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No. 1

**Analysis and Econometric Modelling of the
Monetary Sector in the Slovak Republic**

Michal Olexa

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Abstract

Despite the fact that the macro-economic modelling of the econometric type has almost a 30-years tradition in the Slovak Republic, the econometric modelling of the more detailed money structure has no history at all. The significance of the problem with time series is held by the fact that no data on the state money targeting, managing and controlling before 1993 were available in such a way that would be compatible with 1993 data and thus would allow to extend the particular time series by several time periods before 1993. The first part of the paper contains a short analysis of selected monetary indicators during the last five years. The second part deals with the monetary submodel which consists of five regression equations (money M2, interest rates from credits and deposits, credits to households and enterprises, foreign direct investment) and nine identities. This submodel is planned to create a monetary block in the quarterly econometric model of the Slovak economy.

Keywords

Money, interest rates, monetary policy, regression equations, econometric model

JEL-Classifications

C32, C35, C51, E51

Comments

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1. Introductory Remarks

Despite the fact that the construction of macro-economic models of the econometric type has almost a 30-years tradition in the Slovak Republic, the econometric modelling of the more detailed money structure has no history at all. There are several reasons for this. Firstly, in the past, there was no interest from the Central Bank on modelling and forecasting the indicators in the field of state finance and money development because a hard (decisive) activity of the State Bank of the CSFR (ŠBĚS) was valid. At the same time, this was the second reason because there was no effort from econometric-modelling staff to start an analysis of the complicated relations in the money area. The third reason was constituted by the lack of statistical data.

After the establishment of the independent SR in 1993, a demand for predictions of the main monetary indicators has increased from the side of the National Bank of Slovakia (NBS) because also the NBS has suffered (and still is suffering) by a lack of history, lack of long-term experience in the preparation of its main document (The Monetary Programme) of the independent country having the economy based on the market principles.

Within the creation of the main documents (State Budget and Monetary Programme), the Ministry of Finance of the SR (MF SR) but also the NBS need in addition to the macro-economic indicators (GDP rates of growth, inflation, employment and unemployment, state budget balance, trade balance or current account remainders), which represent the basic framework of the above mentioned documents, also the deeper broken forecasts of the state budget revenue and expenditure side as well as money, credits and interest rate indicators. Despite the effort of prognostic and econometric experts, this demand has not yet been satisfied. The main reason for this is that time series are available only for a short time horizon. The significance of the problem with time series is held by the fact that no data on the state money targeting, managing and controlling before 1993 are available in such a way that it would be compatible with 1993 data and thus would allow to extend the particular time series by several time periods before 1993.

It seems, however, that after five years of independence of the Slovak Republic, relatively homogenous time series are to be gathered, which are interesting for modelling especially in the quarterly disaggregation. Nowadays (i.e. July 1998), time series with a length of 20 – 22 quarters are at our disposal, which can quite successfully be used within the regression analysis.

There is another aspect which breaks (or does not support) the development of the building and presentation of the disaggregated monetary sector within the econometric models of the transition economy and that is the lack of appropriate relevant sources in the foreign literature.

However, if something has appeared, then the described model relations depending on the degