, there was a resurgence of upward pressure on prices and inflation remained sticky at around 9 percent during 2000 and the first half of 2001. In the subsequent period, inflation was on a downward path and bottomed out at 2 percent in mid-2005 and fluctuated in the range of 2 to 3 percent from then until the end of 2006 (Figure 1). Slovenia joined Exchange Rate Mechanism II (ERM II) in June 2004, fulfilled the Maastricht inflation criterion in late 2005, and kept fulfilling it throughout 2006.



Reducing inflation and achieving price stability was a primary focus of Slovene policymakers throughout the period, though this goal occasionally faced conflicts with other objectives. Disinflation in the first phase (1991 to mid-1999) was the result of a strategy that involved controlling liquidity and capital inflows, implementing a conservative fiscal policy, and securing wage moderation through incomes policy. The pickup in inflation and its stickiness during the second phase (mid-1999 to mid-2001) reflected a combination of exogenous shocks from higher indirect taxes and increases in administered prices, an accommodating monetary policy and somewhat expansionary fiscal stance, and widespread indexation in the economy that tended to lock in the price shocks. In the third phase (mid-2001 onward), with European Union (EU) accession approaching and in preparation for ERM II, monetary policy became more supportive to disinflation and the policymakers began addressing the costpush factors that contributed to inflation inertia over the previous years. In particular, efforts were geared toward reducing price pressures from changes in indirect taxes and administered prices, moderating public sector wage growth, and weakening wage indexation.

In this chapter, we discuss the dominant factors that influenced inflation in Slovenia during 1999–2006, and provide a quantitative analysis of their importance through an econometric exercise.

CHARACTERISTICS OF THE INFLATION PROCESS, 1999–2006

Administered price changes

Administered price changes associated with relative price alignments and adjustments in energy prices have been an important factor in the inflation process in Slovenia. Their annual contributions to headline inflation were in the range of 0.4 to 2.2 percentage points (Tables 1 and 2).¹ The rate of increase of administered prices exceeded the headline inflation rate in most years, and the deviation was particularly pronounced during 2000–01 and 2004–06. Initially, movements in administered price inflation and underlying net inflation were in similar directions.² However, from mid-2003 onward underlying net inflation was on a declining trend and more than offset the pick up in administered price inflation, yielding a corresponding declining trend in headline inflation (Figure 2).

¹ The share of administered prices was around 28 percent of the consumer price basket until 1998. Following liberalization of several items, the share fell to 17 percent in 1999.

² Underlying net inflation is defined as inflation excluding the impact of indirect tax and administered price changes.

	1999	2000	2001	2002	2003	2004	2005	2006
Administered prices, total	10,4	16,0	10,6	9,2	4,0	9,0	7,9	2,1
Gasoline	14,3	26,2	7,7	7,7	3,3	14,2	11,7	3,1
Electricity tariffs	6,0	8,2	5,0	2,8	3,9	4,0	1,3	2,3
Telephone services	11,5	5,7	17,4	23,7				
Municipal services	10,2	20,1	22,4	17,8	5,8	11,4	-0,6	-10,1
Social housing rents			12,4	9,4	29,8	10,9	4,5	3,9
Memorandum items:								
CPI inflation, headline	8,9	8,9	7,0	7,2	4,6	3,2	2,3	2,8
Net inflation ¹	5,2	7,1	5,1	5,1	4,0	1,8	1,5	2,3

Table 1. Adjustments in administered prices, 1999-2006

(Percent change; end-of-period)

Note: "..." denotes zero.

Source: Institute of Macroeconomic Analysis and Development (IMAD).

¹ Net inflation excludes the impact of changes in administered prices and indirect taxes.

Table 2. Cor	ntribution	of adminis	tered prie	e and	indirect	taxes to	year-on-year	inflation,
1999-2006, (Percentag	e points,en	d-of-perio	od)				

	1999	2000	2001	2002	2003	2004	2005	2006
Administered prices, total	1,5	2,2	1,4	1,3	0,6	1,4	1,3	0,4
Gasoline	0,7	1,2	0,4	0,4	0,2	1,0	0,9	0,2
Electricity tariffs	0,2	0,3	0,2	0,1	0,1	0,1	0,01	0,1
Telephone services	0,1	0,1	0,2	0,3				
Municipal services	0,2	0,4	0,5	0,5	0,2	0,2	0,01	-0,2
Social housing rents						0,1	0,01	0,01
Other	0,3	0,2	0,1	0,1	0,1	0,1	0,4	0,2
Indirect taxes	2,3	0,6	1,3	1,7	0,7	0,4	-0,3	0,5

Note: "..." denotes zero.

¹ Negligible

Source: Institute of Macroeconomic Analysis and Development (IMAD).

A major cause of the rapid increase in administered prices was higher fuel prices, which account for about 40 percent of all administered prices. Fuel prices are not directly controlled by the government, but are administered in the sense that the mechanisms for transferring the impact of changes in international oil prices and the exchange rate are specified in a pricing model. International oil prices surged during 1999–2000, and after a brief let up in 2001 rose steadily from the second half of 2002. To mitigate the impact of rising international oil prices of fuel, the government began to lower excise duties from 2003. However, in mid-2005, the government ran out of maneuvering room to pursue this policy, as excise duties on fuel reached the minimum level allowed by EU regulations. Thereafter, increases in international oil prices were fully translated into higher domestic prices of fuel.


Increases in nonfuel administered prices were essentially a reflection of the unwinding of distortions in the price structure. During 1999–2002, prices of a number of regulated nonfuel items increased rapidly. Consequently, the authorities became concerned about their demonstration effect on price formation in other sectors and the influence on inflation expectations. They also considered many of the increases in prices to be unjustifiably high and a reflection of ineffective functioning of the regulatory bodies.³ Thus, the authorities adopted a policy of capping price increases and pressuring service providers for greater cost efficiency and savings. From 2003 onward, a key guideline was that prices of nonfuel administered prices should not diverge substantially from increases in projected market-determined prices, which were on a downward path.

Changes in indirect taxes

Changes in indirect taxes initiated to satisfy EU directives also contributed to headline inflation. As Table 2 shows, the contribution ranged between 0.6 to 2.3 percentage points annually during 1999–2002, and about ½ percentage point annually thereafter. The introduction of the value added tax in 1999 and the environmental tax in 2002 were one-off events that exerted substantial upward pressure on prices. In addition, the program of annual increases in excise taxes on cigarettes and tobacco, aimed at gradual harmonization of these rates to EU levels during 2000–08, became an ongoing source of inflation.

³ As indicated to IMF staff during the Article IV consultation discussions; see IMF (2003 and 2004a).

Monetary and exchange rate policy

Prior to ERM II entry, Slovenia's disinflation strategy primarily involved keeping a grip on liquidity, though over a longer horizon. Toward this end, the Bank of Slovenia (BoS) targeted a certain level of real interest rates, and closed the risk-adjusted interest differential between euro- and tolar-denominated instruments by exchange rate depreciation. Following ERM II entry in June 2004, depreciation came to an end and the exchange rate of the tolar vis-à-vis the euro was kept within a narrow band around the central parity.



Under the monetary policy framework of the BoS, the evolution of consumer prices and the exchange rate was broadly similar (Figure 3). The pace of tolar depreciation picked up sharply between 1998Q4 and 1999Q2 and was sustained at around 6 percent (year-on-year basis) for a two-year period until mid-2001. As such, this pattern of exchange rate behavior fueled inflation pressure and imparted additional inflation inertia. Moreover, an easing of monetary conditions also contributed to inflationary pressure during 1999–2000 (Figure 4). The BoS accommodated the first- and second-round effects of price shocks originating from increases in administered prices and taxes out of concerns that a more restrictive monetary policy would hurt the tradables sector and dampen economic activity.⁴

From mid-2001 onward, a steady slowdown in the pace of tolar depreciation and a tightening of monetary conditions were accompanied by falling inflation. With the stabilization of the exchange rate upon ERM II entry in June 2004, there was a further marked drop in underlying net inflation as the lagged effect of earlier depreciation faded.

The contribution of exchange rate changes to inflation in Slovenia has been the subject of some debate. The BoS believed that its management of the nominal exchange rate was inflation neutral in the medium term and that the expected dynamics of depreciation

⁴ As indicated to IMF staff during the 2003 Article IV consultation discussions; see IMF (2003).

did not have any systematic effect on inflation expectations.⁵ However, the Institute of Macroeconomic Analysis and Development (IMAD) and some other researchers believed that there was almost complete pass-through of exchange rate changes to prices.⁶



Interest rate is measured with the BOS 60-day bill rate (end of quarter data). The monetary conditions index (MCI) assigns 67 percent weight to changes in the real interest rate, and 33 percent weight to changes in the real exchange rate. The calculation does

The IMF staff's policy advice over the years was for a more proactive role for monetary policy in lowering inflation by slowing down the pace of tolar depreciation more deliberately than the BoS actually did. However, the BoS did not adopt this advice out of concerns that a stronger tolar entailed risks of capital inflows, which would lead to inflationary pressures and undermine the disinflation process.⁷ This concern was particularly evident in the implementation of exchange rate policy during 2003. The actual slowdown in the pace of depreciation during 2003 was less than originally planned by the BoS, because officials felt that rate cuts by the European Central Bank and growing interest of foreign investors in Slovene financial instruments had squeezed the room for a more restrictive monetary policy.

Wage policy

National tripartite wage agreements provided a supporting framework for disinflation during the run-up to euro adoption. The exogenous price shocks from changes in administered prices and indirect taxes during 1999–2001 triggered large increases in nominal wages, given the prevalence of backward-looking indexation. However, after

⁵ See BoS (2006), Box 2.2, p. 19.

⁶ See IMAD (2004), pp. 49–50; and Corricelli, Jazbec, and Masten (2004).

⁷ See IMF (2003 and 2004a).

reaching a peak of nearly 12 percent in 2001, nominal wage growth slowed to 4³/₄ percent during 2005–06. With productivity growth relatively stable over time, the dynamics of unit labor costs were similar to that of nominal wages (Figure 5). The wage drift slowed as the tripartite agreements

- shifted to a new indexation formula that took into account not only developments in domestic inflation but also expected inflation in the EU and change in the exchange rate; and
- set down the guideline that real wage increases should lag productivity growth by at least 1 percentage point.



1 Economy-wide.

The social partners broadly abided by this proposed guideline (Figure 6). To weaken the inflation-wage linkage further, the government took additional steps to ensure that increases in average wages in the public sector were below those in the private sector.



Economy-wide.

Aggregate demand conditions

The cyclical position of the economy was an important factor behind inflation developments. The upturn in headline inflation in 1999–2000 coincided with a strengthening of aggregate demand and an associated positive gap between actual and potential output (i.e., actual in excess of potential). The reduction in inflation from mid-2001 to end-2005 closely tracked a decline in the output gap with a small lag (Figure 7). With the economy growing significantly faster than the potential rate in 2006, the negative output gap that existed during 2003–05 closed and the output gap turned mildly positive. Although there was no significant increase in inflation in 2006, the emerging positive output gap signaled incipient inflation pressures in the period ahead.



An easing of the fiscal stance added to demand pressure during 1999–2002. The cyclically-adjusted general government deficit increased from 0.7 percent of GDP in 1998 to 2.6 percent of GDP in 2002. In the subsequent years, however, fiscal stimulus was absent, with the cyclically-adjusted deficit settling around 1 percent of GDP during 2003–06.

IMF staff were concerned about the prospect of domestic demand strengthening and feeding inflation pressures as Slovenia began to experience rapid private credit growth from 2004 onward, fueled by interest rate convergence and heightened competition in the banking sector. They also considered it likely that expectations of higher permanent incomes associated with euro area membership would generate a positive wealth effect, inducing individuals to spend more. However, a domestic demand boom did not materialize until 2006, because households in the aggregate increased their saving rate and diversified their investment portfolios into assets of nonbank financial institutions.⁸

1. Slovene officials were less concerned than IMF staff about the upside risks to inflation from a demand boom and faster-than-potential economic growth. They took the view that any increase in domestic demand pressures would largely spill over into a higher external current account deficit. When a positive output gap emerged in 2006, the BoS did not see a major risk of significant inflationary pressures because the impetus to higher growth was mainly from investment rather than from private consumption or government spending.⁹ The quantitative analysis below will shed further light on this debate.

⁸ See Oura (2005).

⁹ See IMF (2005a), paragraph 15; and BoS (2006), p. 16.

QUANTITATIVE ASSESSMENT OF INFLATION DEVELOPMENTS

The model

The demand and supply factors explaining inflation discussed in the previous section are brought together in a simple two-equation model of inflation for a small open economy following Sommer (2004).

 $\begin{aligned} &\ln \text{CPI}_t = c_o + \alpha \left(\ln \text{PPI}_t^{\text{Euro}} + \ln \text{NER}_t \right) + \beta \left(\ln W_t^{\text{NT}} - \ln \left(\text{VA}_t^{\text{NT}} / L_t^{\text{NT}} \right) \right) \\ &+ \text{seasonal factors} + \text{EC}_t \end{aligned}$

 $\begin{aligned} \pi_{t} &= c_{1} + \gamma \operatorname{EC}_{t-1} + \delta \, \pi_{t-1} + \zeta \, \Delta \ln \, \operatorname{NER}_{t-1} + \lambda \, \Delta \ln \, \operatorname{NER}_{t-2} + \mu \, y_{t-1}^{avg} + \xi \, \operatorname{IR}_{t-1} \\ &+ \rho \, \operatorname{admin \, price}_{t} + \sigma \, \operatorname{tax}_{t} + \operatorname{seasonal \, factors} + \varepsilon_{t} \end{aligned}$

The first equation captures the long-term pricing relationships on the markets of tradable and nontradable goods and services. Slovenia is a very small open economy with strong trade links to the EU. The equilibrium prices of tradables are therefore approximated as a function of Euro area producer prices, PPI_t^{Euro} , and nominal exchange rate of the tolar per euro, NER_t. In line with the theory of monopolistic competition, the prices of nontradables are set in proportion to nominal unit labor costs. As the second term in parentheses suggests, producers in the nontradable sector pass through any increase in nominal wages, W_t^{NT} , into their prices unless it is matched by an improvement in productivity (defined as real value added per one full-time equivalent worker, VA_t^{NT} / L_t^{NT}). The residual series, EC_t , reflects short-term deviations of prices from the long-term equilibrium.

The second equation models the short-term behavior of inflation. It is a reduced form relationship where quarter-on-quarter inflation, π_{i} , is a function of: its own lag, π_{i-1} ; quarter-on-quarter change in the exchange rate of the tolar per euro, Δ In NER; average output gap over four quarters, y^{avg} ; quarter-on-quarter change in the long-term nominal lending rate to enterprises, IR; and the contributions of changes in administered prices and indirect taxes to quarterly headline inflation. The "error correction" term, EC, incorporates long-term price trends into the short-term inflation dynamics: whenever the actual price level stays above the equilibrium level, EC will be positive and inflation will tend to be lower in future periods (this requires the coefficient γ to be negative). The lags in the exchange rate, interest rate, and output gap terms were determined on the basis of alternative specifications. Since the dependent variable is specified as quarter-on-quarter growth, the specification includes dummy variables to capture seasonal effects.

While the model does not explicitly incorporate rational expectations, its long-term structure enables the model to converge to various steady-state inflation levels. The equilibrium inflation rate is anchored by foreign prices and exchange rate for the tradable sector, and by wage growth minus productivity gains in the nontradable sector.

Estimation

The model was estimated by the ordinary least squares method using quarterly data for 1997Q1–2006Q4. The coefficient estimates are reported below, with the standard errors in parentheses.

 $\ln \text{CPI}_{t} = -7.551 \text{ c}_{0} + 0.203 (\ln \text{PPI}_{t}^{\text{Euro}} + \ln \text{NER}_{t}) + 0.833 (\ln W_{t}^{\text{NT}} - \ln (\text{VA}_{t}^{\text{NT}} / L_{t}^{\text{NT}}))$ (0.191)*** (0.107)* $(0.089)^{***}$ + 0.028 Q2dummy + 0.028 Q3dummy - 0.011 Q4dummy + EC (1a) $(0.007)^{***}$ $(0.007)^{***}$ $(0.006)^*$ Adjusted R-squared = 0.9936; Durbin-Watson statistic = 0.8108 $\pi_{t} = 1.021 c_{1} - 1.723 EC_{t-1} - 0.098 \pi_{t-1} + 0.243 \Delta \ln \text{NER}_{t-1} + 0.216 \Delta \ln \text{NER}_{t-2} + 2.170 y_{t-1}^{avg}$ $(0.229)^{***}$ (7.007) (0.137) $(0.081)^{***}$ $(0.097)^{**}$ $(0.771)^{***}$ -0.078 IR_{t-1} + 0.848 admin price_t + 0.570 tax_t - 0.458 Q2dummy - 0.761 Q3dummy (0.181)*** (0.261)* (0.068) $(0.248)^{***}$ $(0.223)^{***}$ -0.558 Q4dummy + ε_{t} (2a) $(0.247)^{**}$

Adjusted R-squared = 0.7769; Durbin-Watson statistic = 2.7150

*** denotes significance at the 1 percent level; ** denotes significance at the 5 percent level; and * denotes significance at the 10 percent level.

Most of the findings are consistent with a priori hypotheses and the magnitudes of the coefficients appear plausible. In the first equation, the nontradable sector dominates price developments, which is to be expected in an advanced economy with a high share of services in value added. In the second equation, the estimated coefficients confirm the comovement of inflation and economic activity over the business cycle (measured by the output gap), as well as the important role of the exchange rate in the inflation process. Exchange rate changes affect inflation with a lag of one to two quarters. Longer lags of exchange rate changes had insignificant coefficients and were, therefore, not included in the equation. The results also suggest considerable seasonality in inflation in Slovenia.

The coefficients on past inflation, interest rates on corporate lending, and the error correction term are not statistically significant. The insignificant coefficient on past inflation seems to suggest that inflation inertia and inflation expectations had weakened over time, especially as policies became more supportive of disinflation. As Bole and Mramor (2006) have noted, de-indexation of financial contracts, changes in the indexation formula for wages, and other modifications to wage agreements contributed to a decrease of inflation expectations. The insignificant coefficient on the interest rate variable suggests that the impact of convergence-related factors on inflation is mostly captured by the output gap variable. The insignificance of the error correction term may be because of the short sample period.

The BoS and IMAD have noted that European Union accession had a dampening effect on the prices of certain tradable goods (especially foodstuffs) on account of increased competition and elimination of import duties.¹⁰¹⁰ To test if European Union accession had a significant impact in reducing overall headline inflation, in an alternative specification (not reported) we included a dummy variable to distinguish periods with and without EU membership. The coefficient on the dummy variable had an expected negative sign but was not statistically significant. This may be because the effect of EU membership is likely captured by the exchange rate variable. Since Slovenia entered ERM II almost immediately after joining the EU, there is a strong correlation between EU membership and the change in the exchange rate regime.

Impulse responses

The impact of changes in the exogenous variables on the inflation path can be studied using the dynamic structure of the error correction model estimated above. Figure 8 shows the impulse response of inflation over time to:

- a 1 percent increase in the output gap that remains in effect for four quarters; and

- a permanent 1 percent step appreciation of the exchange rate.

¹⁰ BoS (2004), p. 8 and p. 11; and IMAD (2004), p. 49.



The specified increase in the output gap has a strong inflationary impact lasting for eight quarters. The increase in inflation would reach nearly 2 percent by the fifth quarter and gradually weaken thereafter. This finding validates the concerns of the IMF staff about the upside risks to inflation from a potential demand boom following Slovenia's EU membership and ERM II entry. That GDP growth remained below the growth rate of potential output during Slovenia's two-year stay in ERM II clearly facilitated the task of meeting the Maastricht inflation criterion. The pick up in inflation following euro adoption in 2007 reflected the emergence of a positive output gap in 2006 and its subsequent persistence.

An exchange rate shock has a relatively mild and short-lasting impact on inflation. A permanent 1 percent appreciation of the exchange rate would lead to a decrease in inflation of 0.24 percent in the second quarter and 0.19 percent in the third quarter, and have no impact thereafter. This confirms that the exchange rate tool could not have served as the only

lever for bringing down inflation to the Maastricht criterion level, and that complementary efforts from the government and social partners were necessary.

Conclusions

This paper has documented the importance of factors underlying the inflation process in Slovenia in the run-up to euro adoption. Mid-2001 marked a turning point in inflation developments. For a number of years prior to this date, inflation was relatively sticky. Increases in administered prices and indirect taxes exerted considerable upward pressure on prices. Even after discounting the impact of these factors, inflation remained persistent because of institutional rigidities and policy slippages. Indexation of wages kept up costpush pressures, and an increase in the pace of tolar depreciation fueled inflation. Additional impetus came from a positive output gap, in part associated with an easing of the fiscal stance and monetary conditions.

With EU accession approaching, Slovene policymakers turned to laying the ground for a smooth transition to ERM II and the eventual adoption of the euro. Emphasis was placed on policy coordination between the BoS, the government and the social partners. The pressure from higher international oil prices was partially mitigated through reductions in excise duties on fuel, and increases in nonfuel administered prices became subject to greater scrutiny and were restrained. An explicit social contract weakened the wage indexation formula and called for real wage increases lagging productivity gains. The measure was effective in lowering growth of labor costs because the parties to the contract did not deviate from its provisions.

Although the BoS considered its exchange rate policy to be inflation-neutral, the econometric exercise shows that the slowdown in the pace of depreciation did have a significant impact on disinflation within a short time horizon. The reluctance of the BoS to foster disinflation through a more aggressive exchange rate policy prior to ERM II entry, as advocated by IMF staff, can perhaps be defended on the ground that it was not necessary because there was slack in the economy.¹¹¹¹ As the econometric exercise confirms, output gap was a significant factor influencing the rate of inflation. Upon ERM II entry, primacy was given to exchange rate stability and exchange rate adjustment was no longer a policy option for disinflation. However, a negative output gap continued to persist during the two-year stay in ERM II and played a critical role in disinflation and facilitated meeting the Maastricht inflation criterion. Demand-side pressures were limited, with the spending boom that was anticipated following Slovenia's ERM II entry not materializing and with fiscal policy remaining disciplined.



¹¹ The degree of the economic slack, however, was not fully clear at the time.

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Chapter 3

MONETARY POLICY INSTRUMENTS IN THE PERIOD BEFORE THE ADOPTION OF THE EURO

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INTRODUCTION

Since gaining independence in October 1991 Slovenia has gone through various stages in the design and implementation of monetary and exchange rate policy due to different underlying macroeconomic and structural conditions. Therefore, in the transitional period, the Slovene economy experienced more than a decade's worth of real restructuring and institutional redesign.

The long-term goal of monetary policy was the restoration of sustainable and simultaneous internal and external equilibrium. A correct definition of the constraints to the adoption of a specific exchange rate regime was of critical importance if a policy mix for inflation stabilization was to be effective. During the transitional period, net capital inflows, relative prices of nontradables (especiallylabor market rigidities), and economic performance in other sectors (especially the fiscal stance) were the most important constraints for policymakers. Policymakers made adjustments whenever they judged that economic trends posed a threat to sustainable internal and external equilibrium.

The guiding principle of policymakers was to target money/interest rates and attempt to reduce the floating exchange rate's volatility. This basic exchange rate regime "philosophy" remained unchanged until mid-2004 when Slovenia joined the Exchange Rate Mechanism II (ERM II). However, the implementation modalities of the exchange rate regime and money control were changed several times. At least five major phases can be identified.

First, an "emergency" phase lasted from October 1991 to December 1992. During this period, characterized by liquidity overhang in the banking system, galloping inflation, and virtually negligible foreign exchange reserves, the Bank of Slovenia's (BoS) optimal response

was a pure floating exchange rate regime which effectively exogenized money supply.

Second, after regaining basic control over the economy and strengthening foreign exchange liquidity, policymakers had to start tackling the strong negative effects of sharply increasing net foreign financial inflows and microdistortions in the product and labor markets. Therefore, between 1993 and 1995, during a period known as the "managed floating/no capital controls" phase, they adopted a managed floating exchange rate regime and began to target the money supply.

Third, the contribution of net foreign financial inflows to the rapid increase of the net foreign assets of the BoS made controlling money considerably more costly and sterilization operations of the BoS less effective. This was the main reason why policymakers opted for the introduction of temporary capital controls to make the exchange rate and money supply/ interest rates independent at least over the short term. This occurred between 1995 and 1999 and was termed the "managed floating/direct capital controls" phase.

The next stage of the managed floating regime started with the removal of capital controls in mid-1999, when the association agreement between the EU and Slovenia called for a complete liberalization of capital flows. This gave rise to the question of having an appropriate monetary and exchange rate policy mix. The BoS decided to effectively target the real interest rate as monetary supply was no longer a predictable variable in the short term. Therefore the exchange rate had to play a crucial role in minimizing the volatility and magnitude of expected rate of return differentials caused by volatile capital flows. The adjusted policy approach was implemented in the 2000-June 2004 period when Slovenia entered ERM II. This could be termed the "tightly managed floating/real interest rate target" phase. The last stage of the process of euro adoption was membership in ERM II, which reduced the flexibility of monetary policy to adjusting nominal interest rates to the course of inflationary expectations and interest rates in the euro area. In so doing, the BoS could not freely adjust the dynamics of the exchange rates due to ERM II constraints on the volatility of a currency participating in this mechanism. During the ERM II phase, the economy was required to demonstrate its capacity for sustained nominal convergence without endogenous macrolevel imbalances (inflation, fiscal balance, debt level, long-term interest rates). This final period of economic policy management, which could be termed the "ERM II/nominal convergence" phase, lasted from July 2004 through December 2006.

In the remaining part of this chapter we analyze the 1999–2006 period based on criteria dealing with the structure of monetary policy instruments, the structural position of the money and foreign exchange markets, and the income position of both the BoS and commercial banks in the process of monetizing and sterilizing foreign exchange.

The landing and ERM II PERIOD (1999–2006)

The landing and ERM II period new monetary policy design

The introduction of a fully liberalized capital flows regime (see Figure 1) was not the only structural change at the start of the landing period. Other structural changes, most notably the introduction of the new value-added tax (VAT) and excise duties along with adjustments in their respective rates, resulted in supply pressure and increased the volatility of relative prices. The initial supply shocks were amplified by further adjustments in regulated prices mainly because of the need for a more balanced budgetary position in keeping with Maastricht criteria. Those required structural changes, mostly at the beginning of the period, triggered significant shocks to the dynamics of the economy and narrowed economic and monetary policies' margin to maneuver.



An important feature of those structural changes was that they were implemented four years in advance of EU accession. Therefore, policymakers were able to ensure that crucial areas of nominal performance (inflation, the fiscal stance, nominal interest rates, and exchange rate variability) were brought in line with EU targets prior to accession. In the landing period, as previously in the transition phase, macroeconomic policymakers adopted the principle of "no offsetting between disequilibria," that is, ensuring that equilibrium in one

sector would not be obtained by means of disequilibria in other sectors.¹ In an environment with differences in market structure (analyzed in Chapter I) between the tradable and nontradable sectors and with remaining structural/supply shocks, policymakers had to reach an optimal decision concerning the design of appropriate new monetary policy (see Figures 2 and 3)



Note: the period of policymaker-induced shocks is shaded - stars denote shocks: 1999/III VAT introduction and lifting capital controls; 2000/III model of gasoline prices changed and prices increased; 2001/I regulated prices and environmental taxes considerably adjusted-increased; 2002/I VAT rates increased. Source: Statistical Office of the Republic of Slovenia; Bole&Gaspari.

¹ See Bole and Mramor (2006)



Such conditions called for specific policy guidelines with a pivotal role for the real interest rate (as a new monetary policy target) in reducing the inflation of nontradables (as a new monetary policy goal/target), with support from the closed (risk premium adjusted) uncovered interest parity (UIP) rule.². This rule became a new operational target of the exchange rate policy in a situation of liberalized capital flows and potential arbitrage between domestic and foreign financial instruments. Ensuring UIP prevented interest-elastic capital flows from neutralizing the restrictiveness of monetary policy as expressed in the level of the targeted real interest rate.

The sequence of decisions need to operationalize this strategy is given in Figure 4. Based on estimated inflation expectations, the BoS would set a nominal interest rate on tolar-denominated instruments in line with the predetermined monetary policy stance. Since banks could offer residents foreign exchange instruments, the BoS had to equalize the expected (nominal) rates of return on tolar-denominated and foreign-exchangedenominated instruments to preserve instrumental consistency. The BoS then had to control the expected dynamics of the nominal exchange rate, which allowed for the closed UIP rule to be met (see Figure 4)

² The UIP conveys a simple relationship between the interest rate on an asset in one country's currency unit, the interest rate on a comparable asset in another country's currency and finally the expected rate of change in the sport exchange rate of the two currencies. For more information see Isard and others (1992):



A tightly managed exchange rate was therefore the only remaining instrument at the disposal of the BoS for preventing large-scale speculative financial inflows from abroad. The main concern of this specific policy framework was how to effectively stabilize nominal exchange rate dynamics in the foreign exchange market with a potential "hot potato" problem, that is, unwillingness of the banks to open their foreign exchange balance sheet positions.³

Monetary policy instrument mix in the landing and ERM II period

The monetary policy instrument mix consisted of five important elements:

- A cooperation agreement between the BoS and "participating" commercial banks;
- BoS commitment to fulfill closed (risk-adjusted) UIP;
- Outright and swap purchase/sale of foreign exchange; net monetization;
- Sterilization operations for the control of the monetary base; and
- Neutralization of nonmonetized financial inflows.

The cooperation agreement was based on the following conditions:

- *Nominal exchange rate intervention.* During an intervention period the BoS was able to determine nominal exchange rate dynamics (twice a week) and the banks had to purchase at least 90 percent of offered foreign exchange in the market. During a



³ See Bole (2003)

nonintervention period they were free to quote their bid/offer rates.

- An open and unlimited swap arrangement. The BoS was ready to purchase /sell any amount of foreign exchange from/to the banks in accordance with a seven-day repurchase/resale swap arrangement at the intervention exchange rate or the average market exchange rate.
- *Purchase/sale swap prices.* The BoS would take into account the fact that the purchase price was limited at the upper end by the BoS's 60-day tolar bill rate and the sale price could not be lower than the overnight deposit rate.
- *Outright purchase/sale of foreign exchange by the BoS*. Such an obligation was not made mandatory by the cooperation agreement though BoS took care of sporadic transactions with the banks, mostly during periods of intense net foreign exchange inflows.
- *Termination of the cooperation agreement.* The BoS committed itself to purchase bank swaps remaining when the agreement expired.
- Liquidity ladder rule. Participating banks had the benefit of calculating an integrated liquidity ratio (0–30 days, 0–180 days), that is, combining tolar and foreign exchange liquid assets to fulfill the required ratio (1.0). Nonparticipating banks had to calculate separate liquidity ratios for tolar and foreign exchange liquidity balance sheet positions.
- *Prudential provision*. Participating banks were required to assess foreign exchange risk according to capital adequacy requirements but not to make provisions for it. This solution was based on the assumption that those banks would not have been exposed to a "hot potato" problem and to the risk of unexpected nominal appreciation of the exchange rate.

Monetary policy was able to aim for a given real interest rate by influencing the dynamics of the exchange rate over the short term, which was feasible since the BoS had committed itself toward the purchase of any amount of foreign exchange surplus from the banks and the sale of any foreign exchange deficit to the banks. It was possible to stabilize the nominal exchange rate in the following ways:

- *Through direct "exchange rate signaling,*" in which case the BoS could intervene to determine the short-term path the nominal exchange rate would take, within a +/- 0.2 percent band for banks' market operations.
- An alternative approach was to use swap rates (banks' borrowing costs) to obtain shortterm tolar liquidity, as an indicator of anticipated nominal exchange rate dynamics. Margins for those rates were determined by the rates of the BoS's 60-day tolar bill and those for overnight deposits
- Accumulated long foreign exchange positions allowed for appropriate functioning of swap rates at the margin so as to compensate the banks through 60-day interest-bearing BoS tolar bills. The BoS occasionally executed outright purchase/sale transactions to neutralize potentially negative income effects on the banks in the event of strong short-term net financial inflows (e.g., the privatization of the pharmaceutical firm Lek via its sale to Novartis).
- *The cost of banks' borrowing abroad* was approximated by the main refinancing rate of the European Central Bank (ECB) adjusted for the market premium and was not meant to differ in any systematic way from domestic short-term investment opportunities as expressed by the interest rate on the BoS's 60-day tolar bills. Interest rates on this

sterilization instrument defined a minimum level of short-term tolar bank lending rates. Operationally speaking, banks' short-term foreign exchange lending rates represented a leading indicator of their short-term tolar lending rates, as arbitrage equalized the expected rates of return on domestic and foreign bank lending in foreign exchange.

- To realize the closed UIP rule, the BoS had to control the (expected) dynamics of the nominal exchange rate. The structure of the foreign exchange market determined the responsiveness of the banks to any excess supply of foreign exchange. The market's oligopolistic structure, dominated as it was by a single bank under constant "hot potato" pressure from smaller banks, could sustain a stable long foreign exchange position of the larger bank only if a certain number of crucial conditions were met. The BoS had to establish a transparent system to neutralize the exchange rate risk. The predictability of the course the exchange rate would take, coupled with appropriate prudential regulation, gave enough assurance to participating banks to prevent them from violating the cooperation agreement, thereby enhancing the power of the BoS to lead the market without any negative micro-level ramifications for the efficacy of the UIP rule.

Figures 5–17 illustrate how the mix of policy instruments functioned in the landing and ERM II periods. The intensity of exchange rate signaling (measured as a percentage of days in a quarter with active signaling) decreased during that period. It was reduced from constant "price intervention" at the outset of the new instrument's implementation in 2001Q2 to less than 10 percent of the time when the new operational system took effect after 2003Q1. That was also a period of nominal exchange rate stabilization (see Figure 5)



Note: exchange rate signaling was launched in 2001/II; the intensity of exchange rate signaling is presented as a percentage of days in a quarter with active signaling (left scale) Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; Bole&Gaspari.



Until the end of the pre-ERM II period in 2004Q2, there was an obvious relationship between the nominal exchange rate and the swap rate. This indicated the capacity of the BoS to control the course of the nominal exchange rate's depreciation in such a way as to sustain the perceived restrictiveness of the monetary policy (i.e., without unsustainable cost pressure on the participating commercial banks or losses in the BoS's income balance). A full implementation of a new instrument took place at the beginning of 2002, at which time the BoS began to calculate the swap (purchase) rate above the current dynamics of the nominal exchange rate. A swap rate, including a swap premium, thus indicated to the banks what to expect by way of nominal depreciation of the exchange rate without direct "price intervention" in the foreign exchange market. Based on information about the anticipated trajectory of the exchange rate and/or the indicated cost of financing (the swap rate) the banks could set their short-term tolar lending rates (see Figure 6).



Open and unlimited net purchase swap operations provided an appropriate insurance policy for the banks to participate fully in the cooperation agreement and follow the BoS exchange rate or swap rate signaling.



During the period of massive privatization-related net financial inflows after 2000, which cumulated to 23 percent of gross domestic product (GDP) by the end of 2006, the BoS cleared the foreign exchange market by cumulative net monetization of foreign exchange (via swap and outright purchase) of approximately 12 percent of GDP. Nonmonetized financial inflows were, additionally, wiped out by the BoS foreign exchange bills and commercial banks' deposits abroad (see Figures 7, 8, and 9) at the level of 11 percent of GDP. A combination of tolar and foreign exchange sterilization/neutralization instruments reduced the sterilization costs of the BoS and stabilized its net income.





measures", Bank of Slovenia; Bole&Gaspari.

Remaining pressure on the monetary policy stance was reduced by adequately structured management of both government debt and foreign exchange proceeds gained from privatization. The main difference from the previous period was that the government refocused its borrowing towards the domestic financial market. Moreover, the government did not use the proceeds from the partial sell-off of the Nova Ljubljanska Bank for repayment (or even prepayment) of the domestic public debt. Instead, it held them in the form of deposits with the BoS, as leverage for domestic debt restructuring. The government called in outstanding indexed bonds, and then offered new bonds with significantly lower interest rates. The banks would not have been prepared to shorten their long-term asset position. This is because they would find themselves in forced excessive short-term liquidity. As early as 2003, the majority of new bonds were offering fixed nominal interest rates, putting in place necessary initial market conditions for the establishment of a reference nominal long-term interest rate according to the Maastricht criteria.



Monetary policy stance and economic performance in the landing and ERM II periods

In line with prevailing macroeconomic and microeconomic fundamentals, the concept of money-based stabilization of inflation yielded a positive outcome. It prevented stabilization from distorting relative prices and permitted a restrictive monetary policy to restrain demand-pressure on nontradable sector prices. Moreover, micro-level stabilization of the dynamics of the nominal exchange rate allowed for an effective implementation of the closed UIP rule and, consequently, a reduction in the uncontrolled net influx of foreign capital. In the context of a small open economy with a still underdeveloped market structure and the European Union's requirement to deregulate capital flows, another policy mix, though it might have brought down inflation much more quickly, would not at the same time have preserved other macro-level balances. As the existence and sustainability of macroeconomic equilibria would be an advantage with regard to the adoption of the euro, it behooved policymakers to opt for an approach that allowed the economy to reach those equilibria with minimal negative side-effects in the shortest possible time frame.

Empirical evidence in the period confirmed the initial assumptions of the mix of policy instruments.





Source: "Bulletin", Bank of Slovenia; Bole&Gaspari.

First, the BoS proved to be efficient in stabilizing the real interest rate at a level in accordance with expected monetary policy restrictiveness throughout the period before entering ERM II. The real interest rate for short-term tolar bank credits was preserved at 4.5 percent . At the same time, the UIP level initially stabilized and then stayed around 1–1.5 percent (see Figure 10). Such a positive performance of the UIP (mostly a consequence of a still-present small risk premium and of the relatively small size of the domestic foreign exchange market), allowed for the then-restrictive monetary policy to be maintained in spite of the fact that the BoS needed to adjust its nominal interest rate to the ECB's refinancing rate.

Second, the implementation of a money-based stabilization approach brought down the variability of the UIP to almost zero without a corresponding drop in the variability of the real exchange rate. This is a clear indication that the BoS did not target the real exchange rate and that targeting the real interest rate while smoothing out the path of the nominal exchange rate in order to close the UIP worked well in practice (see Figure 11).



rate on a yearly level (in percentages);UIP uncovered interest party on a yearly level (in percentages); calculated as $100^{*}(1+n-1+n_{t})^{*}(1+rER)^{**4}$) where n=nominal tolar nterest rate, n_{t} = nominal forex interest rate, rER = quarterly rate of increase of exchange rate. Source: "Bulletin", Bank of Slovenia; Bole&Gaspari.

More precisely, the broad money supply remained within manageable limits and the monetary base even decreased as a percentage of GDP. After an initial acceleration in the growth rates, caused by the cash changeover into euro in the euro area at the end of 2001, the dynamics of the relationship between broad and base money either leveled off or reduced. Liberalization of the capital account, therefore, did not influence the monetary policy stance, as it would have if the approach of stabilizing inflation via the exchange rate had been used.

Third, the adopted concept of monetary and exchange rate policy caused inflation and the nominal exchange rate to stabilize uniformly in the period before entering ERM II. Inflation abated from 9 percent in 2004Q4 to 2.5 percent in 2005Q2 and volatility of the nominal exchange rate decreased considerably with full stabilization in June 2004. Economic performance during the ERM II period confirmed that the policy goal of "no offsetting between disequilibria" had been effectively reached and nominal exchange rate stability had been preserved without any noteworthy direct intervention of the central bank in the foreign exchange market (see Figures 12 and 13).



Note: quarterly growth rate of nominal exchange rate on a yearly level, CPI increase in quarter-overquarter in the previous year.

Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; Bole&Gaspari.





Note: price increases in quarter-over-quarter in the previous year. Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; Bole&Gaspari. The rise in prices of tradables (goods) and nontradables (services) prices decelerated simultaneously until mid-2005. A good coordination of macroeconomic and structural policies reduced structural rigidities and improved nontradable sector competition, which enhanced the process of relative price convergence and a sustainable reduction of inflation.

Monetary policy costs in the landing and ERM II period

In addition to other attributes, an efficient mix of policy instruments must have a positive effect on the BoS's income statement and must not allow commercial banks to arbitrage between tolar and foreign exchange lending instruments. Under normal circumstances, the BoS would try to clear the foreign exchange market by offering outright purchase transactions to absorb excess foreign exchange liquidity. From a simple cost standpoint, such a policy would pose an unsustainable burden on the BoS's income balance.

An instruments mix that combined exchange rate signaling (via swap rate determination) and short-term/seven-day swap repurchase transactions with the commercial banks made the sterilization costs of monetized foreign exchange inflows manageable. The positive income balance of the BoS exceeded 0.12 percent of GDP in all years after 2000. Interest revenues were between 0.75 percent and 1.30percent of GDP, whereas interest expenditures were between 0.37 percent and 1.12 percent of GDP.

Apart from an important stabilizing role of swap transactions on the income balance of the BoS, foreign exchange securities were also crucial for neutralizing nonmonetized financial inflows. The structure of revenues and expenditures shows the relative importance of foreign exchange securities for a sustained revenue increase, as they grew from around 0.5 percent of GDP in 2002 to more than 0.7 percent of GDP after 2003. In the same period, other revenues dropped substantially. With regard to expenditure, the prevailing costs were interest payments on tolar bills (the sterilization instrument), which reached a peak of almost 0.8 percent of GDP (see Figures 14 and 15).

There were two important policy incentives for the banks to channel their short-term foreign exchange surpluses into BoS foreign exchange bills. First, because of the accumulated quantity of foreign exchange, the BoS could earn better returns in the international capital markets which were then, according to policy decision, shared with the commercial banks and strengthened the income balance of the BoS. A positive side-effect of that policy decision was a reduction in the pressure of excess short-term foreign exchange inflows on the exchange rate. Second, the prudential policy of the BoS made it possible for banks to use foreign exchange bills as a secondary liquidity instrument in calculating their tolar liquidity ladder ratio. This, in turn, allowed them to adopt a more flexible stance in fulfilling their prescribed foreign exchange positions according to monetary policy measures. Net costs of swap operations, purchase, and sale did not cause arbitrage between banks' short-term tolar and foreign exchange lending instruments. Despite the fact that a liberalized capital account could potentially disrupt effective monetary policy, a mix of policy measures combining price and quantitative instruments (lending and borrowing) gave enough assurance for a sustainable positive income balance of the BoS. The banks were not stimulated to finance their domestic lending operations by short-term, speculative capital inflows. The only period of time when this opportunity was temporarily open was during the ERM II phase, though even then the BoSdid not experience any important pressure on exchange rate stability. Specifically, swap rates in that period remained positive, such that they at the very least preserved a neutral monetary policy stance. Consequently, a positive difference between the short-term foreign exchange rate and the tolar rate for BoS bills emerged but was neutralized by the remaining small risk premium and the relatively small size of the foreign exchange market (see Figures 16 and 17).



Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; Income statement of Bank of Slovenia; Bole&Gaspari.





Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; Income statement of Bank of Slovenia; Bole&Gaspari.



Figure 16: Swap opportunity effects on banks lending rates

Source: Statistical Office of the Republic of Slovenia; "Bulletin", Bank of Slovenia; Income statement of Bank of Slovenia; Bole&Gaspari.



Source: "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; Bole&Gaspari.

Therefore, it would be fair to say in conclusion that the opportunity costs of the selected policy mix were obviously lower than the positive "returns" of money-based inflation stabilization on sustained macroeconomic balances.

MAIN LESSONS LEARNED

The main strategic and implementation lessons learned in this policy experiment were:

- Prices of nontradables are an appropriate policy target in a small, open economy; see Clarida and others (2001).
- Microeconomic variables (factors) are an important determinant of foreign exchange demand and the exchange rate; see Rose (1994).
- Inflation was squeezed in a nondistortionary manner by controlling real interest rates and by mitigating the growth of regulated prices.
- In an open capital account environment, targeting real lending interest rates can be implemented by exchange rate policy closing risk-adjusted UIP.
- The importance of government assistance in sterilizing and mitigating regulated prices.
- The BoS's costs of controlling real interest rates are manageable.
- The monetary policy setup that allowed the UIP to be closed consisted of a sufficiently high accumulated stock of swap and exchange rate signaling.
- The accumulated stock of swaps in commercial banks' balance sheets diminished the volatility of the nominal exchange rate.
- Swap rates had to be lower than the risk premium to enable efficient closing of the UIP and to prevent arbitrage between foreign exchange and domestic currency

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instruments.

- Including off-balance swap positions in the maturity ladder would have diminished smaller banks' free-rider behavior (i.e., the "Hot Potato" problem) on the foreign exchange market.

Thus in the period before the adoption of the euro, the monetary goal was the restoration of sustainable and simultaneous internal and external equilibrium. Among the different policy mixes available, the BoS opted for targeting money and interest rates and reducing the volatility of floating exchange rates. Such a policy mix prevented the distortionary effects of stabilization of relative prices and allowed for appropriate monetary policy restrictiveness to restrain demand pressure on nontradable sector prices.



Note: interest rates on BS bills; interest rate on tolar bills adjusted for costs of swap. Source: "Bulletin", Bank of Slovenia; "Overview of policy measures", Bank of Slovenia; Bole&Gaspari.

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Chapter 4

FISCAL POLICY ADJUSTMENT AND COORDINATION OF MACROECONOMIC POLICIES

Dušan Mramor

Slovenia completed its transition to a market economy in two phases. Both were mainly characterized by gradualism, with macroeconomic stabilization being the priority of the first phase (the "macroeconomic stabilization" or "exogenous" phase lasting until 1996) and structural adjustments that of the second (the "structural adjustment" phase between 1996 and 2000). However, Slovenia needed two additional phases to enter the European Monetary Union (EMU). The bulk of macroeconomic structural and policy changes triggered by European Union (EU) accession requirements were launched in the second half of 1999 and in 2000, when streamlining the economy toward necessary nominal convergence indicators also began. Hence, the appellation "landing phase" has been applied to the period from 2000 to May 1, 2004 (the date on which Slovenia entered the EU), followed by entry into the European Exchange Rate Mechanism II (ERM II) two months later. This chapter will focus on fiscal policy during the "landing phase" and on the "intermediate phase," which covers the ERM II period. Specifically, this chapter will focus on fiscal policy and its coordination with monetary policy during this time.

In these periods Slovenia adopted a gradualist approach to transition and the "macroeconomic stability first—structural changes second" sequencing of macroeconomic targets. Moreover, Slovenia's macroeconomic strategy in all phases explicitly eschewed the path of allowing equilibrium in one segment to be achieved by causing or allowing disequilibrium in other segments (the principle of "no offsetting disequilibria").

At the start of the landing period, macroeconomic policy focused mostly on two segments of the economy: fiscal balance and market structure. With regard to market structure, in 1995 the nontradable sector's market structure was significantly less competitive than that of the tradable sector.² Structural adjustments after 1995 dealt predominantly with market

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¹ The Slovenian transition period and the first part of the landing phase are extensively covered in Mrak, Rojec, and Silva-Jáuregui (2004).

² See, for example, Bole (2002). Segments are defined using NACE classification of activities. The tradable sector includes manufacturing (D), while the nontradable sector includes agriculture and fishing; mining and quarrying; electricity; gas, steam, and water supply; and construction and market services (A to K except D). Market services include wholesale and retail trade; hotels and restaurants; transport and communications; financial intermediation; and real estate and business services (G to K).
distortions generated by the underdeveloped market in the nontradable sector. It was estimated that any exogenous shock to the relative prices of nontradables would depress the Slovenian gross domestic product (GDP) by over 30 percent more than the average GDP of all EU members and disproportionally increase other macroeconomic imbalances, such as inflation. This condition required specific monetary and fiscal policies with their adequate interplay as landing triggered a number of shocks. Fiscal balance and market structure were basic constraints (efficiency determinants) of the macroeconomic policy.

FISCAL STANCE, SHOCKS, AND POLICY

Fiscal stance at the start of the landing period

At the start of the landing period, policymakers found themselves faced with a deteriorating fiscal situation. After 1996, the fiscal balance slowly but stubbornly deteriorated until 2001, when general government spending and the deficit leveled off at 43 percent (up from 40 percent) and 1.4 percent of GDP, respectively.³

Two-thirds of the spending increase was caused by increases in the government wage bill and household transfers. After transition-oriented transfers ended in 1996,⁴ transfers to households began to increase steadily. Moreover, an increase in judges' salaries in the same year precipitated spillover wage pressure throughout the government sector.

With regard to revenue, due to EU accession commitments, revenue gained from customs duties began to decrease as early as 1996. Between 1995 and 2001, total revenue from customs duties declined from approximately 3 percent of GDP to a mere 1.2 percent. Higher taxes (such as the wage bill tax) and nontax revenue could only offer a partial compensation for this downturn in customs revenue coupled with increased government spending.

Landing shocks

Capital inflows

After mid-1999, the flow of capital between Slovenia and the rest of the world was deregulated. The Ministry of Finance was now limited to short-term nonmarket measures that could only be employed to counter short-term speculative capital movements.⁵

Gross and net capital inflows, predominantly private, accelerated considerably after capital controls were lifted. Increasing certainty as to Slovenia's EU entry, coupled with a better international credit rating, further encouraged foreign investors. By 2001 net yearly foreign financial inflows exceeded 8 percent of GDP (see Figure 9.2 in Bole and Mramor, 2006). The increase significantly increased upward pressure on the exchange rate and boosted loanable

³ According to the cash-flow-based national methodology in the IMF's Government Finance Statistics (GFS86).

⁴ Until 1996, the government used transfers to households to alleviate the initial effects of transition. In the peak years, the "transition impulse" to household transfers attained around 2 percent of GDP. See Bole (2000).

⁵ Urgent economic policy measures similar to those available to other EU countries, for example, the Netherlands.

funds and the money supply.

Upward pressure on the exchange rate had the potential to cause further distortion in the relative prices of tradables and nontradables, because the former were far more sensitive to the exchange rate than the latter.⁶ At the beginning of the landing period, relative prices were still significantly distorted in favor of the nontradable sector. Differences in relative prices between Slovenia and other countries were much higher than could be explained by differences in level of development or economic structure.⁷ Further increases in relative prices of nontradables due to appreciation of the exchange rate could seriously jeopardize sustainable economic growth after fixing the central parity of the exchange rate upon entry into ERM II.⁸

Tax system changes

The reform which did away with the preexisting cascading sales tax in 1999 and set in its place a Type II nonzero rate value-added tax (VAT) with excise taxes on oil products, tobacco, and alcoholic beverages, was not revenue-neutral. Normalized revenues accounted for approximately 14 percent of GDP, approximately 1 percent more than the previous sales tax. Moreover, the cascadity of the new taxes was not considerably lower, nor was the tax administration more effective, than what was in place under the old system. Nevertheless, the new tax revenue dynamics were much more volatile and procyclical than the previous sales tax revenue.

VAT tax rates were increased in 2002, while excise tax rates were increased several times after 2000. For all groups of products (gasoline, alcoholic beverages, tobacco), the benchmarks set in place by EU directives were met at the time of EU entry.

The previous sales tax taxed different groups of products at different rates; tax rates for services were, for example, much lower than tax rates for goods. The introduction of VAT therefore increased the prices of products with low sales tax rates, with no commensurate decrease in the prices of products with high rates. Price inflation, therefore, accelerated significantly at the end of 1999 and in 2000. ⁹ Since price increases induced by the VAT fully passed into wages via indexation (contrary to what had been agreed upon by the trade unions, employers, and government) higher inflation was protracted over a longer period.¹⁰ After the year 2000, subsequent increases of the VAT and excise rates gave additional supply push to inflation.

Budget pressures.

EU accession commitments had three major negative influences on the budget. The first was precipitated by a change in methodology. As stipulated by the Maastricht criteria,

⁶ See, for example, Bole (2003a).

⁷ For example, in 2002 relative prices of services in Slovenia had already attained 82 percent of the level in Austria, exceeding by far the level corresponding to the level of development and structure of services in Slovenia relative to Austria. See EDP (2003).

⁸ Portugal's stagnation after entering EMU was clear warning of the possible scale of effects of nonaligned relative prices.

⁹ This phenomenon of price increases is well known from observation of what occurred in other countries upon introduction of a VAT (see Tait, 1988).

¹⁰ Again, foreign episodes of VAT introduction confirm the same consequences of wage indexation. See, for example, the case of Norway in Tait (1988).

accrual-based methodology (ESA95) rather than a cash-flow approach (*GFS86*) was used to gauge the government's deficit and debt. This accounting change alone caused the government deficit of 1.3 percent of GDP in 2000 to be reassessed at 3.8 percent. Among the reasons were the full indexation of contracts (especially indexed tolar debt), a more inclusive list of entities comprising the general government, and the takeover of the outstanding debt owed by various government entities not defined as such according to *GFS86*.

Second, the required payments, both to and from the EU budget, had an extensive shock effect starting in 2004.¹¹ Although Slovenia had a positive net position with the EU budget in terms of commitment, it could draw funds from the EU budget only for programs other than those already existing and committed. Moreover these new programs needed to be cofinanced and, in some cases, additionality must have been proven. As a result of additionality and the mismatch between extant domestic spending needs (as determined by law and preexisting commitments) and the additional ones, government spending had to increase in order to prevent the loss of EU funds. Other requirements for disbursement of funds were, moreover, so exacting that the Slovene budget could, conceivably, have its funding from the EU budget actually withdrawn despite Slovenia having paid into the EU. It was estimated that without budget restructuring, the general government deficit would increase by 0.4 percent of the GDP in 2004 and by 0.6 percent per year from 2005 to 2007.¹² Restructuring preparations and implementation had to be put under way well before entry into the EU in order to allow the general government deficit to stay within the Maastricht criteria.

The third source of budgetary pressure was the decline in revenue from customs duties that resulted from EU accession. Between 2000 and 2004, they decreased by 0.9 percent of GDP. This negative effect, however, was partly mitigated by reducing investment incentives in the corporate income tax.

Increases of regulated prices

The prices that were still under direct (or indirect) control of the government saw two large increases—in the middle of 2000, and at the beginning of 2001. In 2000, the model for regulation of the price of oil products was changed; after 2000 any increase in world oil prices immediately affected the retail prices of gasoline. Policymakers could, therefore, mitigate short-term swings in oil prices only by changing the corresponding excise taxes.

The combined effect of changes in the tax system and increases in regulated prices (which, after 2002, were predominantly oil prices) gave rise to significant supply-side price pressure after 1999. Moreover, since supply shocks only boosted the prices of certain types of products (see Figure 2.1.5), relative price variability increased enormously as well (see, for example, Figure 9.3 in Bole and Mramor, 2006, where the Ball measure for asymmetric relative price variability is presented). ¹³ A less competitive market structure in the nontradable sector resulted in supply shocks with an additional strong effect on the asymmetric variability of relative prices and consequently increased inflation. High asymmetric relative price variability also made higher inflation more persistent, especially due to the presence of

¹¹ Parts of existing expenses (0.7 percent of GDP in 2004 and 1.2 percent in 2005) were redirected to EU budget.

¹² Program of restructuring and reduction of public expenditure (adjusted for the changes in revenues and in general government deficit); see Republic of Slovenia (2005).

¹³ See Ball and Mankiw (1995) and Cukierman (1979).

indexation.¹⁴ Before launching the VAT, inflation had fallen to under 5 percent on a month over month in previous year basis, but since regulated products and services combined comprise around 20 percent of the retail basket, these supply shocks pushed inflation to over 8 percent per year, as illustrated in Figure 2.1.5.

Other shocks

Several other structural changes, not formal requirements of EU accession, were made during the landing period. They had significant effects on the increased instability of particular segments of the economy and on the dynamics of variables related to nominal convergence criteria, particularly on the fiscal balance.

The most important shocks were household transfers and wage increases. At the beginning of the landing period, politically-driven, non-safety-net household transfers already exceeded peak year "transition" transfers of 2 percent of GDP. And, although most wage increases occurred after 1999 (see Figure 2.1.7) when the landing phase had already started, segmented but strong trade unions exerted pressure on the government to accede to important wage concessions well before 2000.

A significant but short-term effect was a shift in the schedule according to which domestic taxes on goods and services were collected. Until 2002, collection of these taxes did not coincide with the calendar year.¹⁵ In 2002 the corresponding tax collection period was shifted one month backward. As a result, that year's tax revenue dropped significantly and the fiscal deficit increased on a cash-flow basis.

Fiscal policy in the landing phase

In the landing period, inflation, fiscal balance, nominal interest rates, and exchange rate variability had to become priorities for policymakers. Necessary structural changes at the beginning of the landing period significantly influenced the macroeconomic environment while narrowing the space available to policymakers (especially monetary policymakers). Fiscal policy implementation had to be adjusted to reflect the new circumstances.

However, by making most of these changes four years before EU accession, policymakers had enough time to streamline performance areas so as to ensure that crucial nominal Maastricht criteria would be met by the time of actual entry. Moreover, they were still able to follow the underlying principle of "no offsetting between disequilibria" because the range of available policy measures, albeit somewhat reduced, was still quite extensive. Since the policy of enforced nominal convergence was therefore not needed, the period of stable and relatively high growth (and correspondingly low and decreasing unemployment) continued uninterrupted and the economy's potential for sustainable, long-term, high performance was strengthened.

Fiscal convergence

As previously stated, according to the ESA95 methodology, the general government deficit in 2000 was 3.8 percent of GDP, well above the 3 percent threshold. The expected

¹⁴ See, for example, Fischer (1981) or Ball and Mankiw (1995).

¹⁵ VAT for current fiscal year was collected in the period February (current year)-January (next year).

fiscal balance was even worse because of the future negative impact of EU membership (cofinancing and additionality) on the general government deficit.

In the landing period, the fiscal stance advanced in the direction of the Maastricht criteria. The deficit declined gradually to 2.3 percent of the GDP in 2004 (see Figure 2.1.6), due to cuts of several crucial expense items (see Figures 2.1.11, 2.1.12 and 2.1.13), as well as the effects of decreasing inflation and interest rates, along with de-indexation. The decrease was also due to the reduced debt financing of different general government entities and reduced exercise of debt guaranties by state-owned enterprises.

As Figures 2.1.11, 2.1.12, and 2.1.13 show, the stabilization of general government expenses was achieved by a gradual "grasp" of the pension reform adopted in 1999, which resulted in stabilization and even decline of the share of pensions in GDP. Moreover, public sector wage agreement caused a drop in the share of public sector wages in GDP in 2004, and already reduced current expenses for goods and services were further cut.¹⁶

In a manner similar to what happened in the case of price stabilization, the government organized operating procedures to control spending. At the Ministry of Finance a special separate spending "watch dog" system was put in place. Through this system the Ministry of Finance evaluated the impact on government spending of legislative proposals along with the impacts of all other actions not only of the various ministries, but of other governmental entities as well, insisting on a restrictive position. At the beginning of the intermediate period (beginning in October 2004) the Minister of Finance also availed himself of his legal power to halt some types of public spending in the last quarter of the 2004 fiscal year, thus reducing public sector spending when a drop in interest rates caused by entry into ERM II precipitated a significant increase in bank credit activity.

Fiscal policy in the intermediate phase

In the intermediate phase, fiscal performance further progressed towards the requirements set out by the Maastricht criteria. The deficit declined by 1.2 percent of GDP in 2006 (see Figure 2.1.6). As was the case during the landing period, the pension reform was reducing the share of pensions in GDP. The public sector wage formulas which had been agreed to for 2004 and 2005 were also applied in 2006, thereby reducing the share of public sector wages in GDP (see Figure 2.1.12). By contrast, the share of costs of goods and services in GDP slightly increased in the period between 2004 and 2006 (see Figure 2.1.11). The reduction in the deficit was the result of two additional factors. First, changes to the tax system adopted in 2004 had unexpectedly increased public revenues. Second, economic growth was higher than had been expected.

With a change in government the restrictiveness of fiscal policy was in this phase slowly diminishing. The tax system changes in 2005 and 2006 reduced personal taxation and, in a phasing out order, the payroll tax. Also, the changes in pension law reintroduced indexation of pensions to growth of wages, and transfers to local entities as well as investment outlays for road construction and some other budget items were increased. However, the long time lag of some fiscal policy changes (pensions, taxes) and high economic growth in 2006

¹⁶ By the end of 2004, the still increasing non-safety-net transfers to households and the still too low contributions of the pension fund to the health fund remained the most problematic items in the structure of general government spending.

enabled further decline in public balance deficit before entering EMU.

Had a restrictive policy been maintained, the general government deficit could have been greatly reduced and turned into a substantial surplus by 2007, curbing mounting inflation pressures in that year.

COORDINATION OF MACROECONOMIC POLICIES

Reaching nominal convergence (Maastricht) criteria would probably not have been possible without a sound monetary and fiscal policy. However, a well-designed coordination of both policies was essential for mitigating long- and short-term opportunity costs (in terms of slower real convergence) of enforced nominal convergence. In the landing period, fiscal policy was instrumental in achieving three macroeconomic goals.

Because of the supply-side nature of the price shocks, monetary policy alone was illequipped to curb cost-push inflation, despite its new focus on controlling domestic demand. Fiscal policy had to be brought to bear because without it, further relative price deterioration would occur and thereby reduce the potential for long-term growth, especially in view of the continuing wide-scale indexation of the economy. An extensive set of fiscal policy measures was designed and implemented to help curb inflation.

Huge net financial inflows after 1999 considerably increased available funds and therefore the potential, actual and opportunity costs of the increase in interest rates needed to wipe out an excessive money supply. The central bank would have faced considerable (possibly even insurmountable) sterilization costs when targeting appropriate real interest rates to manage domestic demand and, therefore, the prices of nontradables. Higher financial costs, higher real interest rates, and increased volatility in the financial market (specifically nominal interest and exchange rates) would be the most important opportunity costs. The change in fiscal policy orientation, focusing on repaying foreign debt while increasing domestic government debt prevented additional foreign capital inflows as well as mitigating the impact on interest rates of excess funds generated by increased private foreign inflows.

As has been previously mentioned, the fiscal balance faced considerable additional pressures in the landing period and after EU entry. Therefore, fiscal policy had to focus on streamlining and restructuring government spending to attempt to meet the Maastricht criteria for general government balance.

Since the general government debt at the start of the landing period was well below the Maastricht criteria of a maximum 60 percent of the GDP,¹⁷ the government's situation in this area was not dire.

Inflation rate convergence

De-indexation, lowering inflationary expectations, reducing supply-side shocks originating in increased taxes and regulated prices, and strict fiscal control were the most important government steps which minimized the macroeconomic opportunity costs of

¹⁷ It stabilized at a level slightly below 30 percent of GDP in 2004.

cutting cost-push inflation so as to meet the target benchmarks upon EU entry.

De-indexation

Due to hyperinflation in the late 1980s almost all contracts and public transfers were indexed to past inflation. The government undertook a process of de-indexation which consisted of a number of steps. In the first step in 2002, accounting standards were changed, abandoning the automatic indexation of equity and fixed assets. The second step was taken in the first half of 2003, when the formal indexation of financial instruments was abandoned with the encouragement of nominal interest rates and new contracts with public sector entities (with the exception of labor contracts) ceased to be indexed. In July 2003 the third step was concluded with an agreement with public sector labor unions that first converted the amount of wage indexation in 2003 (which had been agreed upon in 2002) into individual pension contributions to a newly created second pillar of a public pension plan. In addition, an agreement was reached to replace the existing indexation formula with a forward-looking one based on a weighted average of domestic inflation, EU inflation, and euro exchange rate depreciation for 2004 and 2005. Since this form of indexation was the only item contributing to a general increase in public sector wages and domestic inflation was projected to exceed EU inflation and exchange rate depreciation, this agreement entailed an actual reduction in public sector real wages. This agreement also indirectly (but substantially) reduced the indexation of pensions, since pension increases were indexed to an approximate average of wage increase and the consumer price index (CPI), with public sector wages constituting approximately one-third of the total wage bill. Wage restraint was further supported by the social agreement for 2004 and 2005 for the private sector, which limited increases of wages to one percentage point less than the increase in productivity. The fourth step was taken at the end of 2003 when indexation of social transfers (excluding pensions), based on the past year's CPI or wage increase, was replaced with the current year's projected increase. Furthermore, upon entry into ERM II, a partial de-indexation of social transfers was planned for the end of 2004, but was postponed to 2006 due to a change of government.

Mitigating inflationary expectations

The de-indexation process and wage agreements contributed to the decrease in inflationary expectations. However, the high volatility of world oil prices, the specific supply structure of a small number of oil distribution companies and the relatively high oil dependency of Slovenia make oil-prices an important factor in Slovenian inflationary expectations. Due to lack of oil market competition in Slovenia, the government regulated the retail market prices with a model that recalculated the prices of oil products every two weeks based on those weeks' average prices on the Mediterranean oil product exchange, with the addition of a fixed margin. Model prices are more volatile than retail market prices in EU countries having a highly competitive producer-oil distribution sector. High price volatility had an asymmetric influence on inflationary expectations in Slovenia, since expectations are more sensitive to large price increases than large price decreases. To dampen expectations of inflation, the government offset significant shocks to oil product prices by making countervailing changes in excise taxes on oil products beginning in early 2003. Changing the excise rates did not change either the trend of oil product prices or the total amount of tax collected. Rather, it closed the gap in the variability of these prices with other EU countries (coefficient of determination equal to 97.6 percent for the period June 2003–May 2004).

Furthermore, the government was very proactive in garnering public support by constantly explaining its inflation targets, the actions being taken to meet them, and the negative consequences of excessive inflation. By increasing public awareness, it not only reduced the expectations of inflation with a proactive stance, but also aroused public resistance to price increases, especially in the nontradable sector.

Reducing the volatility of relative prices

In addition to changes in the regulation of and excise tax on oil product prices, which significantly reduced their volatility after 2003, the government made substantial changes to the system by which other regulated prices were determined. The goal was predominantly to decrease the volatility of relative prices (which increases inflation).¹⁸ The goal was met by taking measures to increase annually average non-oil regulated prices at the rate of target CPI inflation, while the differences among individual price increases (sometimes substantial) were based mainly on cost analysis. Since 2003 the actual increases of these regulated prices have been even somewhat lower than targeted.

Since the criteria by which appropriate individual price changes were determined were not well developed, it was proposed that a number of benchmarking models for regulated industries be developed. Some were already finished and put into effect in 2004, while the majority still had yet to be developed. Also undertaken was an analysis (followed by action) of how to increase competition in certain regulated industries. However, in the intermediate phase these activities were not quite as intensive.

The rest of the nontradable sector prices, especially where the government had indirect or direct influence (i.e., through ownership) were also closely monitored and the government took action when unjustified price increases were identified.

Control of fiscal stance

Continuing strains on the fiscal balance were solved by 2002 through increases in VAT rates along with excise taxes (in excess of EU directives) resulting in the aforementioned supply shocks to prices as well as higher inflation. Therefore, a principle was adopted in 2003 (and included also in the social agreement) to the effect that the fiscal stance be strictly controlled so the government would not have to undertake any tax increases not mandated by EU directives. This was especially important in view of the pressure on the domestic budget imposed in 2004 by contributions to the EU budget.

After entering ERM II in June 2004, monetary policy was even more constrained in its efforts to curb inflation since it had to work toward a high degree of foreign exchange rate stability which, in turn, limited its ability to raise interest rates. This softened the central bank's control of domestic demand just as credits to domestic entities accelerated considerably.¹⁹ Therefore, from the inflation point of view, it was important that fiscal policy be restrictive, as only in this way could offsetting fiscal with price disequilibria be avoided.

¹⁸ See Ball and Mankiw (1995), Cukierman and Leiderman (1984), and Bole (2003b).

¹⁹ Credits to households, for example, accelerated to over 20 percent on month over month in previous year basis.

In the second half of 2004, an election year, special measures were taken that reduced government spending (excluding payments to the EU budget) and the budget deficit as a share of GDP. The intermediate phase saw a reduction in the fiscal policy's restrictiveness, causing inflation pressure with a time lag—shortly after entering EMU on January 1, 2007.

In the landing phase, the government also adjusted its operating procedures and communication with the public to facilitate the detection and prevention of possible new supply shocks to inflation generated by its own activities. Within the government and the Ministry of Finance, a special "inflation task force" was formed that analyzed all proposed legislation reforms from a point of view of impact on inflation. It evaluated both direct and indirect impact, such as the degree of curbing competition.

Convergence of nominal interest rates

As previously stated, monetary policy sterilized huge net foreign financial inflows. Sterilization could have caused higher real interest rates and, due to relatively high inflation, nominal interest rates even higher than those required by the Maastricht criteria.²⁰ To support the nominal convergence of interest rates to the EU's target zone, fiscal policies were coordinated with monetary policy, public sector debt management, and the management of the foreign exchange proceeds gained from privatization.

By switching from foreign to domestic debt instruments, fiscal policy accomplished three things. First, it supported the credibility of the domestic government securities market. Second, it ceased to contribute to net foreign financial inflows. Third, it reduced opportunity (sterilization) costs caused by those inflows, as it offered tolar-denominated securities that were much better aligned with investor preferences (i.e., with longer maturities) than the central bank could offer. In 2001–04, the government's outstanding foreign debt saw a systematic reduction from 2.7 billion euros to 2.3 billion euros, that is, from 14 percent to 9 percent of GDP (see Figure 2.1.8).

The government did not use the foreign exchange proceeds gained from privatization directly to repay the domestic debt, but rather held them as deposits with the central bank and used them as leverage for debt restructuring. The government was calling in outstanding indexed bonds, offering new bonds with significantly lower interest rates or cash. Due to a preexisting surplus of funds (caused by capital inflows), sterilized by short-term central bank bills (with fixed and lower interest rates), banks were not prepared to shorten their longer-term asset position. That would happen after the government bonds were called in and replaced with available shorter-term assets. Therefore, banks were prepared to invest in new long-term bonds with lower interest rates offered by the government. This was strengthened by knowledge that the government could use its privatization-related deposits with the central bank to repay the old bonds as an alternative to selling new bonds with inappropriately high interest rates. At the beginning of the process in 2002, the majority of new bonds were still indexed to inflation, but they offered real interest rates anywhere from 2.5 to 3 percentage points lower than the old bonds. In 2003, the majority of new bonds already offered fixed nominal interest rates, whereas the rest of the newly issued bonds were indexed to the euro exchange rate, which was expected to stabilize after EMU

²⁰ For example, in 2002 the average nominal ten-year government bond yield was around 9 percent (in 2000 even near 12 percent), while the Maastricht criteria was 6.9 percent.

entry. This was a clear sign that investors' long-term inflationary expectations as well as expectations regarding real interest rates were in line with the government's predictions. However, this convergence of expectations was not automatic. Rather, it only occurred after the government declared disinflation measures, began implementing them, and undertook an extensive suasion effort with the banks that reinforced the commitment to nominal convergence.²¹

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²¹ In this way fiscal policy significantly influenced nominal interest rates; in 2004 the average nominal ten-year government bond yield was already 4,36 percent, while the Maastricht criteria indicated 6,28 percent.

Chapter 5

PROGRAM FOR THE INTRODUCTION OF THE EURO

Andrej Rant

ENTRY INTO ERM II

The exchange rate mechanism (ERM II)¹ in the third stage of Economic and Monetary Union is a core arrangement to check the sustainability of economic convergence before adopting the euro. Therefore, it has a specific place within the Treaty's² convergence criteria. Its principles, objectives, and main features were elaborated upon in a special Resolution of the European Council in Amsterdam in June 1997.³ It was set up for the third stage of economic and monetary union after January 1, 1999 helping member states outside the euro area⁴ to receive treatment equal to that of those initially adopting the euro. The center of the mechanism is the euro. It is based on central rates of national currencies against the euro with relatively wide standard fluctuation bands (\pm 15 percent) around the central rate. On a case-by-case basis, narrower bands can be also agreed upon. At the agreed margins, the central rate is defended by the European Central Bank (ECB). Intervention of the ECB at the margins is in principle automatic unless a conflict with the ECB's primary objective arises.

In practical terms it is called ERM II, thus distinguishing it from the Exchange Rate Mechanism (ERM) in place within the European Monetary System (EMS) during the ninetiess, before euro introduction in 1999. ERM at that time was based on central parities between participating national currencies of EMS participants with fluctuations kept within ±2.25 percent, with the exception of Italian Iira, Spanish peseta, Portuguese escudo, and British pound, which were allowed to fluctuate by ±6 percent. In August 1993 these bands were widened to ±15 percent in order to counter speculative pressures. In 1996, all currencies moved back to their original fluctuation margins.

² Treaty establishing the European Community.

³ Resolution of the European Council on the establishment of an exchange rate mechanism in the third stage of economic and monetary union, Amsterdam, June 16, 1997, OJ C 236 2.8.2997.

⁴ Area within the EU, subject to single monetary policy and to the use of the euro as a common currency.

The mechanism includes also the possibility of coordinated intramarginal intervention. The operational details of the ECB's interventions are determined in the agreement between the ECB and national central banks of member states participating in the ERM II mechanism. The participation in the mechanism is voluntary. Three years after establishment of ERM II, in November 2000, the Report by the Council of finance ministers (ECOFIN) to the European Council⁵ in Nice embraced exchange rate aspects of EU enlargement, identifying three distinct stages for the full monetary integration of the 12 candidate countries that in 1998 began their accession negotiations: (i) a pre-accession stage, (ii) an accession stage (from accession stage specifically focused on the compatibility of different exchange rate regimes with the ERM II mechanism. In Athens in April 2003, ECOFIN and the ECB elaborated further upon the aspects of participation of future new member states in ERM II after their accession to the union. The Council issued a common statement which, inter alia, stipulated elements that new member states were expected to adhere to regarding their exchange rate policy after EU accession:⁶

- They would be able in principle to bring in with them their existing exchange rate regimes.
- Competitive devaluations would not be allowed.
- They would participate in the cooperation of economic policies (notably by virtue of Articles 99 and 104 of the Treaty and the Stability and Growth Pact) and would be expected to work towards real and nominal convergence.
- They would be expected to join the ERM II, although not necessarily immediately after accession, and eventually the euro.

The common statement warned against premature ERM II entry, stating that "in certain cases, staying outside the ERM II for some time may be useful in light of large and volatile capital flows, large fiscal imbalances, and/or risks of large economic shocks." Nonetheless, in principle, it left the decision regarding joining ERM II to the new member states, assuring equal treatment among new and current member states in the procedure through which agreement on central parity and on fluctuation bands had to be reached between euro area members, ERM II participating members, and the new entrant. The statement reiterated which specific exchange rate regimes were incompatible⁷ with ERM II and highlighted the case-by-case fashion with which applications to join it would be evaluated. The flexible aspect of the procedure was stressed: ministers and governors of the central banks of the member states not participating in ERM II were allowed to take part in the common procedure, but without having the right to vote.

Three years later, in March 2006 an agreement between the ECB and the national central banks of new member states was signed, laying down operating procedures for automatic intervention at upper and lower fluctuation bands in ERM II, very short-term financing, closer exchange rate cooperation, and monitoring the functioning of the mechanism.

⁵ Council at the level of prime ministers or heads of states.

⁶ Common Statement on acceding countries and ERM II, Athens, April 5, 2003.

⁷ The following were determined as incompatible: free floating (or managed float without a mutually agreed central rate), crawling pegs, and pegs against anchors other than the euro. Currency board arrangements had to be observed on a case-by-case basis, while unilateral »euroization« was declared not compatible with the Treaty.

The views of the EU-15 (i.e., the 15 EU member countries prior to 2004) on the participation of new member states in the ERM II mechanism represented a valuable basis on which the latter could deliberate the timing of their participation in the mechanism. The joint Program of the BoS and the Slovenian government for ERM II entry and adoption of the euro, adopted in November 2003, set forth a timetable for ERM II entry that reflected the Slovenian view on the dynamics of the process at that time. The timetable foresaw several steps in the process: (1) convergence of views about strategy at the national level, followed by (2) consultations at the EU level, (3) formal adherence and technical adjustment to the ERM II intervention mechanism by the date of EU entry as part of the EU accession process, and (4) ERM II entry by the end of 2004. The foreseen dates for ERM II entry reflected the wishes of the Slovenian authorities to obtain additional room for nominal convergence before being exposed fully to the monetary conditions of the euro area. This was expected to provide a more solid foundation for the exchange rate stability required during ERM II participation. The joint Program was accompanied by two annexes on joining the TARGET⁸ and on preparing for the euro changeover, reflecting the intention to enter theuro area in 2007. Two potential 12e-month periods for convergence assessment in this respect were identified: September 2005-/August 2006 and June 2005/May 2006, together with estimates of deadlines for convergence assessment.

The overwhelming concern of EU member states and candidate countries at the time was EU accession. ERM II entry and, in particular, euro adoption for candidate countries at the end of 2003 were seen as more distant events.⁹ After the adoption of the joint Program the most pressing task was therefore to prepare the old member states for the new steps that would be required. Correspondingly, the Program envisaged first to elicit a response to the intentions expressed. Based on this response, the timetable had to be adjusted. A number of visits and discussions with representatives of individual member states, the European Commission, and the ECB as well as within the Economic and Financial Committee (EFC)¹⁰ were organized.¹¹ During those discussions, old member states were made aware of the speed of the proposed next moves. They began to prepare operationally for implementation of the foreseen common procedure. The plans of other candidate countries were revealed as well. Country fiches were prepared by the Commission as well as by the ECB. Accordingly, Slovenia adjusted its timetable for ERM II entry to an earlier date. An important element spurring this acceleration was the recognition that enough time had to elapse for the

⁸ Trans-European Automated Real-Time Gross settlement Express Transfer. The TARGET system provides the execution and final settlement of cross-border payments in euros in each of the member states using euro as national currency within the same day. TARGET only processes euros. Participation in TARGET is obligatory for euro area member states. Real time gross settlement systems of non-euro-area member states may also be connected to TARGET, provided that they are able to process euro.

⁹ This indeed showed up during some discussions with officials of individual member states.

¹⁰ The EFC, , established by Article 114 of the Treaty (consolidated version) at the date of the euro introduction, with the tasks to deliver opinions on request or on its own initiative to the Council and to the Commission, to review the economic and financial situation of the member states and of the Community and to report regularly therefore to the Council and to the Commission, to contribute to the preparation of work of the Council and to carry out other advisory and preparatory tasks assigned to it by the Council and to examine at least once a year the situation regarding the movement of capital and the freedom of payments and report to the Commission and to the Council.

¹¹ During the discussions, Slovenian officials explained on several occasions exchange rate arrangements in force in Slovenia. A special document entitled »ERM II and Exchange Rate Arrangements in Slovenia« was prepared for and sent to the ECB by the Bank of Slovenia. The assessment, made by the ECB, found those arrangements to be fully compatible with the requirements of ERM II.

convergence report and related decisions, as well as that some technical preparations for euro changeover could take place only after adoption of a final decision on removing the derogation status¹² of the country. In this respect, the Greek example was relevant. If ERM II entry took place in later 2004, the 2007 target for euro area entry would be in jeopardy. Slovenia therefore shifted its intended ERM II entry from the end of 2004 to June 2004.

Slovenia was in the first wave of new member states to enter the ERM II mechanism. According to the EU positions, expressed in the 2003 Athens common statement, all new member states were allowed to participate in the procedure, although formally, the adoption of the joint policy statement and the decision on central rate and fluctuation bands around it was taken solely by euro area members, actual ERM II members, and the new entrant. The decision on ERM II entry was adopted on June 27, 2004 for three new member states: Slovenia, Estonia, and Lithuania. Slovenia entered ERM II with standard ± 15 percent fluctuation bands around central parity. Central parity for Slovenia was determined at 1 euro = 239,64 tolars, which was the current market exchange rate at the time.

As participation in the ERM II mechanism is one of the most important steps on the path to euro adoption, it is accompanied by a joint policy statement. Commitments expressed in the statement reflect the common assessment of the euro area members and ERM II participating states on policies that should be in place to preserve durable economic stability and to promote sustainable development over the course of further convergence. The main emphasis in the statement with regard to policy is on the role of fiscal policy in the euro area's monetary environment. The joint policy statement focused on the new policy mix supporting sustainable convergence needed for euro adoption:

- reinforced fiscal role in demand management;
- the importance of control over wage cost developments to maintain and improve competitiveness;
- the importance of prudential control to cope with different financial risks, thus restraining excessive credit growth; and
- development of competitive market structures by implementing structural reforms to strengthen domestic adjustment mechanisms.

The joint communiqué issued on Slovenia's entry into ERM II is given in the accompanying box.

¹² Member states that do not qualify for euro adoption are referred to in the Treaty as »Member States with derogation.« For those states the Articles of the Treaty addressing monetary policy in the euro area do not apply.

Brussels, 27 June 2004

EUROPEAN UNION

COMMUNIQUE

At the request of the Slovenian authorities, the ministers of the Euro area Member States of the European Union, the President of the European Central Bank and the ministers and the central bank governors of Denmark and Slovenia have decided, by mutual agreement, following a common procedure involving the European Commission and after consultation of the Economic and Financial Committee, to include the Slovenian tolar in the Exchange Rate Mechanism II (ERM II).

The central rate of the Slovenian tolar is set at 1 euro = 239,640 tolar.

The standard fluctuation band of plus or minus 15 percent will be observed around the central rate of tolar.

The agreement on participation of the tolar in ERM II is based on a firm commitment by the Slovenian authorities to continue to take the necessary measures to lower inflation in a sustainable way: these include most notably measures aimed at further liberalising administered prices and advancing further with de-indexation, in particular of the wage and certain social transfer setting mechanisms. Continued vigilance will be needed so that domestic cost developments, in particular wages, are in line with productivity growth. The authorities, together with the responsible EU bodies, will closely monitor macroeconomic developments. Fiscal policy will have to play a central role in controlling demand-induced inflationary pressures and financial supervision will assist in containing domestic credit growth. Structural reforms aimed at further enhancing the economy's flexibility and adaptability will be implemented in a timely fashion so as to strengthen domestic adjustment mechanisms and to maintain the overall competitiveness of the economy.

The compulsory intervention points in the mechanism will be communicated by the ECB and the Bank of Slovenia, in time for the opening of the foreign exchange markets on 28 June 2004.

EXIT FROM ERM II

The European Commission and the ECB are bound by the Treaty establishing the European Community to produce convergence reports every two years assessing the progress made by member states in fulfilling their obligations to achieve sustainable convergence relative to the criteria conditioning the adoption of the single currency. The Commission transmits findings and recommendations to the Council. The Council decides, acting by qualified majority, after consulting the European Parliament and discussing in Council the proposal of the Commission, whether the member state with derogation fulfills the necessary conditions for the adoption of the single currency. A convergence report may also be produced on the request of a member state. The first Regular Convergence Report incorporating new member states was issued in October 2004. The next Regular Report was foreseen for the autumn 2006, not assuring sufficient time to allow euro adoption at the beginning of 2007. As it became clear by the end of 2005 that Slovenia would fulfill all the necessary conditions for euro adoption, the timing of the procedure had to be discussed within the Euro area. Different options were in discussion, but at the end it was decided that a convergence report would be produced on request, leaving the date for Regular Report unaffected. The Convergence Report was published on May 16, 2006. The positive assessment of convergence in Slovenia opened the way for final political decisions on euro adoption. In order not to deviate formally from the two years participation rule in the ERM II mechanism, the final decision of the Council was scheduled for July 11, 2006.13

The exchange rate stability of Slovenian tolar during two years participation in ERM II was remarkable. In the entire period the tolar rate fluctuated within a very narrow range around the central parity. The foreign exchange arrangements used by the Bank of Slovenia were supportive to gradual nominal convergence of short term interest rates for tolar to those for euro and enabled smooth adjustment to monetary conditions in the euro area. The confirmation of initial central parity as the irrevocable exchange rate for euro conversion was a natural result of the approach used. As noted above, at the date of determination of the irrevocable fixed tolar exchange rate against the euro a joint communiqué was issued by the ECB and Bank of Slovenia (BoS), stating their commitment to monitor in the market the exchange rate of the tolar against the euro in the context of ERM II agreement. Until December 31, 2006, the euro was still foreign currency in Slovenia.

With euro banknotes and coins put in circulation in 2002, different alternative scenarios from the one used by the first wave of euro area members emerged. For accounting reasons, January 1 appeared to be the most appropriate date for any new euro adoption. This was confirmed in the discussions which preceded the amendments to the EU regulations governing euro adoption in new circumstances. Two more scenarios were also discussed in addition to the existing one featuring a transitional period. They were termed a "big bang" scenario and a "big bang with phasing out." Under the "big bang" scenario, the changeover date and the euro adoption date would coincide. Under the "big bang with phasing out" scenario, the big bang was attenuated by a phasing out period during which

¹³ On that day the ECOFIN Council, based on positive opinions of the European Parliament and European Council, revoked the derogation status of Slovenia and determined irrevocably fixed exchange rate of the Slovenian tolar against the euro at the rate of 1 euro = 239.64 tolars with effect from January 1, 2007. Slovenian experience served as a basis for determining the time required for procedures and decision making also for other new entrants to the euro area.

legal instruments in the new member state could continue to make reference to the national currency. The length of the phasing out period was agreed to be at most one year from the euro adoption date. In addition to these two new optional scenarios, the existing scenario with a transitional period was adjusted and kept available to any member state wishing to use it in the future. The maximum length of the transitional period was set at three years from the euro adoption date. By the end of 2005, Regulation 974/98 was adjusted, allowing the use of different scenarios at the choice of the member state. Slovenia opted for the big bang scenario, allowing for the introduction of euro together with the changeover of banknotes and coins.

Two types of operational issues emerged in this regard:

- legal and operational adjustment to the needs of implementation of the single monetary policy in the euro area, and
- preparations for the changeover.

The Bank of Slovenia Act was to be adjusted to the provisions of the Treaty already at the time of EU accession. But it retained some features that were not compatible with the rules required for participation in the process of implementing the single monetary policy. The Regular Convergence Report in 2004 identified incompatibilities in the fields of:

- institutional independence (uncertainty about possible government involvement in the management of foreign exchange reserves),
- personal independence (incompatibilities with the concept of serious misconduct in the ECB Statute; seniority of sanctions in the Corruption Prevention Act over sanctions in the Bank of Slovenia Act with respect to Governor's independence),
- legal integration of BoS into the euro area (insufficient recognition of ECB seniority in banknote issuance and distribution, in the implementation of monetary policy, and in international cooperation).

The incompatibilities were eliminated before the convergence report was published in May 2006. Some other changes were made to the Bank of Slovenia Act as well.¹⁴ Among those, two are worth mentioning:

- a reduction of the number of members of the Governing Board from nine to five (with phasing out period until 2009);
- limits for provisioning against financial risks, balancing the need for risk protection and the budgetary interest for participation in profit distribution¹⁵.

On the date of euro introduction the BoS was obliged to pay up the remaining share of its subscription to the ECB capital and to transfer to it the reserves according to its capital key share. Operational adjustments to enable the BoSto participate in the operations of the

¹⁴ An unexpected linguistic issue emerged in the final phase of the procedure of legal adjustment, with an attempt of the Slovenian Government to introduce Slovenian spelling of »Euro« in Bank of Slovenia Act. The attempt was quickly abandoned when it was realized that deviation from the European compromise on the spelling could jeopardize, on legal grounds, a positive convergence assessment for euro adoption

¹⁵ According to the Bank of Slovenia Act, 25% of the Bank of Slovenia's profit is transferred to the Republic of Slovenia. The size of the profit may be affected, among others, also by creation of provisions against different financial risks (exchange rate, interest rate, prices). The Act links the provision creation to the existing size of general and special reserves and taking into account that link limits it to 20% of the profit.

Eurosystem included among others entry into TARGET, aligning remuneration of required reserves with European rules, and establishing an adequate base of eligible collateral with the list of recognized counterparties for monetary operations and with appropriate discount rules. Technical infrastructure had to be adjusted to the needs of implementation of a single monetary policy and to assure information flow connected to it between the BoS and the ECB on a daily basis. The BoS entered TARGET relatively early, with the mediation of the German central bank. Other elements of operational adjustment included gradual unwinding of tolar monetary instruments. Timing was particularly important in this respect. Because of certain features of the BoS's foreign exchange intervention mechanism coupled with sterilization, a gradual approach was carefully designed and implemented in order not to flood the system with excess liquidity frozen in BoS bills. During the process of unwinding, discussions were also held about the appropriate size of the BoS's balance sheet and the risks of income generation under the conditions in the euro area, connected with the size of the nonmonetary portion of the balance sheet. Finally, in January 2006, the Board decided not to manage actively the changes in the balance sheet of the BoS. The banks were left to choose for themselves the appropriate time for unwinding their investments in BoS instruments, the ultimate date being determined by the final term structure of those instruments. This unwinding process lasted until April 2007.

Preparations for the changeover began immediately after ERM II entry. As a first step, careful reading of the existing documents related to the 2002 changeover was necessary to get a better grasp of the issues, the organizational approaches used, the structure of participants involved in the coordination process, and the support coming from the EU and the ECB. Best practices for coping with the problems that were sure to arise had to be identified, as did similarities with and differences from the 2002 changeover. One difference could be discerned at first glance: the scenario used was not the same. Since euro banknotes and coins already circulated elsewhere in Europe, a transitional period would have been too complicated and costly. Slovenia therefore opted for the big bang approach. The summer months of 2004 were devoted to pertinent analysis based on which a draft master plan for the introduction of the euro was jointly designed by the government and the BoS. The planning process continued after the election of a new government in the autumn of 2004. In February 2005, the national master plan for the introduction of the euro was formally adopted, confirming the national coordination body cochaired by the Ministry of Finance and the BoS. During the course of preparations, the plan was adjusted twice, in January and October 2006.

Key dates in the changeover process based on this master plan were the following: Frontloading of euro coins to banks September 1, 2006 Sale of euro coin starter kits to professional cash handlers December 11, 2006 Frontloading of euro banknotes to banks December 11, 2006 Subfrontloading of euro banknotes and coins to retailers December 11, 2006 Sale of euro coin starter kits to the public December 15, 2006 Account conversion and introduction of the euro banknotes and coins January 1, 2007 Last day on which tolar banknotes and coins were legal tender January 14, 2007 Free of charge conversion of tolar banknotes and coins until March 1, 2007 Deadline for exchange of tolar coins by BoS December 31, 2016 unlimited Deadline for exchange of tolar banknotes by BoS



COORDINATION OF ACTIVITIES

In technical terms, euro introduction is a complex, large-scale logistic project for an individual country, based on EU legislation. It involves a large number of decision-makers and implementers. Agreements for the minting of coins need to be concluded by the national authorities. Arrangements must be made to transport the coins from the mint to the national central bank, seeing as how frontloading and subfrontloading¹⁶ need to be in place. In the case of Slovenia, the design of the EU side of the coins had been changed and the EU had to render a timely decision. The Slovenian coins were therefore completely new ones in circulation, with a new national and EU side. At the EU level, the Commission has an important role in regulating and supervising practical and technical preparations made for the introduction of the euro. The ECB is involved in assuring prompt delivery of banknotes and establishing conditions for full integration of the national central bank in the business activities of the European System of Central Banks. Moreover, in cooperation with the appropriate institutions in the member state, both institutions develop a communication strategy for preparing the general public for the new currency.

During the third stage of EMU, the Commission established a Public Administration Network (PAN) of central banks and finance ministries to deal with the practicalities of euro introduction. After the EU's enlargement, this network was reactivated for new euro entrants under the name of PAN II. PAN II serves as a network for sharing experience and best practices among member states preparing for euro adoption. PAN II is also a forum in which the Commission can monitor the progress in practical preparations being made by Euro area aspirants. During the changeover preparations in Slovenia, special attention was given to the adjustment of European legislation to changed circumstances, to timely preparation of the national legal framework for euro adoption, to the level of preparations in the banking sector, and to consumer protection. The latter especially represented a challenge given the fact that the general public's perception of price increases during the 2002 euro adoption exceeded the statistical evidence. To make the general public aware of issues important in euro adoption, the DIR_COM group (Directors of Communication on the Euro) was created to coordinate public relations activities.

The ECB established an internal task force, EURECO, to coordinate and monitor the preparations undertaken in each business area of the bank. This task force regularly reported, based on a detailed checklist of activities, on progress made during preparations. The BoS and the ECB undertook joint communication activities and distributed a joint brochure with key information about the changeover and the security characteristics of euro banknotes. Along with the brochure, the BoS also distributed a simple euro-calculator to all households so that individuals could quickly convert prices in tolars into euros.

At the national level, coordination was assured by the establishment of the Joint National Coordination Committee, cochaired by the representatives of the BoS and the Ministry of Finance. The Committee included, in addition to these two institutions, the Ministry of Economy, financial regulators, associations from the financial market, industry groups,

^{16 »}Frontloading« is the term used for delivery of euro banknotes and coins ahead of euro introduction from the future Eurosystem national central bank to the banks in the territory under its authority; »subfrontloading« is the term used for delivery of euro banknotes and coins ahead of euro introduction from the banks under the authority of the future Eurosystem national central bank to retailers in the territory of the future Eurosystem member state.

civil society representatives, and other institutions of the financial market. As part of the distribution of tasks, the BoS was responsible for preparation of the banking system. The responsibility for preparing the capital market, insurance sector, and public administration fell to the Ministry of Finance, whereas the Ministry of Economy was to see to the corporate sector and consumers needs. The Slovenian Consumer Association played an important role in monitoring prices during preparations and the changeover itself. The master plan for the euro changeover, adopted in January 2005, concentrated on the legal framework and standards of good practice, comparing the Commission recommendations with what was found to actually be the case for Slovenia. It was updated twice, with provisions made to include what changes had occurred in these two fields while preparations were being made, with a view toward introducing elements of a more general nature in sectoral preparations, especially as far as payments, capital market, and accounting issues were concerned. Indeed, the Commission once again saw fit to update the recommendations in light of the new experiences gained during the euro adoption in Slovenia.

A public communication campaign was an important part of the coordinated activities, which were managed by a joint plan formulated by the government and the BoS. The plan spanned the period of 2005 to 2007 and introduced various phases based on key dates and associated activities during preparations, such as planning and dual price display, convergence assessment, abrogation decisions, final preparations for the changeover, and the changeover itself. Goals, important messages, social groups of particular interest, partners of the campaign, and the nature of the communication tools to be used were all determined during the formulation of this strategy. A strategic partnership agreement was signed by the Commission and the Slovenian government in November 2005, defining the exact manner of cooperation, based on the joint communication strategy.

Reporting was organized at both sectoral and national levels. At the sectoral level, project managers reported to their respective boards and regulators on a monthly basis. Regulators reported monthly to their respective boards and/or ministries and to two national cochairs. At the national level, national cochairs reported in real time to their superiors, the Governor of the BoS and the Minister of Finance. They also prepared their reports for the government not only at the time of the convergence assessment, but also after the conclusion of end-to-end tests and finally after a successful changeover. The respective committees of the Parliament also jointly discussed an interim report at the publication of the convergence report in May 2006.

Bilateral discussions with management of larger banks (as well as a private Internet site opened by the BoS) allowed extra cross-checking over and above the regular monthly reporting and on-site inspections. The Internet site relayed a number of technical questions received from individual banks, and answered them. Those answers were summarized in 27 opinions, released in the period between May 2005 and December 2006, accessible to all banks, not only to those who put questions. Questions mainly dealt with double pricing, the display of double statements, the listing of currency exchange rates, accounting, bookkeeping, statistical reporting, cash handling, payment systems, and various other forms of reporting.

Among the issues tackled in the technical preparations were conversion-related issues (e.g., accountancy, information technology and other technical support, taxation, pension and social contribution, contracts), payments (e.g., acceptance of orders issued before and falling due after the changeover, payment processing during the changeover, TARGET participation, advanced payments of pensions in tolars in December), euro cash distribution (e.g., national coins, frontloading and subfrontloading, starter kits for cashiers and citizens, changeover distribution channels, reporting), counterfeits (e.g., instructions for professionals and general public), dual display (prices, statements), end-to-end testing, and the communication campaign.

Discussion about national legal statutes was an important part of the coordination process. This discussion began early on and lead to a special law on euro adoption, treating the main issues of the problem of preparations whose responsibility fell to the Slovenian state. Six other laws also had to be adjusted. Dual price display was introduced as obligatory by special law, covering the period from March 1, 2006 to June 30, 2007. The application of the law was supported by fair pricing agreements from the public sector, retailers, and the Price Watch Scheme of the Consumer Association.

Deloitte, hired by the Commission, has examined in detail the structure of coordination and activities that were undertaken to prepare for the changeover. Deloitte issued a review of the Slovenian changeover to the euro in its final report in August 2007¹⁷.

As stated in the Deloitte Report "the introduction of the euro in Slovenia on January 1st, 2007 is of particular interest to the European Commission because it was the first occasion on which euro banknotes and coins have been introduced by a single country in isolation from any others, and Slovenia was the first country in which the euro was introduced as book money and as cash on the same date without any transitional period." Taking that into account particular attention in the coordination process was focused on the need for:

- appropriate choice of the changeover scenario,
- legal certainty in relation to issues that fall under national competency,
- assuring early start of preparations,
- choosing an appropriate length of dual circulation period,
- assuring timely distribution of euro banknotes and coins to banks and retailers,
- combating inflation perceptions in relation to euro introduction¹⁸.

The changeover went through smoothly and without problems. It was monitored on a daily basis by the ECB and the Commission, supported by the BoS. A Euro conference on January 15 in Ljubljana, together with celebrations organized by the Slovenian government, concluded the successful entry in the euro area of the first new member state after the EU accession in 2004. The changeover was completed according to the plan and on January 16, 2007 the ECB issued a press release qualifying it as highly successful, emphasizing in particular the precise planning and good coordination between the BoS and the Slovenian government. The experience of Slovenia was a valuable contribution in updating best practices, serving newer entrants to the euro area in designing their preparatory steps.

¹⁷ See http://ec.europa.eu/economy_finance/publications/publication12540_en.pdf

¹⁸ The impact of euro introduction on inflation was estimated by the Slovenian authorities at 0.3 p.p.

Chapter 6

CASH CHANGEOVER EXERCISE

Božo Jašovič

SETTING UP THE EURO CASH PROJECT

The Bank of Slovenia (BoS) started preparations for the euro cash changeover well ahead of the actual changeover date. The Euro Cash Project team was formed in early spring of 2004 with the purpose of monitoring preparatory activities for the currency changeovers either carried out or initiated by the BoS. The essential activities (which were planned to be completed well before the changeover's actual date) included the selection of euro coins' national motif, procurement of euro banknotes and coins, frontloading and subfrontloading the Euro (see definitions below), withdrawal of tolars from circulation and their destruction, educating the public on how to recognize authentic euro banknotes so as to prevent counterfeit, and so on. The project team adopted a comprehensive plan in which all activities necessary for the euro changeover were listed in the greatest possible detail, broken down by the main segments of the project, the final date of completion, and responsible parties. The attention devoted to setting the program in place in the early stages of its execution paid off handsomely, inasmuch as it later furnished the project team (which met only as needed) with the resources and wherewithal to effectively plan and monitor such activities as were necessary. Such an approach was highly appreciated by European Central Bank representatives and other observers of changeover preparations (e.g., a representative of the Dutch central bank who was invited in mid-2006 for an ad hoc assessment of the quality of the preparations for the changeover).

A key element of the euro changeover plan was close cooperation with banks and their cash handling businesses. Several meetings with the banks were organized from the outset of the project for disseminating as much relevant information and experience as possible from

the previous euro changeover at the end of 2001. But the most credit for the smoothness of the changeover was attributed to the idea of conducting simulation exercises with banks. The plan was to gain some practical experience (which would influence logistical planning) by simulation of different changeover scenarios. A survey conducted of the banks three months after adoption of the euro found that the banks were highly appreciative of the exercises.

SUPPLY OF EURO BANKNOTES AND COINS

To procure the estimated quantity of euro banknotes for the cash changeover, Slovenia used what is termed a "borrowing model." The BoS borrowed from the Eurosystem logistical stock a total of 94.5 million euro banknotes with a nominal value of EUR 2,175 million to cover the estimated national demand for Euro banknotes until the end of 2007. For geographical and logistical reasons the Austrian central bank was responsible for the physical delivery on behalf of the Eurosystem. There were our air freight banknote shipments with an overall weight of 75.9 tons between November 7 and 16, 2006. The borrowing model envisaged that the BoS would pay back an equivalent of the borrowed banknotes within the first 12 months (in case of Slovenia 2008) of euro banknote production following accession to the euro area.

The first step toward the procurement of euro coins was the selection of motifs for the Slovenian national side of the coins. The process started in early 2004 and was carried out in two stages: in the first stage, a public invitation was announced in newspapers to propose the motifs, while in the second stage—on the basis of the most frequent proposals from the first stage—the government selected the final motifs to be used on the coins. In the final phase, the BoS invited professional designers in a restricted tender to submit their designs for the selected motifs. A special committee under the auspices of the BoS selected the winning bidder whose designs were ultimately— after the final confirmation by the government used on the national side of Slovenian euro coins. Slovenia was the first country to use the new common sides of euro coins and late confirmation of the final design by the European Commission (formally in early September 2006) contributed to a very tight schedule for the coin deliveries. At first glance it appeared that delays would cause problems for banks and their cash-handling departments but this was later rectified later. It should, however, be noted that the processes of design selection for the national side, along with minting and coin production are quite time consuming and delays would have had a more significant logistical impact had Slovenia been a larger country.

The production of euro coins with a Slovenian national side was contracted by the BoS via public tender to the Mint of Finland, which produced 296.3 million euro coins with a face value of EUR 103.9 million. Minting started on July 12, 2006. There were 14 shipments, with an overall weight of 1,465 tons, which followed in weekly intervals. The first arrived at the Slovenian euro coin storage facility in Logatec on September 4, 2006 and the last reached Slovenia on December.

Frontloading and Subfrontloading

Timely frontloading (in advance supply of coins and notes by central bank to commercial banks) and subfrontloading (in advance supply of coins and notes to businesses (retailers) by

commercial banks) of euro banknotes and coins was needed to make sure that enough cash was available at banks' counters and to facilitate necessary cash distribution to target groups like retailers and other cash-dependent industries. Long enough lead times for frontloading are a precondition for a successful overall operation since they provide against certain contingencies (such as bad weather) which could otherwise critically delay the logistics. Accordingly, the Bank of Slovenia started frontloading euro coins in late September, while frontloading of euro banknotes started on December 11, 2006. By the end of December, 772 million euro banknotes and 60 million euro coins had been frontloaded to bank vaults. Approximately 47 percent of the frontloaded coins had been prepared as "starter kits:" 150,000 starter kits for retailers, each worth EUR 201; 450,000 starter kits for the public, each worth EUR 12.52 ; and 100,000 coin sets for collectors, each worth EUR 3.88 but sold with a surcharge.

Banks started supplying retailers and other parties with euro coins on December 1, 2006, and euro banknotes on December 11, 2006. In all, Slovenian businesses were subfrontloaded from banks with EUR 10 million in euro banknotes and EUR 16 million in coins of which EUR 7 million were retail starter kits. At first sight, the very low volume of cash subfrontloaded by the banks to businesses took the central bank by surprise but, after an investigation into the matter, it was found that banks had made flexible arrangements with their clients to provide additional quantities of cash on short notice if the need arose. The main reason for such arrangements stemmed from the fact that smaller businesses, in particular, did not want to take on the security risk of holding an unnecessarily large volume of cash ahead of the changeover date.

	Frontloaded or sold		% of Tolar circulation
	PCS	EUR	%
Banknotes	41.516.400	771.961.500	87
Coins	133.142.100	48.543.440	5
Public starter kits	432.737	5.417.867	1
Retail starter kits	36.749	7.386.549	1
Collectors' sets	90.000	349.200	0
Total	175.217.986	833.658.556	94

Table 1. Frontloading of euro banknotes and coins

The sale of euro coin starter kits to the public started on December 15, 2006 and by the end of the month some 85 percent of the 450,000 starter kits had been sold. To cope with the rush the banks themselves prepared some 47,000 additional starter kits for the public. By the end of December 2006 banks ran out of the collector coin sets, which were in great demand by domestic citizens and the international public.

In hindsight, retail starter kits were of little use to larger Slovenian retailers. Although they were involved in the kit's creation, it seems that they were consulted too early (spring 2006) to be sufficiently advanced in their planning to give thoughtful feedback. At first, retailers placed orders with their local banks but the orders were later canceled and replaced with tailor-made kits. Evidently a "one-size-fits-all" approach to the design of the kits was inappropriate, due to significant differences among retailers regarding the average value

of transactions, payment methods, cash-handling protocols, and so on. Small businesses didn't want to invest larger amounts of money in retail starter kits, they rather used smaller holdings of cash for the first changeover days in anticipation that later on they could procure additional amounts at banks' branches. In addition stocking up of larger amounts would expose them to the risk of robbery.

Frontloaded and subfrontloaded amounts of euro cash were subject to a deferred debiting model which means that the banks paid for the amounts frontloaded in three equal installments, of which the last one fell due at the end of February 2007. This mechanism was devised in order to establish incentives for banks to be frontloaded. In addition, the banks could use the deferred debiting model for their customers. As part of the arrangements they made with customers, they were allowed to require collateral for the subfrontloaded amounts, although they were not to charge interest on the amount lent.

Smoothness of the Cash Changeover

The changeover progressed efficiently and without any major impediments in the first week of 2007. The smoothness of the transition from tolar to euro circulation was by all means a result of thorough preparations and effective governance of the overall project, which kept the process well on track in the first days of introduction of new currency. Fiftytwo bank branches throughout the country and the counter at the BoS were open on January 1 and 2 (both public holidays) to convert tolars into euros and to serve as a fallback solution in case the ATM network failed. An important contributing factor in the achieved efficiency of the cash changeover was the quick conversion of the ATMs, a result of comprehensive and detailed advance planning. The process was repeated in several rounds with the banks during 2006 in order to coordinate the activities of a limited number of teams that could convert every ATM in use at the time. The goal was to convert all publicly accessible ATMs on the first day of the euro's introduction. ATMs dispensed tolar banknotes until 9.00 p.m. on December 31, 2006 when the entire network was shut down for three hours to introduce necessary software adjustments. A few minutes after midnight on January 1, 2007, the network was gradually activated when the first ATMs started dispensing EUR 10 and EUR 20 banknotes. A list of operational ATMs was regularly updated during the day and was available to the public until the entire network had been put back on normal track. The first four days of the year showed increased transactions on ATMs (including consultations to check the completion of the account conversion), compared with the same period in 2006 but this did not have any impact on the continuity of the ATM network's operation.





The most convincing piece of evidence regarding the rapidity of the cash changeover is the fact that at the end of the first day of the euro's introduction, the value of the euro banknotes in circulation was higher than that of tolars in circulation, an occurrence that stands in contrast to what happened in the first wave of changeovers in 2002. It should be noted that this progress reflects only banknotes and coins which were put in circulation by the BoS. Given that a number of banks sold large amounts of euro currency to customers in advance of the cash changeover, one could hypothesize that the total figures would be even higher. At the end of the two-week-long dual circulation period, the euro had fully replaced the tolar as sole legal tender. It was, at this point, already obvious that the amount of euros put in circulation by the BoS had been much lower than anticipated. In another words, the BoS, together with the European Central Bank (ECB), overshot the cash requirement in Slovenia by an estimated EUR 2.3 billion. In hindsight, much less cash could have been procured from the Eurosystem. But the authorities had feared, more than anything else, being caught short. In a country with a high degree of use of foreign currency ("euroization," in Slovenia's case) it is very difficult to estimate accurately the cash requirement for the changeover. Large amounts of euro currency already existed in the country well before the changeover. Slovenian citizens had traditionally used euro cash for saving purposes and had kept it under their proverbial mattresses. In addition to this, many households kept euro cash balances for occasional trips to neighboring countries. It was estimated by the BoS that as much as EUR 400-600 million entered into circulation from both sources, which explains, in part, the lower-than-expected demand for euro cash after the changeover date. The second reason for the lower demand for euro cash is related to a decision on the part of Slovenian banks to begin selling euro currency in December 2006 at the conversion rate. According to ECB rules it is not possible to use frontloaded banknotes and coins for these purposes so the banks had to purchase needed euro amounts from Austrian banks as foreign exchange. It is estimated that approximately EUR 100-150 million was sold to bank customers in this way, again helping to explain the relatively low demand for euro cash after the changeover.



Figure 2: Tolar and euro cash in circulation after January 1 2007

In accordance with the recommendations of the ECB and the Commission on protecting the Euro against counterfeiting, the National Counterfeit Center was set up at the BoSin 2004 and a program of educational seminars and workshops was implemented to train cashiers and other professional handlers of euro banknotes and coins. In 2005 the National Counterfeit Center prepared a training program and teaching and test materials. The BoS issued 2,000 copiesin CD-ROM format and delivered to participants in the seminars. The material included texts presenting the history of counterfeiting, what a user is obligated to do should a counterfeit be detected, Slovenia's international obligations in the field of detecting and preventing counterfeiting, and a description of the powers and responsibilities of institutions and other bodies in combating counterfeiting.

In 2005 and 2006 a total of 204 workshops and seminars, attended by more than 4,130 participants, were organized. Although the incidence of counterfeiting rose somewhat in the first half of 2007, compared with previous periods when tolars were in circulation, it was still sufficiently low to not require increased attention. One can therefore conclude that extensive training contributed to a heightened understanding of the issue of counterfeiting and increased the ability to recognize counterfeits (which were mainly detected bytellers and cashiers).

Backflow of tolar banknotes and coins had already started prior to January 2007. This was the result of actions taken by some commercial banks which decided to allow the conversion of tolars into euros without charging the exchange commission and using the conversion ratio. After changeover day, banks were encouraged to withdraw tolars from circulation as they were immediately credited for the amount of withdrawn tolars, whereas on the other side for the frontloaded amounts payment was deferred. Backflow of tolars did not cause any logistical problems as the BoSorganized transport for the larger consignments of national currency.

The introduction of the euro was accompanied by a large-scale public campaign, planned and coordinated by the government and the BoS. The campaign aimed to inform the public of the appearance and security features of euro banknotes and coins, as well as to educate them about the changeover procedures. In mid-November a joint publication of the ECB and the BoS was issued and distributed to households highlighting the security features of euro banknotes and setting out an overview of changeover procedures. A eurocalculator was supplied along with the publication. Another publication was distributed to households in December 2006 setting out the last round of information just before the changeover. An important part of the publicity campaign was press conferences with both the Governor of the BoSand the Minister of Finance who explained to the media the most important information regarding the progress of the changeover and occasionally shared statistical data. The success of the publicity campaign can be judged by the fact that 91 percent of respondents to the "Survey among the general population on the introduction of the euro in Slovenia" (The Gallup Organization, May 2007), stated that they felt wellinformed on the euro. When asked where they got their information about the euro, they ranked their most important sources as follows: media (92 percent), banks (45 percent), consumer association (43 percent) and the BoS (40percent). These results reflect the active and efficient involvement of those institutions in preparation for the changeover.

Final Observations and Conclusions

The cash changeover in Slovenia was an efficient and smooth operation. A large share of the credit should go to the comprehensive and exacting care with which the process was planned, good coordination and logistics in the preparatory stages and, last but not least, intense and open cooperation with the banks, which were considered key institutions in the changeover. Although it is difficult to identify any obvious shortcomings, some issues merit further consideration so as to make future changeovers all the easier.

Many eligible and interested parties considering subfrontloading expressed concern regarding the very strict and restrictive rules imposed upon the process. High fines (perhaps excessively so) for the premature release of the subfrontloaded euro cash, coupled with the stringent requirement of collateral-based assurances to cover this possibility, deterred many potential subfrontloading customers.

In contrast to the first wave of changeovers in 2002, subsequent changeovers are, of course, taking place in an environment where euro cash already exists in circulation. Taking this into account, it is very likely that much of the de facto changeover will happen before the formal de jure changeover day. Banks are not allowed to use frontloaded cash for these sales of euro, so they have to procure the necessary euro foreign exchange via commercial channels. By the same token, it turned out that, soon after the changeover date, the demand for frontloaded euro banknotes and coins had been overestimated. To avoid this inconvenience the ECB should reconsider the strict rules on the use of frontloaded euro cash before the official changeover date. There is no risk posed to either the ECB or the accession country since formal decisions on the abrogation of the derogation (the decision that the EU member state is allowed to adopt the euro as a common currency) are final and irrevocable. Loosening some of the rules on use of frontloaded cash could

have ramifications for how long the dual circulation period is allowed to last. One would do well to note that the dual circulation period imposes a significant burden on retailers and other cash-intensive businesses. Therefore, the costs associated with this period are in direct proportion to its length. A lesson to be learned from the Slovenian changeover is this: the higher the degree of "euroization" before the changeover, the shorter the required dual circulation period and the costs associated with it. Similarly, a high degree of informal "euroization" before a formal changeover is likely to make the formal changeover all the smoother.



Chapter 7

SLOVENIA AFTER EURO ADOPTION: CHALLENGES AND SOLUTIONS

Thomas Dalsgaard

INTRODUCTION AND SUMMARY

Slovenia's' experience during the euro entry year of 2007 serves almost as a textbook example of some of the more severe economic policy issues facing countries in a currency union.

The surge in inflation and the current account deficit after January 2007 called for policies to contain domestic demand and wage pressures. As monetary conditions, reflected by the policy rates set by the European Central Bank and the movements of the real effective exchange rate, mirrored average euro area conditions, not the much more advanced cyclical position of the Slovenian economy, fiscal policy and incomes policies had to play a greater role to contain domestic demand.

While wage policies continued to be prudent throughout 2007, fiscal policy was too lax, adding to domestic demand rather than constraining it. The resulting increase in growth and the output gap contributed to inflationary pressures and the economy was stretched above its capacity in some sectors. Thus, notwithstanding large inflationary pressures stemming from international food and energy price hikes, domestic policies did not act sufficiently to rein in demand and inflation.

The euro adoption will bring economic benefits to Slovenia but also pose substantial challenges for economic policymakers. Succeeding in the Euro area requires not only prudent macroeconomic policies but enhanced flexibility and structural reform in labor, product, and financial markets. Preserving competitiveness and upgrading productivity requires that labor and capital can move smoothly between activities and sectors.

The remainder of this chapter examines in more detail economic developments during 2007 and discusses the policy agenda going forward.

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Economic Performance After Euro Adoption

GDP grew at a record 6.1 percent in 2007, driven by investment, including a surge in highway construction. Export and import volumes both soared, resulting in a negative contribution to growth from net exports. Annual GDP growth was more than twice as high as the euro area average and the resulting output gap was substantial (Table 1). Government finances were close to balance, a slightly better outcome than for the euro area as a whole, while the current account deficit soared to around 5 percent of GDP against an average deficit of 2 percent of GDP in the other Euro area countries.

	2006	2007	2008	2009			
GDP volume (% change)							
Euro area	2.8	2.6	1.3	1.1			
Slovenia	5.7	6.1	4.1	3.5			
Output gap (% of potential output)							
Euro area	-0.4	0.1	-0.5	-1.3			
Slovenia	0.0	1.4	0.9	-0.1			
Unemployment (% of labor force)							
Euro area	8.2	7.4	7.3	7.4			
Slovenia	5.9	4.8	4.8	5.0			
Wages (% change) ¹							
Euro area	3.4	2.7	3.1	2.8			
Slovenia	5.5	6.4	7.0	6.0			
Consumer prices (% change)							
Euro area	2.2	2.1	2.7	1.9			
Slovenia	2.5	3.6	4.0	2.4			
Government balance (% of GDP)							
Euro area	-1.4	-0.6	-1.2	-1.2			
Slovenia ²	-0.8	-0.1	-0.6	-0.3			
Current account (% of GDP)							
Euro area ³	-1.2	-1.6	-1.9	-1.9			
Slovenia	-2.8	-4.8	-4.8	-4.9			

Table 1: Key macroeconomic indicators in Slovenia and the euro area

1 Hourly compensation, manufaturing

2 Including railways

3 Unweighted average

Source: IMF, World Economic Outlook, April 2008.

Labor market conditions tightened as the year progressed but emerging bottlenecks in some sectors, in particular construction, were to some extent mitigated by an influx of immigrant workers (Figure 1). This contributed to containing wage pressures despite the rapidly falling unemployment.



Private sector credit growth continued at a rapid pace, around 30 percent on an annual basis, contributing to the strong expansion of domestic demand.¹ In a broader EU context, however, Slovenia's households and firms do not appear to be overly leveraged and the credit expansion in recent years has been less dramatic than other emerging markets in Central and Eastern Europe, such as Bulgaria, Hungary, and Estonia (Figure 2).

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¹ The international financial turmoil, which started in Summer 2007, had a limited impact on Slovenia during 2007, while the first months of 2008 showed emerging signs of spillovers in terms of reduced credit growth and a plunging stock market (albeit broadly following regional trends, and after a surge in the preceding years).



From April 2007, a dramatic surge in inflation began to take place, spurred by food and service prices, but also growing aggregate demand.² By early 2008, monthly inflation had reached 6,5 percent at annual rates, against 3,5 percent in the euro area. The inflation differential towards the Euro area, both headline and underlying inflation, grew steadily through 2007 (Figures 3 and 4).³ Food inflation, in particular, increased at a much higher pace in Slovenia than in the rest of the euro area (Figures 5 and 6). Define HICP acronym, pls.

² Surti (2008)

³ Underlying inflation excludes food, energy, alcohol, and tobacco.





Source: Eurostat.

Note: Inflation is measured here as changes in 12-month averages in the harmonized consumer price index. Euro area data exclude Slovenia (EA12).





Source: Eurostat.

Note: Inflation is measured here as changes in 12-month averages in the harmonized consumer price index. Euro area data exclude Slovenia (EA12).


Figure 5: Food inflation (processed and unprocessed) in Slovenia and the euro area

Note: Inflation is measured here as changes in 12-month averages in the harmonized consumer price index. Euro area data exclude Slovenia (EA12).

The substantial increase in the current account deficit was caused by a larger trade deficit and higher debt service. Exports increased sharply despite the appreciation of the euro, but so did imports, reflecting in particular the strong domestic investment activity. The net result was a sharp deterioration of the trade deficit. Rising foreign debt and higher interest payments rates resulted in a substantial increase in debt service, contributing to an increase in total net factor payments. Inward foreign direct investment (FDI) increased sharply, but from a low level.

Table 2: Current account balance, 2006 and 2007

Percent of GDP	2006	2007
Current account	-2.8	-4.8
Trade balance	-0.9	-1.8
Net factor payments	-1.9	-3.0
Memorandum items		
Foreign debt	78.4	101.2 ¹
Inward FDI	1.7	2.7

Sources: Statistical Office of the Republic of Slovenia and IMAD. 1 By end of November 2007.

The macroeconomic policy mix was relatively loose over the course of the year, contributing to the emerging overheating pressures. Monetary conditions were more lax than the euro area average reflecting lower real interest rates (due to higher inflation) and a smaller appreciation of the real effective exchange rate resulting from the higher weight of euro area countries in Slovenia's import basket (Figure 6).



Fiscal policy was expansionary in 2007, in particular when taking into account the stimulus from activities of the public road construction company (DARS). Notwithstanding a roughly balanced general government budget, mainly reflecting strong cyclical revenue gains, fiscal policy (including motorway construction) is likely to have added about 1 ½ percentage of GDP to demand in 2007.

Progress in structural reform was limited. The tax reform implies lower taxation of personal and business income and lower marginal tax wedges, leading to improved labor and investment incentives. However, it is also revenue losing, which is unaffordable over the medium term and contributed to the loosening of the fiscal stance in 2007.

The financial sector is underdeveloped compared with European peers, resulting in inadequate access to other financing than traditional bank lending and less efficient investment.⁴ The banking sector is sound but inefficient with a large share of state ownership.⁵ The government has announced intentions to reduce its stake in the financial sector and took a first step by privatizing, through a successful IPO, 49 percent of the shares in the country's second largest bank, NKBM, in December 2007.

Policy Agenda Going Forward

Near-term challenges

A relatively soft landing is projected for 2008 and 2009, with GDP growth tapering off to 4 and 3 ½ percent, respectively, thus unwinding the positive output gap by 2010. Inflation is projected to decline towards 2 1/2-3 percent, while the current account deficit will remain at a relatively high, albeit slowly declining, level.

The key risk to this relatively benign outlook is inflation. If the high inflation rates persist and become anchored in inflation expectations, and hence wage formation, there could be a much sharper slowdown in demand and a further deterioration of the current account position.

The immediate challenge is to contain wage pressures and claw back some of the planned fiscal stimulus in 2008 and 2009. While the former requires prudent wage agreements, the latter could be addressed by postponing some of the planned public construction activity, freezing spending and hiring, and pruning inefficient current spending. Raising taxes could also be necessary, but should be considered as a last resort given the savings potential on the spending side and the already high tax levels. The government should aim for a balanced budget in both years.

The approved 2008 budget is estimated to add over 1 percent of GDP to demand in 2008, the largest fiscal impulse in recent years (Figure 7). Additional stimulus from DARS activities could nudge demand by as much as 2 percent of GDP or more. The 2009 budget implies a slight fiscal tightening, although adding DARS would once again lead to an overall increase in demand by the public sector.



⁴ Andrietzky (2007).

⁵ Bems (2007).



Source: IMF staff calculations.

Note: The fiscal impulse is measured as the change in the cyclically adjusted government primary balance (excluding EU transfers).

Encouraging greater competition can complement tighter fiscal policy in dealing with price pressures. While the external factors driving inflation are to some extent outside the control of Slovenian policymakers, lack of competition in product markets, especially in food and some services, may also play a role in the transmission of the external price shocks.⁶

Medium- to long term challenges

To continue to enjoy strong economic performance, Slovenia will need to persist with sound economic policies. The good times now should be used to increase public savings and advance fiscal, labor market, product market, and financial sector reforms.

To underscore this point, it is illuminating to look at the experience of Ireland and Portugal after Euro adoption. In Ireland, large inflows of FDI raised productivity, and low taxes encouraged labor supply and investment. Wage growth was kept below productivity growth, and the country's well-educated and skilled labor force contributed to high returns from export-oriented manufacturing. Ireland thus continued to grow rapidly after euro adoption. In Portugal, booming credit fed consumption and a housing boom, while investments into manufacturing remained low due to costly business regulations and rapid wage growth. Portugal lost competitiveness and export markets. Growth stalled soon after euro adoption and recovery has been slow.⁷

Learning from these examples, policymakers in Slovenia should focus on four key areas to ensure continued good economic performance.

First, public spending needs to be more flexible and efficient. Dealing with economic ups and downs in the euro area will be easier if fiscal policy can respond flexibly to changing

⁶ Dalsgaard (2008) and Surti (2008).

⁷ IMF (2007).

circumstances. Although revenues tend to adjust to economic cycles, a rigid structure of spending in Slovenia makes the budget rather unresponsive to booms and busts. This also makes it hard for the government to find spending cuts when needed. At the same time, spending in key areas such as education, health, and social transfers is less efficient than in many other EU countries, when considering the quality of the services received.⁸ This suggests that savings can be achieved without compromising quality.

Second, pension reform is strongly needed to meet the government's balanced budget target and sustain it in the future in the face of a rapidly aging population. While revenues are projected to decline as further reductions in income tax rates are planned, most of the needed cuts in spending for the balanced budget have yet to be identified. Also, new expenditure pressures are emerging; planned railway investments amount to 30 percent of current GDP over the next ten years, and, in the absence of reforms, pension and health bills are projected to start rising from the current 18 percent of GDP to 23 percent in 2030. To deal with the looming pension burden, Slovenia should immediately initiate more substantive pension reform—as has been done by most other European countries with rapidly aging populations. Besides raising the low statutory retirement age, especially for women, there is an urgent need to address the strong incentives for early retirement posed by generous tax and benefits systems for retirees.⁹ Slovenia should also start building additional savings for future payments now by running tighter budgets than currently planned.¹⁰ Implementing reforms that boost government saving as soon as feasible would pay high dividends because it would help deal with both the near- and medium-term fiscal challenges.¹¹ This would ensure that public finances stay solid going forward.

Third, success in the euro area requires a continued cautious wage policy to complement fiscal prudence. While wages in Slovenia have lagged productivity, allowing companies to invest and contain price pressures, demands for a shift to wages growing in line with productivity have increased. While workers deserve a fair share of the economic gains, it is wise to do this gradually and in times when the economy is not facing substantial risks of overheating.

Fourth, structural reform of labor, product, and financial markets is needed to bolster productivity growth (and hence income convergence), compete in the Euro area and enhance the robustness and flexibility of the economy to withstand economic shocks. Competitiveness and resilience to shocks is increasingly based on the ability to adopt more sophisticated technologies and allocate labor and capital to the most productive uses. In this respect, Slovenia could focus on the following areas:

- Labor market flexibility could be enhanced, in particular, by reducing the costs of firing (which are among the highest in Europe) and increase efforts related to active labor market policies and life-long learning.
- Product market competition is broadly in line with EU peers, but is mainly driven by the economy's substantial openness to trade rather than by policies and institutions

⁸ Mattina and Gunnarsson (2007).

⁹ Tuladhar (2006a) and Sorsa (2008).

¹⁰ Tuladhar (2006b).

¹¹ Among possible directions for fiscal reform is a strengthening of the institutional fiscal framework, for instance by introducing a rule to cap growth in expenditure, and preparing, on a regular basis, independent assessments of fiscal trends and medium-term fiscal plans and outcomes (Tuladhar, 2007). Introducing performance budgeting could also help achieve fiscal savings and enhance efficiency.

normally associated with strong competition. There is hence a need to bolster inward FDI, reducing red tape, lowering government ownership in the financial sector and strengthening competition laws and enforcement.¹²

- The financial system remains bank-based, with limited capital markets compared to EU peers. This constrains risk diversification and access to finance, especially by new and smaller enterprises. Improving banks' efficiency, broadening capital markets, and deepening financial integration with Europe would help addressing these deficiencies.¹³

In conclusion, Slovenia has done well so far. The challenge is to repeat the success in the future. Fiscal and wage prudence, along with further reforms in public spending and the labor, product and financial markets, must play key roles in ensuring continued good performance.

13 Andritzky (2007).

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¹² Dalsgaard (2008).



Chapter 8

WHAT DRIVES INFLATION IN SLOVENIA?¹

Jay Surti

INTRODUCTION

After declining from a high of 8 percent (mid-2002) to a low of 2.3 percent or 9 basis points above the euro area (2006Q1), annual average inflation increased thereafter, gradually through the first quarter of 2007 and rapidly since then (Figure 1). This reversal in trend is worrying not only because of the acceleration of inflation, but also because it undoes some of the inflation convergence achieved by Slovenia with other euro area countries by the end of 2005. Over the last three years the Slovene price process resembles that in the Visegrad and Central and Eastern European countries more closely than in the euro area, both as regards direction and volatility. Whereas the steep increase in global commodities prices was an important contributing factor to the reversal in Slovenia's recent progress on inflation, these external shocks affected economies globally. Consequently, they fail to adequately explain the divergence of prices relative to the euro area countries.

Slovenia's experience is by no means unique as inflation differentials are not uncommon within single currency areas. Regional inflation differentials have been a noted feature of the Spanish economy, and within the euro area, Ireland, Italy, and Spain have since 2001 experienced persistently higher inflation than other members. Research on factors underlying these differentials has explored the impact of a number of characteristics, such as the imperfect synchronicity in countries' business cycles; differences in fiscal and structural policies; the relative importance of different trading partners that result in different (effective) nominal exchange rate dynamics within a common currency area; the differences in domestic consumption baskets, and consequently, in the domestic inflationary response to global price developments; the differences in productivity growth in the nontradables sector; and the differences in product and factor market competition.¹

See for example, Angeloni and Ehrmann (2004), Arratibel and others (2002), Égert and others (2004), Estradaand López-Salido (2001), Hammermann (2007), Honohan and Lane (2003), Rabanal (2006), and van Els and others (2001). These papers also carry extensive references to the other relevant papers in this area.



We review in the next section a number of factors that may have reinforced the inflationary impact of exogenous price shocks in 2007. Our qualitative assessment suggests the importance of three factors. First, differences in consumer preferences: a significantly higher positive correlation between item-wise inflation and item-wise weights in the Slovene consumption basket relative to the euro area. Second, differences in trading partners: the inflation dampening effect of euro appreciation in the latter half of our sample period was weakest for countries like Slovenia which has among the lowest non-euro-area import shares in the currency union. Third, in contrast to most of the euro area, an overheated domestic

economy as represented by Slovenia's large positive output gap also likely contributed to the growing inflation differential.

In order to assign some measure of quantitative importance to these factors, we apply a structural inflation model developed and applied by Galí and Gertler (1999) to the United States, and Galí and others (2001) to the euro area in the following section.² The theoretical framework for our empirical strategy is the New Keynesian Phillips Curve (NKPC) model based on the assumptions of monopolistic competition and staggered price setting under rational expectations. Imperfect competition leads to markup pricing; hence, sensitivity of inflation to movements in marginal costs. Rational expectations means that inflation expectations matter, while staggered price setting generally implies some degree of inflation persistence. The coefficients of the reduced-form NKPC equation depend upon parameters representing deeper and structural factors determining price formation in the country. It is of considerable interest to compare our parameter estimates with those of Galí and others (2001) for the euro area. Reduced-form parameter estimates provide valuable clues regarding such characteristics of inflation dynamics as the quantitative importance of inflation persistence and the sensitivity of inflation to the economy's cyclical position. It is also possible to assign quantitative impact estimates to exogenous factors such as global commodity price developments. Owing to the limited number of observations, only two of the structural parameters—the coefficient of price stickiness (i.e., the probability of a price change in any given period) and the share of backward-looking price setters—are estimated. Empirical results suggest a limited role for real marginal costs in determining inflation dynamics. Inflation appears to be primarily driven by expectations of future inflation, a result in line with previous findings for the United States, the euro area, and the Baltic countries, with lagged inflation feeding back between 20 to 50 percent into current inflation. Our estimate of price setting flexibility indicates an average price duration of ten quarters, substantially higher than in the United States, the euro area, and the Baltic countries, but in line perhaps with the degree of administrative controls on prices in Slovenia.

In the final section, we reflect on policy implications in terms of both cyclical management and institutional reform. Labor market rigidities in Slovenia are of particular concern as they prevent firms from downsizing efficiently in response to rising cost pressures. This increases the risk of wage-price spirals developing in consequence of exogenous cost shocks. In this context, monetary policy—now responding to average inflation in the euro area which may increase less than in Slovenia to the extent that supply-side rigidities are lower in other member countries—may not tighten sufficiently to resolve domestic inflationary pressures. Consequently, success in tackling inflation in countries like Slovenia must rely heavily on fiscal policy in the short-to-medium term and structural policies in the mediumto-longer term, as only these can mitigate (in the first case) and eliminate (in the second) the weaknesses in adjustment mechanisms that increase the risk of cyclical distortions.

² Dabušinskas and Kulikov (2007) apply closed and open economy variants of the NKPC model to study inflation determinants in the Baltic states. Arratibel and others (2002) apply an empirical variant of the Clarida and others (2001) model to study inflation trends and dispersion across the euro area countries within a dynamic panel framework.

INFLATION DIFFERENTIALS: A QUALITATIVE ASSESSMENT

Euro adoption, currency changeover, and price re-indexation

Slovenia is not the first euro area member to experience high inflation and inflation differentials with other euro area countries following accession to the monetary union. Italy, Ireland, and Spain each experienced an increase in inflation within 5 months of the introduction of the euro (on January 1, 2002). Interestingly, the increase in inflation in all three cases reflected both a reversal in trend spanning at least the preceding 12 months, and the (re)emergence of an inflation differential vis-à-vis the euro area average which turned out to be quantitatively significant (Ireland and Spain) and persistent (Ireland, Italy, and Spain) (Figure 2). This suggests that re-indexation of prices in the new currency is a factor potentially helping to explain the step-up in inflation, including in Slovenia in 2007.

The Slovene authorities, anticipating some one-off price adjustments, had taken preparatory measures to limit the impact on inflation including the introduction of dual pricing and public awareness campaigns (IMAD, 2007a). Moreover, agreements with retail food suppliers were secured that precluded increases in processed food prices until mid-2007 (Bank of Slovenia, 2007). Calculations by the authorities indicate that as a result of this, one-off price increases related to the euro changeover were limited in magnitude (Table 1) and mainly observed in the cost of certain services particularly restaurants and cafés.

	December 2006	January 2007	Total
Services for footwear and clothing	0.001	0.001	0.000
Personal services	0.011	0.015	0.030
Repair of household appliances	0.002	0.000	0.000
Maintenance and repairs	0.001	0.007	0.010
Cultural services	0.000	0.002	0.000
Other transport services	0.000	0.014	0.010
Financial services	0.000	0.003	0.000
Health services	0.016	0.000	0.020
Other services	0.000	0.002	0.000
Restaurants and cafes	0.098	0.055	0.150
Total	0.130	0.100	0.230

Table 1: Contributions to inflation related to the euro changeover in Slovenia by item

Source: Institute of Macroeconomic Analysis and Development (IMAD).

We should note, moreover, that if this were the primary factor underlying 2007 price dynamics, then we would see a one-off spike in month-on-month inflation in 2007 followed by a reversion to its previous trend. This is not the case and the aggregate index and its main components exhibit sustained monthly inflation throughout the year (Figure 2).



Figure 2: Slovenia and EA12: Inflation performance around Euro adoption

Global commodity price developments

The surge in global food and metals prices starting in the last quarter of 2006, followed by a similar development in energy prices (Figure 3), partly explains the increase in commodity prices in Slovenia and the euro area over the last 12 months. However, the inflation rate for food items has been significantly higher in Slovenia than in the rest of the euro area (Figure 4). While it is therefore, accurate to say that global price developments fed the increase in Slovenian inflation, they cannot explain the widening inflation differential vis-à-vis the euro area.



Figure 3: Global Commodity Price Developments

Source: Eurostat and staff calculations.

Expiration of price freeze commitments

The 2007 Stability Programme for Slovenia ascribed the price increase in the second half of the year to the expiration of retailers' commitments to not raise prices (Bank of Slovenia, 2007). Some of the 2007 inflation differential in food items may, therefore, be explained by the fact that in preceding months and quarters, retailers may not have passed through global food price increases to the extent feasible under the concentrated supply structure in the country. The dynamic of prices of processed and unprocessed food items does indeed correspond to the view outlined above by the authorities, with prices of fruits and vegetables increasing sharply in the second quarter of 2007, with most food prices rising sharply again in the last quarter of the year (Figure 5).





Source: Eurostat and staff calculations

Note: For 2002-06, each entry represents the average of annual inflation rate for the food item over the calendar years 2002-2006.





Different consumption baskets in Slovenia and the euro area

The consumption structure in Slovenia as reflected in the HICP basket weights is biased towards items that experienced the highest rates of domestic inflation. The correlation coefficient between an item's basket weight in 2007 and its annual average inflation rate over 2007 is +0.26, whereas the corresponding statistic for the euro area was negligible at -0.02. This resulted in a greater contribution of high inflation items in Slovenia's basket to the overall harmonized consumer price index inflation than was the case in the euro area, thereby increasing inflation differentials relative to pre-2007 (Figure 6).



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Differences in import baskets and trading partners relative to the euro area

An analysis of Slovenia's trade account reveals that imports from the euro area and the European Union (EU) constituted close to 85 percent of the value of 2007 imports. The import share of EU countries in other euro area members' trade accounts is lower (no more than 75 percent). As a result, the share of the latter group's import basket consisting of U.S. dollar-denominated goods and services is also larger. This indicates that an appreciating euro will translate, *pari passu*, into a lower nominal effective exchange rate (NEER) appreciation in Slovenia than elsewhere in the euro area. Consequently, global price increases may translate into relatively higher prices and inflation in Slovenia.³

The current cyclical conjuncture

Unlike most of the other euro area members, Slovenia started growing ahead of potential in 2006, ending that year with an output gap of 0.8 percent of potential GDP, which increased over 2007 to 2.4 percent. The impressive growth performance of recent years has been driven primarily by increases in business investments, the bulk of them in machinery and equipment and nonresidential (office and/or plant space) construction, in addition to the public-sector-funded road construction project (DARS). The increase in business investment that has led to a rising output gap has also made inroads into unemployment, which is now below the natural rate (NRU) for the second year in a row. Inflationary pressures were kept at bay by social agreements ensuring that increases in productivity (Table 2).⁴ Consistent with this, private consumption growth was very modest given the pace of increase in incomes.⁵ To summarize, the output gap was high and rising and the labor market tight. However, even in the absence of external price shocks and the ad hoc transitory factors that gave an impulse to inflation, the cyclical position of the economy made overheating the main risk.

Inflation differentials between tradables and nontradables

Inflation in services (nontradables) has been consistently higher than in the goods sector (tradables) in Slovenia in recent years, providing potential support for the Balassa-Samuelson hypothesis. However, as has been noted earlier in the literature (e.g., Estrada and Lopez-Salido, 2001), relative inflation differentials between services and manufacturing generally reflect both productivity differentials and markup differentials, the latter resulting from imperfect competition in the domestic economy.⁶

³ For the euro area, van Els and others (2001) report non-euro-area country weights in the NEER in a range of between 27 percent (Portugal) and 70 percent (Ireland).

⁴ International Monetary Fund (2007).

⁵ This may have something to do with the fact that employee social security contributions in Slovenia, at 22 percent of the gross salary, are quite high.

⁶ An analysis of product market competition in Slovenia is contained in Dalsgaard (2008). Proportional attribution of sectoral inflation differentials to productivity and markup differentials requires estimates of sectoral markups which are currently unavailable for Slovenia; consequently the issue is not pursued further.

	2003	2004	2005	2006	2007		
Real GDP growth	2.8	4.4	4.1	5.7	6.1		
	(contribution to GDP growth)						
Private consumption	1.9	1.6	1.5	2.2	1.7		
Government consumption	0.3	0.6	0.6	0.8	0.2		
Gross fixed capital formation	2.8	3.0	0.1	3.0	5.5		
of which:							
Government investment	0.1	0.0	0.0	0.9	0.0		
Private investment	2.7	3.2	0.1	2.1	5.6		
Net exports	-2.2	-0.9	2.1	0.0	-1.0		
Memo items:							
Output gap ¹	-1.9	-1.6	-1.3	0.0	1.4		
Unemployment gap ²	0.1	-0.1	0.0	-0.5	-1.1		
Labor productivity ³	3.2	4.1	4.0	4.5	3.3		
Real unit labor cost ³	-1.3	-0.5	-0.6	-1.8	-0.5		
Real wages ³	1.8	2.0	2.3	2.3	2.8		
Fiscal impulse ⁴	-0.6	0.6	0.4	1.0	1.5		

Table 2: Slovenia: Macroeconomic developments, 2003-present

Sources: Bank of Slovenia; Eurostat; and IMF staff calculations.

1 As a percentage of potential GDP.

2 Estimated natural rate of unemployment subtracted from actual unemployment (as a percentage of the labor force).

3 Annual percentage change.

4 Including the DARS project.

A STRUCTURAL MODEL OF SLOVENIAN INFLATION DYNAMICS

We begin with a brief review of some other potential choices to model inflation dynamics and outline the main components of the empirical NKPC model. Results from alternative specifications and a comparison obtained with similar results obtained for the euro area and the Baltic countries are subsequently provided.

On the choice of model

Our model of choice was dictated by the following factors. First, our goal is to understand and quantify the role of fundamental factors driving the Slovene price process. We are less interested in elucidating all the various factors that broadly; that is, in a stylized sense, affect inflation dynamics, an exercise for which a cross-country panel model is both appropriate and effective.⁷ Second, working with a fairly small sample of 48 observations means that in

⁷ See for example, Égert and others (2004), Hammermann (2007), and Honohan and Lane (2003)

estimating sensitivity coefficients, reliance on a well-understood theoretical (equilibrium) model for an empirical specification is called for. Third, while ill-suited for policy simulations (this is not a fully specified general equilibrium model), the chosen model is nevertheless quite insightful in terms of what it reveals regarding sensitivity of inflation dynamics to key structural parameters. For example, structural parameter estimation techniques facilitate comparison with other Euro area countries of the extent to which inflation is driven by nominal rigidities and past inflation and price trends. Estimated reduced-form parameters, on the other hand, facilitate analysis of the extent to which lower product market competition in Slovenia may generate inflation differentials and the impact on inflation of the output gap, the fiscal stance, and trends in global commodities prices.⁸

At the same time however, it is worth noting certain caveats in fitting a NKPC to a transition economy such as Slovenia, for whom much of the sample period was characterized by application of a disinflationary constraint on the business cycle as well as by several structural changes. Taken together with the small sample problem, this indicates that the Slovene economic cycle may have substantially different characteristics going forward both because of further structural changes that may be implemented (e.g., labor or financial market reforms and development) and completion of the disinflationary process. Consequently, the parameters estimated here may undergo further significant changes of their own. For this reason, a future update of the model containing a larger sample series over a normal economic cycle may yield further and different insights than the ones that follow.

Econometric specification

Data issues and parameter stability

The basic empirical specification of the NKPC is the following:9

 $\beta E_t(\pi_{t+1}) + \lambda m c_t \tag{1}$

where the coefficient λ is given by

$$\lambda = (1 - \theta) (1 - \beta \theta) - \theta$$
(2)

with $\theta \in [0,1]$ being the proportion of firms that are constrained to keep their prices fixed in any given period. $E_t(\pi_{t+1})$ denotes the expectation of period (t + 1) inflation conditional

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⁸ Arguably, many of these effects may also be captured via application and estimation of a fully specified general equilibrium (DSGE) model in which the NKPC is the aggregate supply curve. The advantage of this approach lies in the fact that simulations of policy effects may be done in a self-consistent manner. Recent papers in this spirit include van Els and others (2001) and Angeloni and Ehrmann (2004), who report on the implications of monetary policy simulations for differences in policy transmission across the euro area with resulting differentials in the sacrifice ratio over time; Bulif and Hurník (2006), who analyze the impact of the Maastricht inflation criterion on the choice of disinflation strategy, and consequently on the sacrifice ratios; and Rabanal (2006), who studies the relative roles of technology shocks, demand-side effects, and potential heterogeneity of inflationary processes inside the euro area in explaining inflation differentials in Spain vis-à-vis the euro area. It would be a natural next step to apply such an approach to Slovenia, albeit appropriate model parameterization would impose significant challenges in the Slovene context.

⁹ For a full derivation, see for example, Woodford (1996). A more concise development focused on the elements essential to deriving (1) is available in Galí and Gertler (1999).

on information available at time *t*; π_t denotes inflation in period *t*; and *mc*_t denotes the (real) marginal cost of labor. In addition to this pure forward looking model of (staggered) price setting firms, we will also estimate a hybrid version of the NKPC, wherein some proportion of the firms $\omega \in [0,1]$ are backward looking price setters.¹⁰ In this case, the NKPC equation may be rewritten as¹¹

$$\pi_{t} = \lambda m c_{t} + \gamma^{f} E_{t} (\pi_{t+1}) + \gamma^{b} \pi_{t-1}$$
(3)

where

$$\begin{split} \lambda &= (1 - \omega) (1 - \theta) (1 - \beta \theta) \varphi^{-1}; \\ \gamma^{f} &= \beta \theta \varphi^{-1}; \\ \gamma^{b} &= \omega \varphi^{-1} \end{split}$$
(4)

with $\phi = \theta + \omega [1 - \theta (-\beta)].$

All variables in (1) and (3) are log deviations from their steady state-equilibrium values. Our sample period is 1996Q1–2007Q4. We use two alternative series to represent inflation, the quarter-on-quarter log change in the GDP deflator (seasonally adjusted), as is standard in the NKPC literature, and in addition, the quarter-on-quarter log change in the CPI (seasonally adjusted). For (real) marginal costs, we use the labor income share in GDP (equivalently, real unit labor costs). Estimation is performed with de-meaned inflation and labor share series in every case. This entails assuming a constant steady-state inflation rate equal to the sample average, meaning that during the disinflationary period encompassing much of the sample window, high inflation rates are treated as significant deviations from the steady state. The reasons for choosing de-meaned series rather than the levels or a detrended series are that the policy regime and objectives pre-euro adoption and sample statistics do not argue persuasively for a zero steady-state inflation rate (as in Galí and Gertler), and forward-looking price setting appears to be at variance with de-trending.¹²

A serious concern relates to the assumption of constant steady-state values of the macroeconomic variables in a disinflationary environment with possible structural changes to competitiveness in key product and factor markets. In the theoretical model underlying the NKPC, variations in (real) marginal costs represent a deviation of price markups from their optimal levels; the subsequent adjustment of prices and hence, inflation, represents a return to the desired markup price. When using the labor income share as a proxy for real marginal costs, two issues arise. First, variations in the labor income share in a transition economy such as Slovenia over the sample period may reflect structural changes in the economy rather than merely a deviation in markups as is the implicit assumption. Second and related to this is the fact that the data series for labor share of income clearly exhibits an increasing mean over the sample period providing some support for the structural change

¹⁰ Unlike forward-looking price setters who set period t prices by using the time t information set-based probability distribution of the path of future marginal costs, backward looking price setters base their prices on the new price announced in the previous period adjusted for one-period back inflation; that is, $p_t^{\ B} = \overline{p}_{t-1}^{\ +} + \pi_{t-1}$, where the first term on the right-hand side is the reset price. For details, see Galí and Gertler, (1999, pp. 210-11).

¹¹ We therefore assume constant marginal costs across firms in the underlying theoretical model as in Galí and Gertler (1999) but unlike in the more general case considered by Galí and others (2001).

¹² Dabušinskas and Kulikov (2007) also argue against independent detrending of inflation and labor costs due to the fact that the model seeks to establish a structural link between the two variables.

hypothesis and making it difficult to interpret all deviations of the labor share of income from its sample mean as temporary deviations of the price markup from its desired constant level.

A final and related concern is the assumption that the structural parameters ω and θ are time invariant over the period 1996–2007. It is quite plausible that some properties of price setting behavior may respond to long-term trends in inflation dynamics should such exist. Once more, the disinflation process may have reduced the proportion of backward-looking price setters over time whereas an increase in product market competition could have increased the frequency of price changes over any given horizon. As highlighted by Dabušinskas and Kulikov (2007) in the case of the Baltic countries, the disinflation process and structural changes that have respectively characterized Slovene price dynamics and economy over the last decade mean that there are limits to the straightforward applicability of the NKPC model. It is left to future research to investigate this important issue.

Choice of estimation technique

Returning to (1) and (3), we note that the presence of an expectations variable on the right-hand side makes ordinary least squares (OLS) problematic should a one period lead of inflation be used to represent time *t* expectations of it as is the case in this model specification. The assumption of rational expectations implies that the error in the forecast of one-period ahead inflation today is uncorrelated with information available today or earlier. It follows from (1) that

$$E_t \left(\left(\pi_t - \lambda m c_t - \beta \pi_{t+1} \right) \mathbf{Z}_t \right) = 0 \tag{5}$$

where \mathbf{Z}_{t} is a vector of variables predictable at date *t*. This orthogonality condition and the corresponding one for its hybrid counterpart

$$E_{t}\left((\pi_{t}-(1-\omega)(1-\theta)(1-\beta\theta) \otimes^{-1} mc_{t}-\theta\beta \otimes^{-1} \pi_{t+1}\right) \mathbf{Z}_{t}\right)=0 \quad (6)$$

form the basis for estimating the model via the generalized method of moments (GMM).¹³ As noted by Ma (2002) and Stock and others (2002) however, the GMM criterion function for the NKPC model may have several local minima in the space of structural parameters. Consequently, we adopt two strategies to avoid identification issues:

- We use an instrumental variables (IV) approach, choosing a set of variables predetermined at time *t* as instruments for the forecast of inflation (E_t (π_{t+1}) and the current period labor share. The instruments are chosen to reflect factors relevant to inflation dynamics as indicated in the section "Inflation Differentials: A Qualitative Assessment". We start with a larger set of instruments including lags of inflation, the output gap and its lagged values, the tolar long-short spread, innovations to the NEER, innovations to the terms of trade, government investment-to-GDP, and general government balance. In order to minimize the likelihood of the twin problems of weak and invalid instruments, we subsequently select a more parsimonious set of instruments that retains a sufficient

¹³ It is well known that nonlinear estimation using GMM is sensitive sometimes to the manner in which orthogonality constraints are imposed. Following Galí and Gertler (1999) and Galí and others (2001), therefore, we considered two alternative specifications of (5) and (6). However, this made no tangible difference to our estimates of the structural parameters, neither in terms of magnitude nor significance.

proportion of the explanatory power of the full set of instruments.

- As we were unable to find an IV specification that was free of the problem of heteroskedastic and autocorrelated errors, we also implemented a constrained GMM model allowing only one freely varying structural parameter; viz., the proportion of price setters in each period $(1-\theta)$ in (1) and the proportion of backward-looking price setters ω in (3).

Reduced form evidence

Forward model estimation

Both IV and GMM estimation of the pure forward version of the NKPC equation (specification (1)) yielded similar results and independent of whether the dependent variable was the log change in GDP deflator or log change in CPI (Table 3). Numbers in parentheses indicate standard errors. We ran an instrument relevance test due to Shea (Godfrey, 1999) for multivariate models to check for instrument validity and also a simple test for over-identification for the case of a single endogenous regressor (IV). These indicate that the null hypotheses of instrument validity and model over-identification cannot be rejected at 10 percent.

Dependent variable					
	GDP deflator	СРІ			
IV					
β	0.986***	0.915***			
	(0.0833)	(0.2264)			
γ	-0.0004	0.002			
	(0.0068)	(0.0171)			
Overidentification:	Cannot reject	Cannot reject			
Shea instrument validity:	Cannot reject	Cannot reject			

Table 3: Reduced form forward-looking model estimation

Notes : Instruments for GDP deflator version include 3 lags of inflation, lagged labor share, lagged avg. four quarter global metals price inflation, long-short SIT spread, public investment, and change in NEER. Instruments for the CPI version include the same less 2 lags of inflation, and public investment, but adding a lag of output gap, trend global inflation in oil and food, and one lag of the change in the NEER

GMM		
β	0.944***	0.964***
	(0.1795)	(0.0754)
γ	-0.0002	0.0004
	(0.0126)	(0.0539)
J Statistic:	4.7115	9.2385
Skewness:	0.46***	-0.86**
Kurtosis:	6.66***	4.38**

Notes: Instruments for the GDP deflator version include 2 lags of inflation, one lag of output gap, public investment, long-short SIT spread, trend inflation in metals and oil, change in NEER (lagged and current), and lagged labor share. Instruments for the CPI version include the same less public investment, but adding 2 more lags of inflation, and trend inflation in food prices.

** denotes significance at 5 percent and *** significance at 1 percent.

There is a striking similarity between estimates of the parameters across all four specifications indicating the importance of expected future inflation in determining current inflation. The impact of changes in marginal cost as represented by (one lag of) labor share of GDP is negligible in magnitude and insignificant in all cases. OLS projections of one lead of inflation on parsimonious subsets of the instruments clearly indicate that current output gap is a significant and quantitatively important determinant of expected future inflation, (Table 4). An increase in the output gap leads *pari passu* to an increase in expected future inflation. Equally interesting is the finding that an increase in the long-short spread (i.e., a *credit squeeze*) can counteract the output gap effect. This indicates that contractionary monetary policy may be effective in tackling inflation if an increase in the short-rate can yield a sufficient widening of the long-short spread.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Х	0.977573	0.230282	4.245118	0.0001
OTREND	0.005399	0.007195	0.750337	0.4577
MTREND	-0.013523	0.020036	-0.674924	0.5038
SPREAD*X	-7.326540	3.749030	-1.954250	0.0581
DNEER	-0.028228	0.059889	-0.471333	0.6401
DNEER(-1)	-0.109490	0.059553	-1.838525	0.0738
LGLS_DM(-1)	-0.018406	0.009955	-1.849021	0.0722
R-squared	0.688190	Mean dependent var		-1.78E-05
Adjusted R-squared	0.638956	S.D. dependent var		0.008246
S.E. of regression	0.004955	Akaike info criterion		-7.634816
Sum squared resid	0.000933	Schwar	-7.353779	
Log likelihood	178.7834	Durbin-V	Vatson stat	2.697832

Table 4: OLS projection of future inflation (CPI) on instruments

Hybrid model estimation

The results for the hybrid model are presented in Table 5.

Table 5: Reduced form hybrid model estimates

	Dependent variable	
	GDP deflator	CPI
IV		
γ^{f}		0.5941***
		(0.0750)
$\gamma^{\scriptscriptstyle (b)}$		0.4845***
		(0.0565)
γ		0.0034
		(0.0039)
Overidentification:		Cannot reject
Shea instrument validity:		Cannot reject

Notes : Instruments for the CPI version include trends in metals, oil, and food prices, long-short SIT spread, change in the NEER (current and lagged), and one lag of change in prices and lagged labor share.

GMM		
γ^{ϵ}	0.7814***	0.5611***
	(0.2106)	(0.1534)
$\gamma^{\scriptscriptstyle b}$	0.1529	0.2736**
	(0.1564)	(0.1065)
γ	0.0007	-0.0193**
	(0.0117)	(0.0098)
J Statistic:	4.6485	8.8560
Skewness:	0.17***	-0.09
Kurtosis:	6.47***	3.41

Notes : Instruments for the GDP deflator version include 2 lags of inflation, one lag of output gap, public investment, long-short SIT spread, trend inflation in metals and oil, change in NEER (lagged and current), and lagged labor share.

Instruments for the CPI version include the same less public investment, but adding 2 more lags of inflation, and trend inflation in food prices.

** denotes significance at 5 percent and *** significance at 1 percent.

Coefficient estimates for lagged and (expected) future inflation are broadly similar in sign, significance, and, to a lesser extent, magnitude across the two estimation methods. Except when applying the GMM estimation using the CPI-based measure of inflation, the lagged labor share is insignificant and even in that case, the coefficient estimate is of negligible magnitude.

In order to interpret our results for the hybrid model, as well as in estimating the structural parameters below, we focus on the GMM estimation of the reduced form where the log change in CPI is our inflation measure. While the IV estimates are broadly similar, the procedure is susceptible to heteroskedastic and nonnormal errors that renders suspect coefficient estimates and any inference based on them. GMM estimation with log change in GDP deflator also suffers from nonnormal errors.

Our results are broadly consistent with those derived by Galí and others (2001, p. 1257, Table 2) for the euro area and by Dabušinskas and Kulikov (2007, Tables 1–3) for the Baltic countries, albeit our sign for the coefficient of the real labor share is the opposite. The estimates for lagged inflation are significant but relatively small, providing further support for the view that inflation expectations play a critical roles in driving price setting behavior and hence inflation in the present.

Structural parameter estimation

As indicated above, in order to avoid identification problems, we restricted our estimate of β to 0.964, which is its estimate in the reduced-form model (Table 6). In estimating the structural parameters of the hybrid model, we further restricted the parameters to (β , θ) = (0.964, 0.916), where the latter value is its GMM estimate in the forward model.¹⁴

b

¹⁴ The hybrid model was also estimated with only β being constrained; however, this led to economically meaningless estimates of the parameter ω .

Table 6: Structural parameter estimates

	Forward Model	Hybrid Model
Structural Parameters		
β	0.964	0.964
θ	0.9162***	0.9162
ω	n.a.	0.2802
Implied reduced-form		
γ	0.0047	0.0059
\mathcal{Y}^{f}	n.a.	0.7440
$\gamma^{\scriptscriptstyle b}$	n.a.	0.2360
J Statistic:	6.2159	5.8446
Skewness:	0.85**	0.61
Kurtosis:	3.83**	3.43

Notes : Instruments same as for reduced form estimation.

** denotes significance at 5 percent and *** significance at 1 percent.

The results are broadly consistent with direct estimates of the reduced form parameters. Structural parameter estimates indicate that backward-looking price setting in Slovenia, while not absent, is far less prevalent than in the Baltic countries and conforms to estimates for the euro area. On the other hand, the length of time over which prices remain fixed in Slovenia appears to be significantly greater than corresponding estimates for the euro area, although perhaps this indicates the relative importance of administered pricing in Slovenia relative to the Euro area.

STRUCTURAL FACTORS AND (RISK OF) WEAK ADJUSTMENT

A number of domestic factors point to the urgency of introducing policy measures that can prevent the transmission of the inflation record of 2007 into higher inflation expectations. While real wage growth has been relatively low compared to growth in real GDP over the last five years, the cyclical position of the economy and the persistent gap between income and private consumption growth in recent years mean that expectation changes could quickly translate into a wage-price spiral which can be difficult to undo ex post owing to labor market rigidities.

Slovenia's labor market regulations pertaining to employment protection are among the most stringent in the EU. The World Bank's 2006 *Doing Business* report ranks Slovenia 146th among 175 countries in a *Rigidity of Employment Index* covering (i) difficulty in hiring; (ii) inflexible working hours; and (iii) difficulty in firing. Minimum wages in Slovenia are also high by international standards, at 48 percent of the average wage in 2005.¹⁵ Income taxes and social security contributions are also high in Slovenia relative to the euro area and EU averages.

In the current domestic environment of low real wage growth and high tax and social security obligations, transitory and exogenous price shocks can have a more pronounced impact on prices and inflation in Slovenia than in countries with flexible labor markets. This is because if the pass-through of exogenous price shocks (e.g., increase in the nonlabor cost of goods due to increases in energy and metals prices) to (domestic) consumers is less than 100 percent as is likely the case in Slovenia (Dalsgaard, 2008), the marginal cost of labor increases and firms are unable to achieve their optimal markup targets. In countries with flexible labor markets, firms respond to this by efficiently lowering their scale of production by reducing demand for all production factors including labor. However, as the costs of making downward adjustments to the labor force in Slovenia are high, employment will be relatively unaffected. It is then possible that nominal wages rise in response to rising prices, which put a further squeeze on profits and eventually, supply, albeit without the concomitant reduction in demand. This in turn can result in a second round of price increases in domestic product markets owing to the imbalance between supply and demand. While the correction will occur eventually, the impediments to the automatic labor market adjustment mechanisms can greatly exacerbate the amplitude and length of the cycle.

The import of the above discussion is that a potent channel of monetary policy transmission (i.e., the *cost channel*) may not work efficiently enough in Slovenia, adversely affecting the monetary authority's ability to use standard instruments to target price stability in the country. As noted in the introduction, starting 2007, the monetary authority no longer targets the domestic rate of inflation, but rather a weighted average inflation rate for the euro area. As transmission channels of monetary policy are generally stronger in countries with more developed financial markets and with lower constraints on market flexibility, the monetary policy response may not be contractionary enough to induce Slovenian firms to reduce output by reducing all factors of production in an efficient manner. In other words,

¹⁵ Domadenik and others (2006). Domadenik (2007) reports that the average cost to a firm of firing an employee is ten average monthly wages, while the OECD average is less than eight average monthly wages.

without domestic structural reforms, monetary policy may not be able to address wage-price spirals in Slovenia, even if its business cycle were perfectly synchronous with the euro area.

A final reason why contractionary monetary policy may fail to have its full effect in Slovenia is the weaker impact on trade deflators relative to other euro area members. Contractionary policy usually strengthens the Euro (and currencies fixed or tightly managed relative to it) relative to other major global currencies. Import substitution (as reflected in the NEER appreciation) reduces inflation (and domestic demand) in all euro area countries, but relatively more in those for whom the non-euro area/non-EU import shares are greater. As Slovenia has among the lowest non-euro-area import shares in the union, the impact on NEER and inflation will be relatively modest (Figure 7).



In the absence of monetary policy tools, it is imperative that the fiscal stance be sufficiently restrictive to cool demand. Slovenia's fiscal policy was pro-cyclical in recent years, and particularly so in 2006 and 2007. It appears, therefore, that there is scope for authorities to use fiscal tools more actively and judiciously to rein in demand and limit the risk of higher inflation igniting a wage-price spiral. Fiscal contraction should clearly be the leading instrument of anti-inflationary policy in Slovenia.

However, fiscal measures do need to be supported—over the medium term—by key structural reforms on the labor market side that can strengthen adjustment mechanisms and render monetary policy interventions more effective, in turn easing the burden and reliance on the fiscal channel.



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Chapter 9

PENSION SYSTEM ADJUSTMENTS

Dušan Kidrič

Like other countries undergoing economic transition, Slovenia went through several phases of pension reform as the social security system was changed to reflect political democratization, the development of a market system, and the establishment of other new institutions.

CHANGES IN THE NINETIES

Slovenian economic performance since gaining independence can broadly be divided into two phases. The economic, social, and political transformations which took place immediately after independence in 1991 were followed by a drop in economic activity. The subsequent period until 2008 saw a trend of relatively high economic growth. During the first period, the share of pension and health care costs increased relative to gross domestic product (GDP). The cost of providing pensions could not have but increased, as demographic trends were unfavorable and the decline in economic activity encouraged generous early retirement schemes in order to reduce unemployment. As economic activity picked up, the share of social expenditure in GDP subsided.

Pension reform in Slovenia is not a single event on a timeline. Rather, it is a chain of consecutive changes. One can distinguish two structural reforms and several interventions in pension legislation (see Table 1).

Table 1: The pension reform process

95	96	97	98	99	2000	'01	02	03	04	2005	06	07	08	2009	10	11
BROADER REFORM				Nev	v proj	oosals	5	SECON OF F	ID PH/ Refor	ASE M						
Pi	repara	tory a	ctiviti	es	"First phs	e: gra	dual ir	ntrodu	uction					mode	rnizati	on
WH	ITE PA	PER.	Soo dialc and F mer deb	cial ogue Parlia- ntary oate	of new parameters; Supplemetary pension insurance; Changes in benefit adjustment formula"			"Lost period – missing second phase ; Changes in benefit adjustment formula"		sing fit ıla"	Expert analysis	Soo dialc ar Parlia tary d	cial ogue nd men- ebate			

The changes in 1992

Ppension reform in Slovenia is often discussed as if it was nonexistent prior to 2000. However, in 1992, the first law on Pension and Disability Insurance in the newly independent Slovenia made considerable changes to the existing rules. The changes were planned during 1991 and implemented in 1992, several procedural difficulties notwithstanding.

Slovenia maintained a Pay-As-You-Go (PAYG) financed system of redistribution of income between active and retired generations. The 1992 reform was mainly parametric, not structural. However, a supplementary, nonmandatory pension scheme was put into effect. Moreover, also in 1992, a decision was taken to prepare a proposal for substantive reform.

A pension system does not exist in isolation. Rather, it is part of a complex network of relationships with, and influences on, other systems. For example, a progressively graduated personal income tax (PIT) was adopted. Before 1991 wages were not taxed by PIT, although social contributions were deducted. The rules for determining pensions are inextricably linked with earning records, which could be expressed in net or gross value. While traditionally in Slovenia pensions were accrued based on net income, continuity and coherence in pension accrual was to be maintained in the period after PIT introduction by calculating the implicit net salaries using the PIT rate.

The economic institutional environment had changed completely. Above all, there was an increase in the number of small companies. Ownership transformation (privatization) distributed property unequally. A portion of the assets gained from privatization was put in a separate fund (KAD)¹ and used to finance pension expenditures.

The pension White Paper²

Before the drafting of the White Paper, the Government adopted guidelines for the reform of pension and disability insurance. The basic idea of the pension reform was that pension insurance was to remain redistributive. However, because expenses for maintaining adequate

¹ KAD: Kapitalska družba, d. d. (Pension Fund Management) is a joint-stock company whose sole founder and shareholder is the Republic of Slovenia. It was established with the purpose of creating additional capital for pension and disability insurance by means of asset management. http://www.en.kapitalska-druzba.si/about_ kapitalska_druzba.

² The White Paper comprised an introductory study, which analytically described the demographic, social and fiscal situations for both the long and short term. The document set out the reasons for reform, described in detail the proposal of the new pension system, and proposed the method required to carry out the reform in the two consecutive phases. It combined the proposals for a pension reform with reforms of macroeconomic policy.

pension benefits could not be fully covered by contributions and state budget transfers, an optional supplementary pension scheme was to be introduced. Since pension reform was a socially sensitive issue, it was decided that no change should occur without the prior consent of social partners in the Economic Social Council.

The 1999 pension reform

As the outcome of the White Paper and after intense and long political discussion and debate the reform was adopted.

One of the main reasons for the 1999 pension reform was the envisaged future problems with financing the unreformed system due to demographic trends. If regulations remained unchanged, it was projected that expenditure would rise to 27.3 percent of GDP in 2044—twice that of 1997. All differences of public pension expenditures in excess of social insurance contributions and transfers from the state budget at the current level of GDP share could be considered as the (accumulated) deficit or implicit debt. By 2021, it was projected that the implicit debt would be 72 percent of GDP and that by 2048, it would increase to the almost four times GDP.

The main proposal for eliminating of the current deficit and uncovered obligations over a longer period were parametric changes touching on (1) retirement age, (2) yearly accrual rates, (3) reference periods for the calculation of pensions, (4) adjustment of reference wages, and (5) indexation of pensions:

- It was suggested that the retirement age gradually increase to 65 years for both sexes.
- The proposed yearly *accrual rate* was 1.5 percent and the total accumulated accrual rate was not limited when the full pensionable age was reached (i.e., workers continued to accrue pension rights, increasing their incentive to remain economically active).
- It was proposed that the *reference period for the calculation of pensions* rise from the 10 best consecutive years to the best 25 consecutive years.
- *Indexation of pensions* and adjustment of the reference salary (pension base) was to be carried out in accordance with the Swiss formula (based 50 percent on inflation and 50 percent on wage growth).
- It was estimated that, under given assumptions, the total public financial effect of all proposed measures would almost entirely eliminate the implicit pension debt. By following the changed rules, obligations and assets of public pension insurance would balance at 13.7 percent GDP.

The analysis done in 1997 imputed shares of the expected reduction in pension obligations for various interventions. Keeping growth in current pension recipients' pensions below the level of wage growth was estimated to account for 20.6 percent of the future deficit decrease. Postponed retirement of currently active workers accounted for 77 percent. Changes in the accrual scale with all its applications could reduce the projected accumulated deficit by almost 10 percent. From a fiscal point of view, the burden of proposed measures would be relatively evenly distributed among retired and active generations.

 Table 2: Main drivers decreasing public pension expenditures in the long run (projection in 1997)

As share of GDP							
Period	Implicit debt	d	Proposed in lecreasing in	struments nplicit debt		Other in- struments	Total
		Retirement age	Pension base calculation	Indexation of pensions	Accrual rates	and reserves for less restrictive parameters	
1998-2050	4,2s38	2,324	0,321	0,96	1,442	-0,817	4,23
1998-2020	0,642	0,774	0,035	0,208	0,098	-0,108	1,007
Compared to implicit debt							
1998-2050	100%	55%	8%	23%	34%	-19%	100%
1998-2020	100%	121%	5%	32%	15%	-17%	157%
As share of all proposals							
1998-2050		54,90%	7,60%	22,70%	34,10%	-19,30%	100,00%
1998-2020		76,90%	3,40%	20,60%	9,70%	-10,70%	100,00%

EFFECTS ON PENSION EXPENDITURES

Source: White paper on pension reform, Ministry of Labor, Social Security and Family Affairs, Ljubljana 1997.

The White Paper proposals regarding the *supplementary pension scheme* were in line with the then-prevalent ideas for transforming the pension system to a three-pillar system. The White Paper proposed:

The new scheme would include those under 35 and those having less than 15 years of contributory history in Pillar I.

The Pillar II contribution rate would be 3 percent of salaries until 2000 (2 percent employers and 1 percent employees) and 5 percent of wages from 2006 onwards (3 percent employers and 2 percent employees), with a further increase to be discussed in 2012.

The method of paying out Pillar II pensions, whether in an annuity or a phased withdrawal, was not explicitly proposed.

It was estimated that moving into the new system would be advantageous only for persons who were in the existing system for less than 20 years, whereas for those with a longer contribution history, it would be preferable to stay in the reformed Pillar I.

RESULTS OF PENSION REFORM 1999–2000 AND CURRENT PENSION SYSTEM³

After long and intense debate, some of the proposed new measures failed to gain acceptance. However, the main proposals were put into effect. The law was passed in Parliament in late 1999 and new regulations came into effect in early 2000. The resulting system, still in place apart from parametric adjustments, was as follows:

3

The description is based mainly on the Country fiche prepared for the pension projection exercise in the framework of Working Group on Ageing and Sustainability by the ECOFIN in European Commission.

MANDATORY PENSION INSURANCE (PILLAR I)

The pension and invalidity insurance system is based on implicit intergenerational contracts and is uniform and mandatory for all employed persons and other persons generating income from employment or other gainful activity. Inactive persons can join the mandatory system voluntarily. The compulsory insurance scheme is regulated by the Pension and Invalidity Insurance Act; the insurance provider is the Institute of Pension and Invalidity Insurance of Slovenia (ZPIZ), which is an autonomous public finance entity.

Rights provided under the compulsory insurance scheme include the right to pensions (old-age, invalidity, survivor's, widow/widower's, and partial widow/widower's), entitlement to invalidity insurance, plus various supplementary and other rights, including rights under statutory provisions and under special laws or regulations for which ZPIZ acts as agent.

The social security contribution rates are 15.5 percent and 8.8 percent of gross wages for insured persons and employers, respectively. The difference between ZPIZ's revenue from contributions and outgoing expenditures is paid mainly from the national budget and a small portion from privatization assets from KAD.

SUPPLEMENTARY PENSON INSURANCE (PILLAR II and Pillar III)

The main proposal rejected was that of a universal compulsory Pillar II, although voluntary supplementary insurance remained an option. The reform introduced two kinds of supplementary pension provision: selective and very limited compulsory supplementary pension insurance and voluntary supplementary pension insurance.

Compulsory supplementary pension insurance (Pillar II in the classic three-pillar architecture) replaced the superannuated "privileged pensions" designed for those working in professions so demanding that they could not reasonably work until full retirement age.

Voluntary supplementary pension insurance is financed by voluntary retirement savings in individual accounts (Pillar III in the classic three-pillar architecture). Currently 55 percent of all persons insured under mandatory pension insurance (Pillar I) are also participating in voluntary supplementary pension insurance.

There are two kinds of voluntary supplementary pension insurance. The first is collective insurance, in which workers can be included via their employer, who fully or in part finances the pension scheme. The second is individual insurance, where the insured person pays his or her own contributions.

A special feature is that voluntary supplementary pension insurance includes only people insured or claiming rights under mandatory pension insurance. As it is based on defined contributions, longevity risk is on the insured person and gender equality is ensured with regards to the acquisition of the rights. The contributor (employer or individual person) is entitled to tax relief for the paid-in premiums. The insured person assumes the investment risk but there is a guaranteed minimum return.

Participation in supplementary pension insurance confers the right to receive a supplementary old-age pension at the age of 58, subject to having fulfilled conditions to receive a pension from Pillar I and having contributed for at least ten years to the supplementary pension scheme. Other rights include the right to an early supplementary old-age pension, a supplementary invalidity pension, and a supplementary survivor's pension. The insured

can withdraw from supplementary voluntary insurance at any time. The current (post-1999–2000 reform) system is shown in Figure 1 below.

Figure 1: Pension system in Slovenia						
PENSION SYS	PENSION SYSTEM IN SLOVENIA					
 A (modernized and modified) Bismarckian PAYGO defined benefit model. Benefits are provided by the Pension and Invalidity Insurance Institute - ZPIZ. 	 Compulsory and voluntary supplementary DC (pre) funded pension insurance Benefits are provided by financial intermediaries which must obtain a license from the public authorities 					
I. pillar	II. and III.pillar					
REGULATED BY SAME AND ONE LAW						
Source: Country Fiche Slovenia, submitted to AWG ¹						
1 The EPC's Working Group on Ageing Populations and Sustainability (AWG) is constituted to contribute to improving the quantitative assessment of the long-term sustainability of public finances and economic consequences of aging populations of the EU member states, so as to assist policy						

formation What is the EPC? ???????

Retirement age, average age of old-age pensioners, and years of contributory service

A basic parameter governing the finances of the pension system is the age of retirement. The statutory minimum retirement age has increased since 1992 every year by six months, and now amounts to a 40-year pension-qualifying period for men and a 35-year qualifying period for women. After the reform in 2000, the minimum qualifying period is 40 years for men and 38 years for women. Additionally, a full retirement age was introduced, set at 63 for men and 61 for women. See Figure 2.



The average effective (as opposed to statutory) retirement age was actually decreasing after 1992 despite the fact that the legal retirement age was increasing. In 2008 new retirees
entered retirement on average at age 60.8 in the case of men and 57.5 in the case of women. After the reforms were introduced in 2000, the observed average yearly increase in effective retirement age was 3 months, lower than the increase in the statutory retirement age. The effective retirement age for men is moderately stable from 2004 onwards.

	projected in 1996		atta	ined
LETO/TEAR	men	women	men	women
1996	57,5	54,0	57,5	54,0
1997	57,8	54,4	58,3	54,9
1998	58,0	54,8	58,4	55,3
1999	58,3	55,1	58,2	54,8
2000	58,5	55,5	59,2	55,4
2001	58,7	55,9	59,3	55,4
2002	58,8	56,3	59,9	55,5
2003	59,0	56,6	59,9	55,7
2004	59,2	57,0	60,6	56,6
2005	59,3	57,4	60,4	57,1
2006	59,5	57,8	60,3	57,2
2007	59,7	58,1	60,5	57,2
2008	59,8	58,5	60,8	57,5

Figure 3: Old-age retirement pattern



Sources: Institute of Pension and Invalidity Insurance of Slovenia , Statistical Office of Slovenia (SURS), and author's calculations.

Another parameter affecting pension system finances, and one linked to, among other things, effective retirement age, is the average age of old-age pensioners. The average age of retired people in 2007 was 69.1 years for men and 67.8 years for women, 6.5 and 2.7 years higher, respectively, than in 1996. This result is combined effect of higher effective retirement age and changes in population age structure. See Figure 4.



Figure 4: Age of old age pensioners

Sources: Institute of Pension and Invalidity Insurance of Slovenia, Statistical Office of Slovenia (SURS) and author's calculations.

The number of active insured people contributing to the system relative to the number of old-age pensioners receiving benefits is a key parameter in determining the financial viability of the system. See Figure 5.



In the rapidly growing economy between 2005 and 2008, the ratio of contributors to oldage pensioners increased. As shown in Figure 6, there was an especially significant increase in the number of contributors aged 55-64.



Figure 6: Decrease/increase of active insured people between 2005 and 2008

Sources: Institute of Pension and Invalidity Insurance of Slovenia, Statistical Office of Slovenia (SURS) and author's calculations.

In 2007, the average contributor was 40 years of age in the case of men and 40.5 in the case of women, with a combined average number of years of contributions of 17.5. The average number of years of contributory service increased in the three years between 2005 and 2007. However, the length of service diminished from 15 to 49 for men and from 15 to 44. After these ages, length of service increased (except for women aged 60 to 64). This warns us that contributions to pension insurance are being more and more postponed until older ages. In 2007, what is termed "density" of service (the ratio of actual contributory service years to potential ones) was very low in young ages and still low, by international standards, in ages from 35 to 54 years. See Figure 7.





Figure 7: Decrease/increase and density of service period

Sources: Institute of Pension and Invalidity Insurance of Slovenia, Statistical Office of Slovenia (SURS), and author's calculations.



CONTROLLING PENSION EXPENDITURES IN THE CONTEXT OF ENTRY INTO THE EUROZONE

After 2000, changes in the pension sector have been carefully coordinated with other measures undertaken in the process of preparing to adopt the Euro. The parameters adopted in the the 2000 reform ensured fiscal sustainability of the pension system. Although all of the White Paper's proposals were not adopted, the ratio of pension expenditure to GDP has remained about 10 percent.

Three factors were especially helpful. First, was that, unlike in some countries, there was no strict rule in Slovenia that the growth of pensions should equal the growth of wages. Second, the authorities pursued the principles of actuarial fairness: actuarial neutrality in the determination of the pension base and the equalization of the pension amount status of older retirees to the position of new retirees. Both measures, to be described below, passed a revision of the Constitutional court. Third, wage growth in the pubic sector has been moderate; as result, the nation-wide wage growth was below nominal productivity growth. In lieu of receiving wage increases, public servants received a paid-in contribution to a new supplementary pension account. In this way, the goals of developing supplementary pension coverage and moderating public sector wage growth were simultaneously pursued.

EFFECTS OF STATUTORY CHANGES AND POLICY MEASURES

In the period after 2000, the number of pension entitlements grew steadily. The number of all social insurance pension recipients increased in average yearly by 1.5 percent while the average annual rate of increase in the number of old age pensioners was in the same period 2.2 percent. See Figure 8.

When, after 1990, the inflation rate started to decline, the practice of adjusting pensions based on wage growth in previous months strongly increased the purchasing power of pensions. The perverse result was that pensions in some months were practically equal to wages, resulting in an average net replacement rate (really a "benefit ratio" of average pension relative to average wage) of 90 percent.



In response, a lower growth of pensions in comparison to wages was legislated. The rule has been adjusted several times on an ad hoc basis—sometimes pensions have gained too much purchasing power relative to wages, sometimes too little. The key to this policy has been flexibility.

In parallel with changes in the indexation of pensions, the Constitutional Court confirmed the principle of actuarial neutrality for new pension recipients. According to this principle, all else being equal and given mortality conditions, the nominal value of pension benefits will be the same at all retirement ages and for all years in which retirement occurs. The key to achieving actuarial neutrality is the formula used to calculate pensions.

year	replacement rate	Index 2000 = 100	year	replacement rate	Index 2000 = 100			
1985	66,5	88%	1997	74,3	99%			
1986	74,2	99%	1998	74,5	99%			
1987	84,4	112%	1999	75,8	101%			
1988	80,4	107%	2000	75,3	100%			
1989	80,0	106%	2001	73,2	97%			
1990	89,2	118%	2002	72,8	97%			
1991	73,6	98%	2003	71,1	94%			
1992	77,8	103%	2004	70,2	93%			
1993	73,9	98%	2005	69,1	92%			
1994	75,4	100%	2006	68,6	91%			
1995	76,2	101%	2007	67,1	89%			
1996	74,6	99%	2008	67,1	89%			





Sources: Institute of Pension and Invalidity Insurance of Slovenia and Statistical Office of Slovenia (SURS).

The current formula is complicated and in some ways inappropriate. The pension received depends on earnings, the reference period, age and sex, total accumulated accrual rates and the indexation formula used to adjust pension at retirement as the pensioner ages. Mathematically, this complicated formula could be expressed as follows:

- Pension = f{Pension base, Pension assessment period, bonuses and maluses, total accumulated accrual rate, indexation}
- Pension base = f{average earnings of the 18 best consecutive years, adjustment}
- Assessment period= f{working period, period with supplementary calculated periods, granted periods, purchased period}
- Bonuses and maluses =f{age, sex}
- Total accrual rate = f{age, sex, accumulated accrual rates before 2000, accumulated

accrual rates after 2000}

- Accrual rate before 2000 = f{ pension qualifying period, sex}
- Accrual rate after 2000 = f{ pension qualifying period, sex, age}
- Indexation = f {growth of gross wages, equalization of old and new accrual rates}

The *pension base* for an individual is calculated as the most favorable 18 years moving average of adjusted wages. The wage adjustment for each year is based on the growth rate of wages in Slovenia during the precise year up to a year before retirement. This is the *reference gross wage*.

The reference gross wage is, in a second step, implicitly taxed applying the sum of average personal income tax rate plus mandatory social security contribution rates in the year before retirement. The result is a *reference (virtual) net wage*.

In a third step, the reference net wage is additionally adjusted by applying the coefficient between the growth rate as it was used for the indexation of pensions and growth rate of wages in the last 18 years. So the *net pension base* is determined as reduced virtual net wage.⁴

In the next step, the *minimum and maximum* amount of net pension bases are determined; the amounts are adjusted each year by the same ratio as for pension indexation.

From 2006, the annual *indexation* of the retirement pension is equal to estimated (in November) growth rate of gross earnings in the current year (indexation factor).

The indexation factor is reduced by the *equalization coefficient*, which is the ratio of the total accrual rate for males with 40 years of service in the year before the current year and the total accrual rate for males with 40 years of service in the two years before the current year. This equalization is applied for all pensions, except for those assigned in the current year.

The yearly *accrual rate* has been reduced after 2000. It is now 1.5 percent per year, 0.5 percentage points less than before 2000. For persons now retiring, pre-2000 contibution years are valued at the old rate (2 percent) while contribution years after 2000 are valued at the new rate. The accumulation of accrual rates is not capped, that is, accrual continues for each year as the contributor continues to contribute. By this mechanism, new entrants in retirement have year-by-year lower average accrual rates for the same length of service.

The cumulative effect of the measures described above was from the fiscal point of view very favorable and has been an indirect support for sound monetary policy, which was required in the period of ERM. The share of pension expenditures in GDP did not increase—unlike other countries and contrary to expectations arising from demographic change—and even decreased.

During the period after 2000, the average yearly growth rate of the number of pension entitlements was 1.5 percent. As a result, the public expenditure for retirement provision should be in real terms higher each year for at least the same rate.

At that time, wage growth was the reference parameter for the growth of pensions. The combined effect of wage growth and increased number of pension rights should have led to the increased share of pension expenditure in GDP. Provided that the same replacement rate was to be maintained, pensions would be indexed to the rate of growth identical to that

⁴ As pensions during the period before 2008 were indexed by a lower growth rate as the wage growth rate was lower in that period, the reference (virtual) net wage is factually reduced.

of wages. In this case, the share of pension expenditure in the year 2008 would increase to 12.7 per cent of GDP. But for the period after 2000 the share decreased by 1.2 percentage points. What factors explain the result?

The equalization of old pensions to new ones (new ones are lower for the same period of service) reduced the growth rate of pension expenditures' implicit share by approximately 6 percentage points (from 28 percent to 22 percent). With this instrument share of pension expenditures was in year 2008 for 0.63 percentage point lower.

Year	Share of social insurance pensions* in GDP	Old age pension net re- placement rate	Actuarial reduction (art. 151)	Annual real GDP growth	Annual growth of pension entitle- ment	Total in- dexation reduc- tions	Implicit share of social insurance pensions in GDP **
1	2	3	4	5	6	7	8
2000	11.1%	75.3	100.0%	4.4	1.6	100.0%	11.1%
2001	11.0%	73.2	99.4%	2.8	1.5	98.7%	11.1%
2002	10.8%	72.8	98.8%	4.0	2.0	94.3%	11.5%
2003	10.6%	71.1	98.2%	2.8	1.7	91.4%	11.6%
2004	10.4%	70.2	97.6%	4.3	1.2	86.7%	11.8%
2005	10.4%	69.1	97.1%	4.3	1.4	81.8%	12.3%
2006	10.2%	68.6	96.5%	5.9	1.2	76.5%	12.6%
2007	9.7%	67.1	95.9%	6.8	1.5	70.9%	12.6%
2008	9.9%	67.1	95.3%	3.5	1.8	71.7%	12.7%

Table 3: Indexation impact on pension expenditures, 2000-08

Sources: For columns 2, 3, 5, and 6, Institute of Pension and Invalidity Insurance of Slovenia and Statistical Office of Slovenia (SURS); for columns 4, 7, and 8, author's calculations.

* Including old age, disability, survivor's pension; excluding expenditures (transfers) for health insurance for pensioners. Not including farmers' pensions, veterans' pensions, national (state) pensions, pensions for Slovenian citizens receiving pension from countries belonging to the former SFRY.

** Without indexation reduction and maintaining 2000 net replacement rate.

The fact that average wages grew slower than productivity explains an 8.5 percentage point decrease in the growth rate of the share of pension expenditures, which was 0.9 percentage point lower in 2008. The indexation formula, which should ensure equal growth of pensions and wages, was so restrictive in the period that it secured a percentage point lower share of pension expenditure in GDP compared to deriving the share only from the equalization factor. With less restrictive indexing the 2008 pension expenditure in GDP would have amounted to 11 percent (instead of 9.9 percent in case of current restriction).



Figure 10: Pension expenditures as a share in GDP and replacement rates

Sources: Table 3 and author's calculations.

SOCIAL INSURANCE PENSION LIABILITIES (OBLIGATIONS) AND REVENUES IN 2007

Expenditures (essentially, pensions and management costs) must match revenues (contributions, transfers from state budget, and income from assets in the social insurance as in other forms of institutionalized insurance). In 2007, the matching was achieved as follows:

- Pillar I pension benefits of euro 3.185 million (9.49 percent of GDP) were financed by contributions of euro 2.934 million (8.75 percent of GDP) and transfers from general government revenue of euro 251 million (0.75 percent of GDP).
- A transfer of this magnitude from the state budget is not a financial and fiscal problem. The problem will arise if and when economic activity and employment decrease significantly, which is the case now in time of economic downturn and will again be according to long-term projections—in the future.

LOOKING FORWARD: LONG-TERM PROJECTIONS TO 2060⁵

PILLAR I MANDATORY INSURANCE PENSIONS

According projections, pension expenditure will grow steadily and reach a peak in 2060. The main factor in determining the share of pension expenditure in GDP is the old-age dependency ratio. The increased pension expenditure in all subperiods is most influenced by changes in the age structure.

Table 4: The decomposition⁶ of main (components) drivers behind the dynamic of pension expenditure between 2007 and 2060 (in percentage points of GDP)

	2007–20	2020–30	2030–40	2040–50	205060	2008–60
Difference to the starting year 2007	1.13	2.18	2.88	2.09	0.44	8.61
Dependency ratio	3.17	2.39	2.72	1.99	0.12	10.24
Coverage ratio	-0.96	0.08	0.06	0.37	0.28	-0.15
?1/Employment rate	-0.33	0.08	0.11	-0.24	0.03	-0.31
Benefit ratio	-0.75	-0.37	-0.01	-0.03	0.01	-1.18

Source: Country fiche—Slovenia, submitted to AWG.

The main components of change are as follows:

- A *dependency effect* (or a population aging effect), which measures the changes in the dependency ratio over the projection period as the ratio of persons aged 65 and over to the population aged 15 to 64;
- An *employment effect* which measures changes in the share of the population of working age (15 to 64) relative to the number of the employed, that is, an inverse employment rate;
- A *coverage effect*, which measures changes in the share of pensioners relative to the population aged 65 and over. In effect, it measures the take-up of pensions relative to the number of old people;
- A *benefit effect*, which captures changes in the average pension relative to income; output per employed person.

During the period up to 2020, it is projected that pension expenditures will rise by 3.17 percentage points due to population aging alone. In the period 2007–20, the weight of the rising dependency ratio will diminish, but the dependency ratio will remain the most important variable driving pension spending as a share of GDP.

⁵ Data for pension expenditures and their shares in GDP are extracted from the standardized questionnaire for pension projections and from the country fiche submitted to the Ageing Working Group.

6	Pension Exp.	6 4 44 7 4 4 4 8 Population 55+	6 4 44 7 4 4 4 8 Number of Pensioners	6 4 44 7 4 4 4 8 Population 15 - 64	6 4 44 7 4 4 8 Average Pension
	GDP -	Population 15 - 64	Population 65+	Working People	GDP
					Working People

The component mitigating the effects of aging in the period to 2020 is the reduction of benefit ratio, which is expected to decline because of the effect of reducing the total accumulated accrual rates at retirement. However, the effect of the rising dependency ratio is expected to dominate, leading to an increase of pension expenditure by 1.13 percentage points of GDP in 2007–20.

However, the most intensive increase of pensions spending as a share of GDP is projected to occur after 2020, when no factors that would significantly reduce the impact of aging are present. If the decrease in the benefit ratio and the coverage ratio did not have a dampening impact in this period, the increase in expenditure would be even more pronounced.

VOLUNTARY SUPPLEMENTARY PENSION INSURANCE AFTER 2000 AND ASSETS IN KAD

After 2002, the number of persons with supplementary pension insurance has risen unevenly. In 2003, it was decided to start paying supplementary pension insurance for public servants as compensation for their slower wage growth. Around 150,000 new insured persons were included in the closed mutual pension fund for public employees. Currently around 55 percent of the active population has supplementary pension insurance. For details, see Figure 11.



	insurance operator						
At the end of the year	mutual pension funds	pension societies	insurance companies	total			
2001	15.905	65.990	0	81.895			
2002	31.539	103.760	37.745	173.044			
2003	36.573	130.702	43.188	210.463			
2004	195.138	143.443	38.349	376.930			
2006	219.292	127.713	104.753	451.758			
2007	231.396	142.658	117.012	491.066			
2008	239.433	150.251	125.448	515.132			





Source: Ministry of Labour, Family and Social Affairs, Ljubljana. Available at http://www.mddsz.gov.si/ en.

In the future, participation in collective pension insurance schemes is assumed to increase slowly from the present initial participation to approximately 70 percent of the employed population in 2030 and to remain at that level until 2060.

The average premium for supplementary insurance is relatively low; 45 euros in pension societies and 35 euros in mutual pension funds. These are assumed to rise over the projection period at the growth rate of labor productivity.

In 2007, assets of supplementary pension insurance represented 3.6 percent of GDP. Due to higher premiums and greater coverage of supplementary pension insurance, it is expected that by 2060, the share of the assets will amount to 27.4 percent of GDP.

Supplementary	Assets in supplement	Average monthly	
pension provision operators	Million euro, December 2008	As share of total assets in %	premium per insured person*
Insurance companies	264	22	41.11 euros
Pension societies	458	38	45.98 euros
Mutual pension funds	482	40	35.52 euros
TOTAL	1.204	100	

Table 5: Assets and average monthly premium per insured person

* For insurance companies and pension societies, data on premiums refer to average gross premium per insured person in the period January 1–December 31, 2008; for mutual pension funds premiums are net for year 2008. Source: Ministry of Labour, Family and Social Affairs, Ljubljana.

The first pensions from the voluntary supplementary insurance will be payable in 2011. As the additional pension should in future cover the inevitable decline in public pension benefits, the supplementary pension and the average amount of pensions should be much greater than they are at present.

Table 6: Projected gross premiums, annuities, and coverage in supplementary pension insurance

 (% of GDP)

	2000	2007	2020	2030	2040	2050	2060
Premiums	0.00	0.00	0.08	0.26	0.48	0.69	0.78
Annuities			1.85	2.34	2.84	3.25	3.52
Coverage		59.87	76.98	74.99	74.38	74.72	74.43

Source: Country fiche— Slovenia; submitted to AWG.

Other resources helping to supplement the future decreasing public pensions are assets from KAD received in the process of the privatization of state-owned assets. However, the assets from this "reserve demographic fund" are low, and assets from supplementary insurance and KAD cannot compensate for the shortfall of financial resources for public pensions.

Table	7: Assets	of pensio	on funds and	reserves (% of GDP)
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	2000	2007	2020	2030	2040	2050	2060
Public pension funds (KAD)	:	6.9	6.6	7.7	9.7	12.1	14.7
Supplementary pensions	:	3.6	12.2	18.0	22.7	25.9	27.2
Assets of pension funds and reserves	:	10.4	18.8	25.7	32.3	38.0	41.9

Source: Country fiche—Slovenia; submitted to AWG.

FINANCIAL AND SOCIAL SUSTAINABILITY OF PENSIONS

In 2009 the public finance situation has deteriorated substantially. The financial crisis has affected the real sector. Employment and/or wages have declined in real terms, and the budget deficit reached more than 6 percent of GDP.

Regarding pension policy, current events are disturbing, but the long term is even bleaker. In the future, the prolongation of life expectancy and reduced birth rates will substantially change the age structure of the population. From the public finance perspective, the consequence is a growing public expenditure (as an increasing implicit liability), which is not covered by explicit or even implicit revenues/assets.

Assuming that no structural reform is implemented to reduce aging costs, the debt level is projected to reach 386 percent of GDP in 2060. The fiscal primary balance turns negative from a surplus of 1.8 percent of GDP in 2008 into a deficit as early as 2021 and from then on keeps deteriorating to reach a deficit of 11.8 percent of GDP from 2060 onwards. Transfers from the state budget to pensions (the financing of taxes), which in 2007 represented 0.75 percent of GDP in the year 2027 would be 4 percentage points higher. During the year 2060 such transfers would exceed 10 percentage points. Clearly the "business as usual scenario" presented here is unsustainable; in the long term, the increase in transfers from the state budget cannot be expected to match the projections. The mechanism of subsidizing pension expenditures as the difference between contributions collected and pensions to be paid generates instability and unpredictability in budgeting and disturbs other public functions financed by general taxes. By requiring increased taxation and/or high public sector borrowing, this scenario carries with it the risk of reducing the competitiveness of economy and aggravating financial market conditions.



Source: Questionnaire—Slovenia; submitted to AWG.

Apart from compulsory social security contributions, the only resources available to finance pensions are assets (property) of the state and the accumulated savings of individuals. In 2060, it is projected that state assets and private saving of about 90 percent of GDP would be available to finance expenditures. In the case (which is not very likely), the state and individuals accumulate three times the amount of assets projected (two and a half times the annual value of GDP), the annual deficit will remain at only 3 percent of GDP, a financially sustainable pension level. The main problem is how to finance the acquisition of sufficient assets into such a fund. The formation of the capital in the demographic funds could come from the process of privatization (this is current practice in Slovenia), from the budgetary surpluses in particular years, and/or from earmarked taxes (contributions). The fund should not be tapped until pension expenditures could no longer be financed by contributions at the current contribution rates and taxes (state subsidies).

CONCLUSION

Even though the pension reform of 2000 is already yielding important results, further adjustments will be needed in order to avoid an unsustainable increase in pension expenditures. The outlook for pension provision is not promising: one can expect a decline in the pension benefit level, a rise of pension contribution rates, and/or prolongation of active (and contributing) life. The pension "balloon" will not burst tomorrow, but inaction today will cause serious difficulties in managing public functions and their financing in the future.

What could (and should) be an alternative policy or pending reforms?

- Decisions to retire and to accumulate retirement savings are made at the level of the individual. Public social insurance institutions should regularly inform individuals of their situation and prospects. They must become custodians of the rights of the insured person and their personal data.
- A more fundamental approach would be a change in the architecture of the public pension system. Family structures have evolved away from the model of the sole breadwinner in lifetime employment on which the Bismarckian approach was based. There are more and more atypical activities where contributions are not paid. There are also increasing subsidies from the state budget to the pension system. In these circumstances, the contributory public pillar needs to be strengthened by a "zero" pillar, with equal relatively low benefits for all residents of the appropriate age.



Figure 13: Zero pillar (floor) and recombination of social insurance pensions financing

Source: Dušan Kidrič, "Introduction of zero pillar financing in the new pension architecture,", 11th Banca d'Italia Workshop on Public Finance, Pension Reform, Fiscal Policy and Economic Performance, Perugia 2009.



Chapter 10

HEALTH SYSTEM REFORM IN SLOVENIA

Armin Fidler and Inez Mikkelsen-Lopez

DEMOGRAPHY

Life expectancy and fertility

Slovenia exhibits a relatively good level of overall health. Figure 1 shows that life expectancy at birth for both sexes combined in 2005 was 77.6 years, compared with 74 years in other new European Union (EU) member states in Central Europe (Slovakia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, and Poland).¹

Demographically, Slovenia faces a problem common to many other EU countries, particularly those in Southern and Eastern Europe. In these countries, according to the World Bank's World Development Indicators (WDI) online, fertility is in decline, crude birth rate has decreased from 15.7 per 1,000 population in 1980 to 9.4 in 2006), and the total fertility rate (TFR) in 2006 was 1.32 births per women, far below the replacement level, and common in other EU countries, most notably Germany, Austria, Hungary, or Italy.² Projections from the United Nations Population Division (2006) expect the population to decrease by 305,000 people by 2050—quite an important proportion for a small nation such as Slovenia. The major consequence of this is that Slovenia is facing an aging population, a problem that carries with it a number of implications for service needs, social services, financing and labor markets. Negative population growth can only be offset by an increase in fertility or an increase in immigration, both of magnitudes that seem socially and politically unlikely.

¹ Life expectancy, or more specifically life expectancy at birth, is a synthetic index measuring the number of years that a newborn would live if he or she passed through life exposed to the age-specific mortality rates observed in the reference year. It does not, importantly, measure the experience of an actual birth cohort.

² TFR is a synthetic index measuring the number of births that a woman would experience if she passed through her reproductive life span (typically 15–49) subject to the age-specific fertility rate observed in the reference year. It does not refer to a specific cohort and, indeed, has sometimes been biased by failing to capture "catch up" fertility in later life. "Replacement level" fertility is typically interpreted as a TFR of about 2.05.



Burden of disease

The index of international choice for characterizing population health is the burden of disease, which roughly speaking measures years of healthy life lost due to various diseases. However, this measure, which requires fairly sophisticated data to estimate and is subject to a long list of restrictive assumptions, is not available for Slovenia. Fortunately, the cause of the structure of mortality, a much more simply interpreted (and very closely related) measure, is known with great accuracy in Slovenia thanks to an excellent vital registration system.

According to the World Health Organization's (WHO) Health For All database, the leading cause of death in Slovenia in 2005 was diseases of the circulatory system. Such diseases caused around 39 percent of all deaths, followed by neoplasms/cancer (27 percent) and then diseases of the respiratory system (7 percent). This situation is similar to that of the more developed EU countries, where the leading causes of death during the same period were also diseases of the circulatory system (35 percent), followed by neoplasms (28 percent) and respiratory diseases (8 percent). Only 1 percent of deaths in Slovenia was attributable to infectious diseases in 2005. The low incidence of communicable diseases is a result of the historically good immunization coverage and aggressive communicable disease control programs over the past decades, a tribute to Slovenia's historic focus on public health and its extensive network of public health institutes, an inheritance from its Yugoslav past. The "epidemiological transition"—the changes from a morbidity/mortality structure dominated by communicable diseases to one dominated by noncommunicable, often chronic diseases, is essentially complete in Slovenia.

Like the other countries in Central Europe, Slovenia suffers from a disproportionately high incidence of alcohol-related diseases. For example, in 2005, Slovenia had more than 23 deaths per 100,000 of the population due to liver diseases, compared to an EU average of

14 deaths per 100,000 (HFA database). Slovenia has also consistently exhibited one of the highest rates of suicides in the world (a fact that may not be unrelated to the high prevalence of alcohol abuse)³¹), around 19 suicides and self inflicted injury per 100,000 inhabitants in 2005, much higher than the EU average of about 10 suicides and self inflicted injuries per 100,000 (HFA database). These suicide rates vary widely across the region, and explain to some extent the gap in life expectancy of four years between the best and worst performing regions within Slovenia (Statistical Office of the Republic of Slovenia, 2006). Despite these notable problem areas, Slovenia's population's overall health status is good compared to international standards and one of the best among the new EU member states.

${f T}$ HE SLOVENIAN HEALTH SYSTEM

Slovenia has built a relatively stable and modern health care system, comparable in its performance to those in the more affluent EU countries, which is a much more positive performance compared with other new EU member states (see Table 1). The public-private expenditure shares are similar. Out-of-pocket expenditure as a share of private health care spending, at 45 percent, is actually lower in Slovenia than elsewhere in the EU.

	Health expenditure, public (Percent of total health expenditure)	Health expenditure, private (Percent of total health expenditure)	Out-of-pocket health expenditure (Percent of private expenditure on health)	Hospital beds (Per 1,000 people)
Austria	75.9	24.1	65.8	7.6
France	79.7	20.3	33.2	
Germany	76.9	23.1	57.1	8.3
Italy	77.2	22.8	88.5	3.9
Slovenia	72.2	27.8	42.5	4.8
Spain	71.2	28.8	74.7	3.4
Sweden	81.7	18.3	87.9	
United Kingdom	87.3	12.7	91.7	
Euro area	76.9	23.1	60.0	
Old EU ¹ I/	75.7	24.3	69.5	7.1
New EU ² 2/	69.1	30.9	87.2	6.6

 Table 1: Selected indicators of the health system of Slovenia compared to various EU countries,

 2006

Source: World Bank, World Development Indicators online.

1 "Old EU:" Fifteen countries that had joined the EU prior to the admission of the former Eastern bloc countries.

2 "New EU:" Ten new member states (EU10): Slovenia, Slovakia, Czech Republic, Poland, Hungary, Estonia, Latvia, Lithuania, Romania, and Bulgaria. Malta and Cyprus, which joined the EU at the same time, are not considered here.

^{3 &}quot;Facing the Challenges, Building Solutions," briefing at WHO European Ministerial Conference on, Mental Health, Helsinki, January 12–15, 2005.

As in other new member states, the number of hospitals per 100,000 inhabitants has risen (Figure 2) and in 2005 was just under 1.5 hospitals per 100,000. However, Slovenia has far fewer hospitals per 100,000 inhabitants than the EU or OECD average of around 3 hospitals per 100,000 inhabitants).. Slovenia is also performing better than most other new member states with regard to access to health care, quality of care and consumer satisfaction with health services. Health expenditure as a percentage of GDP has remained relatively constant from 2000 to 2005 at around 8.5 percent (Figure 3), which is just below the OECD average. But this is much higher than the other EU new members which have health expenditures as a percentage of GDP of around 6.5 percent on average.



Figure 2: Number of Hospitals per 100,000 population across selected countries 1990-

This positive situation needs to be put in the context of structural transition away from socialism. Following independence in 1992, Slovenia's health care system emerged in a fashion similar to other health systems in transition economies, namely based on a centrally planned and a largely publicly owned health system. At the time of independence, the inherited health system was relatively expensive (compared to other countries in Central and South-Eastern Europe), suffered from outdated management practices, and featured a somewhat overextended, mostly input-based hospital network with misaligned incentives for its production function, further exacerbated by a generous benefit package and many non-health-related fringe benefits covered by the public social insurance system. This very quickly resulted in serious funding bottlenecks for health care and public health and highlighted the urgent need for more drastic changes in health care financing, which came about in the form of the "Law of Health Care" in 1992 (see Box 1).

The 1992 Law of Health Care reduced public financing of health services and introduced copayments for most of them. As a result, the health system became more decentralized as private companies started to provide complementary health insurance. However, the extent of decentralization was limited, as local governments failed to make full use of their new autonomy and hospitals were not able to take full advantage of their greater managerial capacity (European Observatory, 2008; WHO, 2006). This is in line with the experience of other countries where decentralization of the health sector proved to be technically and administratively quite complex and not easy to implement quickly. The Law of Health Care also introduced a Bismarckian type of social insurance, which was based on contributions from employers and the work force.

Box 1: The Law of Health Care

- Introduces compulsory (statutory) and voluntary (complementary) health insurance
- Government in charge of design, monitoring, education of health staff and coordination. It owns institutions at secondary and tertiary levels
- Municipalities become owners of health centers (Dom Zdravlje) at primary level within regions
- Health Insurance Institute of Slovenia was set up to manage compulsory health insurance, collect revenues and maintain contracts with health providers
- Individuals have the right to choose a doctor at the primary level

Almost all hospitals in Slovenia are still state-owned. In 2006, there were 26 public hospitals and 12 specialized hospitals (WHO, 2006). As Table 1 illustrates, the number of hospital beds per 1,000 population in 2005 was only 4.8 beds, much lower than other EU countries. This is a reduction from 1993 when there were 5.8 beds per 1,000 population (World Bank,WDI online). This diminished number of beds is a result of decentralization policies and a change in incentives, which encouraged hospitals to become more outpatient-oriented, reducing the number of beds and the average length of stay, which is now eight days (lower than the EU average of ten days) (WHO, 2006). In 2005, there were almost 2.4 physicians per 1,000 population, somewhat lower than the EU average of 3.2 per 1,000 (HFA database).

A mixture of state and private providers provides health services in Slovenia. However, around 75 percent of the total health workforce is state-employed (European Observatory, 2008). The Ministry of Health is responsible for the pricing of pharmaceuticals based on prices in other EU countries. The decision as to whether a drug is reimbursed or not by the Health Insurance Institute of Slovenia (HIIS) hinges on whether it is on the positive list. A drug committee comprising various representatives makes this decision. Drugs on the positive list (around 1,250) are reimbursed up to 75–100 percent of the cost by statutory health insurance (Fürst, 2003). Other drugs on the intermediate list (around 350) are reimbursed by around 25 percent of the cost by the statutory health insurance; the rest has to be covered by complementary insurance or out-of-pocket. Currently, measures are being taken to monitor the volume of drugs prescribed by physicians and new legislation is being implemented to improve the quality of drug labeling and packaging, in order to approach the standards of developed EU countries (WHO, 2006).



Figure 3: Total Health Expenditure as a % of GDP across selected countries, 2000-2005

The public portion of health financing is predominantly administered by the HIIS, which was set up in 1992. The HIIS is a nongovernmental entity with its own governance arrangements and the ability to borrow from capital markets. It is similar in its institutional mandate and setup to the Bismarckian health insurance agencies in Germany and Austria. Although the HIIS is under the supervision of the Ministry of Health, it operates independently of the government. The HIIS is responsible for managing compulsory health insurance, which covers nearly the entire population. Employers and employees fund this statutory health insurance, with employers paying 6.56 percent plus 0.53 percent (to cover work injuries) and employees paying 6.36 percent of their gross salary (European Observatory, 2008). The compulsory health insurance plan covers a large variety of services at a 100 percent reimbursement rate. Such services include: treatment and rehabilitation for diseases and injuries suffered by children; counseling in family planning and obstetric care; preventative care and treatment of infectious diseases; treatment and rehabilitation for occupational disease or injuries; mental diseases; and costs associated with organ donations and transplants and long-term (including nursing) care. It also covers a significant proportion of other treatments such as urgent surgery abroad (in case the service cannot be performed in Slovenia), dialysis, fertility procedures, and even spa treatments of injuries, which are not work-related (European Observatory, 2008)

Private sources of funding for health are composed of "Voluntary Health Insurance" (VHI—around 55 percent) and out-of-pocket expenditures (around 45 percent). VHI was introduced in 1992 in the form of a company named Vzajemna (managed by the HIIS but now independent from it) and now also includes two other main private companies, Adriatic and Triglav. Although the private health insurance market is meant to be competitive, Vzajemna had the majority share. Data from 2002 show it to have over 1.1 million members and more than 80 percent of the market share. VHI is taken out to cover the substantial copayments, which are not fully covered by compulsory health insurance. It also covers a number of

other treatments that are not included in compulsory health insurance coverage (European Observatory, 2008). Therefore, nearly the entire population took out complementary insurance to avoid high copayments at the point of service. Data from 1992 show that VHI amounted to 1.5 percent of monthly net salary. However in 2000 this had increased to 2.5 percent (Rupel, 2006).

In addition to complementary VHI there is also an option for additional supplementary VHI (taken out only by a small fraction of the population), which covers a higher standard of care and offers more choices (shorter waiting times, better hospital accommodation and hotel services, and so on) (European Observatory, 2008). The same insurance companies that offered complementary VHI also offered this service (Box 2)

Box. 2: Health Insurance Plans

Compulsory health insurance: Covers medically needed basic health services;, however, copayments are required for most services (especially for adults).

Complementary health insurance: Additional insurance which covers needed medical services that are explicitly excluded or not fully covered by the statutory health insurance.

Supplementary health insurance: A premium health insurance that allows people to upgrade to better hotel standards, increase choice of providers, and have shorter waiting periods. Does not affect the package of medically necessary interventions.

The other source of private funding are out-of-pocket payments which are direct payments made for something not covered by either form of insurance, for example, services from private doctors who have not signed a contract with HIIS, or specialist care without a GP referral, or private dentistry or elective cosmetic surgery (European Observatory, 2008). Out-of-pocket financed health care also addresses direct payments for pharmaceuticals not included in the positive list, luxury accommodations, and select food during treatments in private wards.

SYSTEMIC ISSUES FACING THE HEALTH SECTOR

Structural weaknesses

Slovenia's health sector has historically fared well when compared to other transition countries in Europe, particularly in relation to its level of economic development. However, there were lingering concerns on the part of a number of stakeholders that there were some flaws in the system, threatening to disrupt the relative stability of health financing. These concerns became immediately apparent after independence was gained, and grew all the more salient at the turn of the millennium. The pressures facing the health system were to some degree linked to the inherited former Yugoslav system, with its generous benefit package, including an array of non-health-related fringe benefits, an overextended and inputbased hospital network, a public health infrastructure large in size but lacking the capacity to generate data for decision-making and priority setting, and an overall management culture suffering from substantial inefficiencies and lack of human resource capacity. However, as it developed rapidly during the years following EU accession, Slovenia experienced robust and sustained economic growth. It was, therefore, not surprising that health workers began to demand higher salaries closer to those in other EU countries. Likewise, patients began demanding higher quality and more modern medical care, featuring state-of-the-art medical technology and new brand-name pharmaceuticals. Furthermore, despite the large amount of data collected by the central government and the extensive network of public health institutes, there was little capacity for analysis of epidemiologic, demographic, and economic data in a format and with the timeliness for priority setting and decision making in the health sector, coupled with a lack of capacity for any formal economic evaluation of health system performance. Therefore, the challenges of the past, defined by increasing publicly financed health spending and growing consumer demand, coupled with the need to invest in modern medical technology and pharmaceuticals as well as wage pressures for health workers, all suggested that the health sector in Slovenia (just as in other new member states of the EU) would face rapidly rising costs. This, as in other EU countries and in particular in the new member states, had the potential to lead to considerable internal debt and potential contingent liabilities, which in turn could have negatively affected the path of fiscal austerity and prudent debt management pursued by Slovenia's Ministry of Finance. Furthermore, noncompliance with EU-defined Maastricht criteria threatened to hamper Slovenia's hope of a quick adoption of the Euro currency once the accession process was complete. Hence, pressures from within the health sector, from consumers, and from a fiscal perspective made it clear that some degree of reform was needed and inevitable.

The health reform

After the initial health reform started in 1992, following the implementation of the Law of Health Care, Slovenia's health system shifted to a more patient-oriented system, encouraged privatization, introduced patient-choice of physicians, and improved the financing and management of health care (WHO, 2006). However a deeper and more substantive reform was needed. This became clear in 1998 when a World Bank preparation mission estimated (using a forecasting model) that the HIIS (which at the time of the analysis still was breaking even) would not be able to sustain current spending and would eventually wind up in debt (the negative balance of the health insurance revenue would be around -21.4 percent) (HIC, 1998). This debt would potentially create a contingent liability for the government. Other estimates from the forecasting model using various realistic scenarios, which included shorter lengths of hospital stays, reduced staff numbers and somewhat higher drug prices, still predicted a debt to the health insurance balance in 2005 between 3 percent and 20 percent based on various possible scenarios. This indicated that Slovenia's health sector was in urgent need of reform and formed the basisfor a World Bank project and consecutive loan, to be implemented in the following years.

A World Bank program was designed and implemented from 1999 to 2004. The aim of the project was to help the health system sustain performance in the face of adverse demographic (aging of the population) and epidemiological (preponderance of chronic diseases) trends, addressing increases in health resource prices and rising public and health provider

expectations. The activities involved all stakeholders in the health sector, most notably the Ministry of Finance, Ministry of Health, Health Insurance Fund, Medical Chamber, the Clinical Center of Ljubljana, as well as some district hospitals and the Health Council. The project's objectives featured improved sharing of information, better management methods, payment systems, and the preparation of clinical guidelines.

The World Bank project created a new platform for a deeper and more expansive sector dialogue among key stakeholders, who, in the process of project preparation, realized that they needed to improve information management and analysis regarding epidemiological trends, clinical procedures, decision-making, financial spending, and economic management. Stakeholders agreed that once the imbalances became apparent through improved transparency and better information-management, there would be political buy-in from different constituencies and reform would become inevitable. Another result of the project was that the communication among stakeholders and ministries improved considerably, as the project created a new platform for debate, collaboration, and exchange. Furthermore, many decisions supported by the project will be of long-term benefit to health sector management and performance, such as the implementation of a prospective hospital payment mechanism (the clinical pathway and Diagnosis Related Group or DRG model for financing hospital services as opposed to sole input financing) which changed the incentive structure and improved hospital performance and the quality of clinical procedures.

Box 3: The Health White Paper of 2002

The White Paper was one of the first triggers for a debate on alternative health sector reforms. The goals of the reforms were to maintain Slovenia's strong social insurance and health care equity stance, where health care is regarded as a right for all citizens, not a market commodity. The reasons behind the need for reform were that health care costs were increasing rapidly due to new costly technology and the service needs of an aging population.

The aims of the health sector reform were based on four pillars: fairness, accessibility, quality and efficiency, which developed into six objectives of the White Paper Reform

Fairness in allocating funds to health care. Abolish copayments for compulsory insurance and redefine the services that are covered fully so as to include all basic services. This will mean that VHI will become truly voluntary, rather than a virtual necessity.
 Distributing collected funds according to the needs of the citizen.: Introduce a new financial resource allocation model, based on the needs to citizens, where payment to providers is based on quality of service and satisfaction of the patient.

3) Improving access to health care services. Guaranteed basic health benefits package without additional need for copayments. Reallocation of funds to reduce waiting times for complex treatments and shorter diagnostic procedures.

4) **Development of a total quality management system.** Establishment of an independent quality institution to monitor health care and managements. Develop clinical guidelines, improve monitoring and evaluation, and ensure a more transparent evaluation.

5) *Improving effectiveness in regulating and managing the health system*. Clearer role of the state with regards to regulation of the health care system. Better training for management.

6) Strengthening public health service.: Developing a school of public health, strengthening the activities of the institute of public health.

Center of Excellence in Finance

One of the key milestones of health reform in Slovenia took place in 2002 when the Ministry of Health produced a "hite Paper" (Keber and others, 2003) that identified which changes would be needed from the perspective of a reform minded Ministry of Health. The main reforms proposed are presented in Box 3.

One of the more substantive changes proposed by the White Paper was restructuring the health financing and delivery system, with emphasis on re-balancing health insurance, the management of health care institutions, and introducing total quality management in clinical practice. According to the White Paper's authors, shortening current waiting periods for elective surgery within the existing funding envelope could also bring about improved access to services.

The most controversial issue in the White Paper was the proposal to abolish complementary health insurance in Slovenia. In the Ministry's view, the benefit package financed by compulsory health insurance and the services financed by complementary VHI insurance were inseparable from a clinical perspective. The White Paper's authors argued that an enlarged statutory insurance package should cover all citizens, without the need to take out expensive complementary insurance. The current arrangement of complementary insurance was deemed to not be fully voluntary (as those citizens who were not protected by additional complementary coverage were facing large gaps in coverage and/or substantial copayments and deductibles). It was also argued that as the premia for complementary insurance were flat (hence the same for everyone, regardless of ability to pay), they were regressive in nature as lower-income households had to pay a higher percentage of their disposable income for the same level of health insurance and social protection. This was deemed inequitable. People with high incomes were able to afford complementary insurance, while those with lower income would have to forgo certain benefits, or pay out of pocket at the point of service. Therefore, complementary insurance was viewed in many circles as discriminating against people on low incomes (European Observatory, 2008). Furthermore, complementary insurance resulted in people who needed more health treatments having to pay more, a state of affairs at odds with the country's strong egalitarian philosophy. However, the White Paper argued that, if compulsory insurance covered essentially all medical needs, based on evidence-based medicine, then there would be no further need for complementary insurance. A supplementary insurance market would continue to cover such services as are not necessary and would include both better hotel services and more choice. It was proposed that the plan to abolish complementary VHI be offset by an increase in contribution rates for compulsory health insurance (around 0.6 percent of gross pay) to be paid by both employers and employees. This plan garnered the support of a large majority of the public (European Observatory, 2008).

The key outcomes of such a reform, as expected by the authors of the White Paper, would be that the citizens have more equal access to health care, enjoy shorter waiting periods, and ultimately a higher quality of care, while the HIIS would benefit from a more developed health system and hopefully better levels of health in the long run (European Observatory, 2008). Various groups challenged the suggestions made by the White Paper. Obviously, the insurance companies offering VHI opposed the reform, as this would remove the rationale for their business model. Some economists also argued that the expansion of publicly financed health insurance would threaten public financial stability. Employers also opposed the concept, as this would increase their labor costs and thus reduce competitiveness, particularly in view of the upcoming EU enlargement and the challenges of the common EU market place. Labor unions were opposed as they claimed that their wages would be lower due to the higher contribution rates (European Observatory, 2008). Probably one of the most important arguments of those opposing any change in the health insurance arrangement (principally the Ministry of Finance and the IMF) was the notion that abolishing voluntary complementary insurance and the ensuing extension of the basic benefit package could upset fragile labor markets by increasing the tax wedge on labor, a factor that might weaken the positive outlook on public finance and would thus endanger the expected compliance with Maastricht criteria. Also, opponents of the White Paper reform plan suggested that an increased share of public financing for health insurance would lead inevitably to cuts in other areas of public spending (European Observatory, 2008)—understanding that during such times the public finance envelope was a "zero sum game."

In summary, the White Paper set forth options for future health sector reforms and suggested policy directions, which were difficult to implement at the time, but could be taken up in the future. However, the paper paved the way for future reforms and contributed to a healthy debate about health sector reform options in Slovenia. The policy discussions involved all stakeholders and constituencies, but were deemed somewhat premature as Slovenia was thought of as already performing relatively well compared with other EU accession countries at the time in terms of economic performance, compliance with Maastricht criteria and with regard to objective performance of the health sector. Furthermore, it was perceived that the time was not right, from a political and economic perspective, to embark on a technically complex and politically potentially risky reform of health financing. Against this backdrop, the Ministry of Health and its allies had difficulty convincing the government that the principal reform path for health insurance as featured in the White Paper should be implemented at the time.

The health sector and overall fiscal performance are closely linked and can have considerable mutual impact. For example, in 2000 (as had been predicted) the HIIS ran into debt as a result of increased wages for health care personnel and the introduction of value-added tax (VAT), which increased the HIIS's overall expenditures. Because of the higher expenditures and unchanged contribution rates for compulsory health insurance, HIIS accumulated a financial deficit until the year 2004. This internal debt in the HIIS caused some concern for those preparing Slovenia for EU accession in 2004 as it made it all the more difficult to comply with the Maastricht criteria's stipulation regarding external and internal debts.

Box 4: Further Reforms

- In 2007, new ideas for insurance reform in Slovenia suggested that people in low-income quintiles should be exempted from any copayments, the contributions rates should increase for some groups, in particular for farmers, payments covering accidents from extreme sports should be reduced, and so on.
- Recently, Slovenia followed the trend of most of Europe and other developed countries by introducing a ban on smoking in public places from August 2007.

Since the White Paper in 2002, no further major structural reforms have been suggested, probably due to the fact that Slovenia was entering into the EU and the Euro area, with the government trying to maintain stability in all sectors. Only very recently have some new

Center of Excellence in Finance

reforms in the insurance area been discussed and some elements implemented (Box 4), illustrating Slovenia's continued attempt to match the more affluent "old" EU member states' health profiles. Following the reforms made to the compulsory health insurance, changes were made in 2005 to the complementary health insurance market. Those changes meant that the insurance business no longer depended on the risk structure of clients, but more on the ability of the insurance companies to perform efficiently (European Observatory, 2008). The reforms also required companies to re-invest 50 percent of their profits into either improving the benefit package for clients, or to reduce insurance premia (European Observatory, 2008). The consequence of this was more of a level playing field that allowed new companies to enter the private health insurance market along with more competition and hence improved consumer service.

FISCAL IMPACTS AND LONG-TERM CHALLENGES FOR THE SLOVENIAN HEALTH SECTOR

In 2004, just before entry into the EU, the total deficit of the HIIS had peaked and was of major concern for the Ministry of Finance as it had to find a way to

balance health sector demands while at the same time assuring continued fiscal stability. In order to do this, the HIIS was forced to take out loans from the public treasury to cover

its deficit and to ensure stable payment for health care services, roughly calculated to be around 0.5 percent of GDP. Therefore, the government did not allow the HIIS to take out any future loans for restructuring (European Observatory, 2008). This limitation imposed by the Ministry of Finance provided an incentive for the HIIS to improve its management processes and, in particular, its contracting agreements. Future additional financing for compulsory health insurance was now dependent on GDP growth, the performance of labor markets, employment, and the economic development of the country as a whole. Since then, the HIIS has operated without accumulating deficits and even managed to have a small surplus, which the organization intends to use to reduce waiting time periods for elective surgery (European Observatory, 2008).

Slovenia managed to maintain fiscal stability and to overcome its contingent liabilities and debt in the health sector through a mixture of conservative fiscal management, good governance of the HIIS, as well as close scrutiny and informed oversight by the Ministry of Finance. These policies consistently applied during the accession years eventually allowed for early and sustained compliance with Maastricht goals. It was the strict financial management of debt crisis that distinguished Slovenia from other new member states. In contrast to other new member states, where the fiscal performance of the health sector (often in addition to the pension system) was one of the key concerns for compliance with Maastricht, Slovenia succeeded in averting this problem as prudent fiscal management prevented the health sector from becoming a serious fiscal burden. However, on the downside, the rather regressive insurance modality continues to be a concern and has yet to be addressed. While Slovenia has made significant progress in health care reforms, several areas require urgent attention: long-term care, rationalization of the hospital system, the health care workforce, and pharmaceuticals.

Long-term care financing and service delivery will need to be fully integrated into the continuum of care

Health expenditures may increase as the population grows older, depending on their health status and service needs from the health sector, but the link between population age structure and health spending is not as simple as many believe. As Figure 5 indicates, it is not age itself which necessarily increases health expenditures, but rather the proximity to death (or the amount of years spent in bad health before death). Much more robust than the relationship between population age structure and overall health spending is the link between population age structure and expenditure on long-term care. In recent years, about 15 percent of total health spending in the EU15 has been allocated to long-term care (Zweifel and others, 2004).

Given the projected demographic change, the EU Commission estimates that in the EU8 the elderly dependent population will increase by 70 percent between and 2050, with important increases in expenditures for long-term care nursing as a proportion of total health expenditures. Based on demographic and epidemiological projections seen in Figures 6 and 7 Slovenia is clearly also in this league and must prepare itself with all speed to face increasing about of dependents and thus health care costs. Over the next few years a sustainable financing platform for long-term care has to be created (either budget-based or payroll-based, with potential private coinsurance), an equitable access system has to be established (usually based on disability categories) and an institution-based and home-based service network has to be linked with the acute care health system in order to guarantee seamless care for those in need.





Figure 6: Distribution of dependents and associated public expenditures for selected ECA countries (CZ, LT, LV, PL, SI, SV) with an *increase in formal rather than informal care:* costs increase threefold (Estimates and projections: EU Commission - ECFIN)



	Institutional	Home-based	Ratio home-based to institutional
Sweden	62,972	16,579	0.26
Luxembourg	37,199	16,410	0.44
Ireland	24,477	3,887	0.16
Finland	24,343	10,097	0.41
Netherlands	23,129		
Denmark	23,129	7,947	0.34
Italy	19,352	9,717	0.50
Germany	18,517	3,886	0.21
Slovenia	13,260	440	0.03
United Kingdom	12,824	21,856	1.70
Belgium	9,067	6,520	0.72
Spain	8,275	2,832	0.34
Latvia	3,945	731	0.19
Slovakia	2,970	1,219	0.41
Lithuania	1,878	312	0.17
Malta	1,732	588	0.34
Czech Republic	1,270	1,792	1.41
Poland	1,160	91	0.08
EU Average	16,083	6,171	0.38
Average EU-15 countries	23,935	9,973	0.42
Average EU-10 countries	3,745	739	0.20
Ratio EU-15 av. to EU-10 av.	6.391	3.50	2.11

Table 2: Long-term care in home and institutions (EU, 2006)

Source: World Bank, 2008.

Slovenia does not currently have a uniform system of long-term care for the elderly, chronically ill, and disabled, as seen from Table 2. Moreover, Slovenia has one of the lowest ratios of home-based care compared to institutional care. As in some of the other new members states, all too often this absence of any formal arrangement results by default in prolonged hospitalization in an acute care setting at high cost to the system and with inappropriate quality standards for the patient. Moreover, this behavior distorts productivity indicators for the hospital network.

Depending on the features of the long-term care system, in some countries the availability of conditional cash benefits (based on disability categories) has resulted in a robust private market response in communities, creating an array of home-based services such as nursing services, food provision, physical therapy, mental health services, and cleaning.

Against this backdrop, the National Assembly adopted a resolution in 2006 to introduce a National Social Protection Program (2006–10) with some ambitious goals and a sound framework for performance indicators and targets. However, there is as yet no set of formal evaluation criteria available to gauge whether or not this program is on track. A law for longterm care financing, based on the same principles as the health insurance system (solidarity and mutuality with user coresponsibility) is currently under preparation. In principle, these policies are sound and are complemented with appropriate targets and indicators. But implementation is slow, and major investments in infrastructure, human resources, and capacity building will be required in addition to a new long-term care financing and insurance system.

The modernization and integration of the hospital network needs to be continued

The hospital network in any country is the cornerstone of the health system. Hospitals in most health systems also are responsible for the lion's share of the available health budget. The hospital network in most Central European countries is historically publicly owned and often still publicly operated. When health care financing becomes an issue, often hospitals are at the center of the debate. This problem is increasingly recognized in EU countries. Recent reforms in France have created regional hospital agencies, linking the planning function with the social insurance funds in structures that have successfully introduced major changes in the configuration of hospital services (McKee and Healy, 2002). A debt crisis facing municipal hospitals in Austria led to the establishment of provincial holding companies, whereby municipalities give up ownership of hospitals to state holdings. (Fidler and others., 2007) They thus created efficiency through consolidated management and purchasing and the ability to restructure an entire network as opposed to a single facility.

Many countries have adopted new provider payment mechanisms. In particular, there has been considerable enthusiasm for systems based on diagnosis-related groups (DRGs). Two issues arise, the first being the law of unintended consequences. In Hungary, for example, the introduction of a DRG-based system led (as was expected) to a reduction in length of stay, but also to a rise in the number of admissions as hospitals compensated for the lower payments they were receiving for each admission (Orosz and Hollo, 2001). According to what can be gleaned from international literature on the subject, there seems to be an emerging consensus to the effect that the optimal hospital size is between 300 and 600 beds, with diseconomies of scale emerging for smaller and much larger units (Derveaux and others, 1994; Posnett, 2002). This and other political, economic, and technical pressures in other countries have led to consolidation of hospitals, either into networks to achieve economies of scale, horizontal integration, and/or to the creation of centers of excellence by concentrating clinical specialties in one site and thereby increasing volume, quality, and cost-effectiveness (Fidler and others., 2007).

In addition to changes driven by economics, there are also outside pressures that will increasingly affect hospitals: Demographic and epidemiological changes and changing risk factors in society will require a vastly different service mix than what existed a mere few decades ago. Slovenia in particular, given the trends in aging, will require more units for geriatric care and orthopedic surgery, and fewer departments for obstetrics and pediatrics.

In Slovenia one could likewise consider a more corporate approach to health care delivery including, but not limited to, the introduction of public-private partnerships as an alternative to the current public ownership and public management of the hospital network. This can be achieved not only with regard to ownership of facilities under contract by the HIF, but also with regard to a reorientation of the health system to its core business. All ancillary services, such as cleaning, security, parking, food services, and laundry, as well as paramedical services such as laboratory, imaging, and sterilization can be outsourced. Such decisions, however, have to be made based on sound economic analyses, and information on the availability of such services at sufficient capacity on local markets. However, the recent experience of the State of Vorarlberg in Austria demonstrates that it is good business to centralize and outsource sterilization services through a public private partnership with the ability to even sell services to neighboring countries.

The health workforce, skills mix and wage structure need to be seen from the perspective of a more e xpanded European marketplace

There is much evidence that there is potential for further growth in Slovenia's health care labor market, as compared to EU levels. Very closely related to the anticipated demographic changes and the increasing demand for health (and long-term care) services, is the health labor market. As in many other EU countries, the health sector may contribute substantially to future jobs growth. For example, the number of physicians per 100,000 inhabitants has increased from around 199.19 per 100,000 in 1990 to 236.02 in 2005 (WDI online). There is some evidence that overall productivity in the sector has increased, which is also in line with the rest of EU countries and with the attempts of sector modernization over the past years. As Figure 9 shows, the number of employees in the health and social sector reduced a little from 2000 to 2002; however, the years 2002–06 show an increasing trend. With regard to self-employment, there seems to be an increasing trend from 2000 to 2007.



Furthermore, health worker salaries are increasing as their numbers grow (see Figure 8). However, as seen in the figure, there is still a large and persistent salary gap between health workers in Austria and Slovenia, suggesting that in the future there may be more
demands put on the health system to increase wages in the Slovenian health sector. This is of concern, since in Slovenia at present, salaries for health staff account for 40 percent of total public spending (Chakraborty and others., 2005) on health, and therefore a combination of increasing proportion of health staff together with rising wages is likely to raise labor costs substantially.



Figure 8: Percentage of those employed in health and social work out of total labour

In 2003, the ratio of physician salaries to the national average in Slovenia was 1.22, which is far lower than the ratio of 2 in the EU15 countries, suggesting that salaries for physicians may increase more as they demand salaries more in line with the developed EU countries (Chawla, 2007). As in other EU countries, however, we can expect the cost of medical technology to rise more rapidly than personnel costs. For this reason along with reasons having to do with the growth potential of modern medical technology (including pharmaceuticals) in Slovenia, the need for appropriate health technology assessment is critical

Pricing and quality elements in the pharmaceutical sector need to be brought in line with EU best practice

Pharmaceuticals are another cornerstone of any health system, and one of the areas defined by constant innovation, ever-increasing consumer demand, and relentless marketing to doctors and consumers by the pharmaceutical industry. Although pharmaceuticals are often highly effective, life-saving health interventions, this sector also has a reputation of being one of the largest cost drivers for any health system. Slovenia is certainly no exception to this. In many new members states, pharmaceutical expenditures as a proportion of total health expenditures have exceeded 20 percent (it is about 12 percent on average in the EU and 18 percent in Slovenia) and the tendency is still rising due to increasing consumption and scant effort to control prices (Chakraborty and others, 2005). Instead of a basic reimbursable drug list which is built on competitively procured generic drugs, many countries also reimburse expensive branded drugs or more expensive branded generics, which leads to increased costs without much therapeutic benefit. The overall pharmaceutical bill has two variables and derives from the unit cost for each drug multiplied by the volume of drug use. In Slovenia these two factors together have led to an increase in prescription costs where, for example, in 2001 expenditure on drugs per capita was euro 143; this increased to euro 202 in 2005 and is likely to keep increasing (Fürst, 2006).

Prescription drugs, as opposed to over-the-counter drugs, will continue to account for most of the market in Slovenia. Prescription drugs account for 90 percent of total pharmaceutical expenditures, higher than in other new member states. The situation is partly the result of overprescription by doctors and overuse by hospitals, although the need for healthcare and pharmaceutical cost containment will, over time, lead to a reduction in the share of prescription drugs, providing the impetus for over-the-counter market growth, as has been noted in other European economies. Slovenia has a long tradition of domestic generic pharmaceutical manufacturing, and a high percentage of generics (many of which are high-priced branded generics) as a share of the total market (estimated at 33 percent in 2007). Generic substitution, which would be a preferred policy to contain costs, is currently not allowed. The health insurance system tries to encourage the prescription of generics via the positive list, and by providing information to prescription-providers and consumers.

Conclusion

The Slovenian health system has developed rapidly and quite substantially from former Yugoslav times over the past decade to such a degree that it is now achieving health outcomes similar to those of the more affluent "old" EU countries, and is substantially outperforming the majority of other new member states. However, despite rapid modernization, the health system still has a few lingering obstacles and challenges, mostly inherited from a past that has yet to be fully overcome. One example is the rather inefficient hospital sector, where progress toward a reduction in overall numbers or toward horizontal and/or vertical integration has been negligible.

Such structural issues need to be fully addressed in the near future in order for Slovenia to be prepared for the substantive challenges that lie ahead, such as increased demand on the health system due to ageing, the advent of available, costly and advanced technology, the pressure for higher salaries and increased consumer demand. To address these issues, we suggest that Slovenia strike a balance between overall long-term fiscal sustainability of the health and social sectors, while at the same time maintaining some of the core values of social solidarity (where social services access and availability are based on need and not ability to pay). Most likely, as the experience in other EU countries demonstrates, this will entail an ever-increasing share of private financing as a proportion of total health expenditures. Moreover, it can be expected (based on trends in member countries of the Organization for Economic Cooperation and Development) that an ever-increasing portion of financing for public sector health spending will come from general revenues and the budget, rather than from increases in labor taxation, due to the negative impact on competitiveness in an ever more globalized marketplace of such a tax wedge. Policymakers need to make assurances

that resources raised are used most cost-effectively, based on international evidence and best practice. As mentioned before, health technology assessment must be increasingly used as a tool to adopt and buy into international standards and experience—in particular, because to date there is limited domestic experience in Slovenia in this area. For this reason it is imperative to participate in Europe-wide networks which share information, research and evidence. At present Slovenia's health-financing system has still some regressive tendencies, which were highlighted in the White Paper and have not yet been substantially addressed. Now that Slovenia has entered the EU and European Monetary Union with stable economic performance and parameters, we recommend revisiting some of the proposals from the White Paper, especially the ones concerning the reform of the statutory insurance system. Complementary insurance should be transformed into true supplementary insurance, which should cover nonessential clinical services and premium services, while statutory insurance covers all medically required interventions. We consider it important for Slovenia not to abandon its egalitarian values, in that basic health care should be financed from mandatory social insurance. We further recommend addressing the increasing costs of pharmaceuticals in Slovenia, by adopting strict economic evaluation policies towards drugs reimbursement, and a fair and competitive pharmaceutical pricing system. Concerning the issue of aging, there is little Slovenia can do to halt this trend (apart from adopting pro-natalist policies and making itself more attractive to immigrants), therefore, measures have to be taken to adopt sound policies for financing and delivering long-term care as part of the continuum of care.

Although there are some concerns and looming challenges for Slovenia with regard to health financing and integral modern care delivery, Slovenia has demonstrated that it is feasible for a country to evolve from one form of health system to another and overcome various obstacles without suffering large drawbacks (in terms of the economic base and access to and quality of health care). Slovenia has done this by engaging in healthy political and technical debate and by ensuring strong economic monitoring policies and fiscal prudence. Although the health system may not be perfect in the eyes of the consumer or some of its constituencies, it has managed to achieve and maintain comprehensive and equitable health coverage for the entire population, good access to well-distributed medical practitioners and hospitals around the country with reasonable outcomes and customer satisfaction. This achievement bodes well for the substantial challenges ahead.



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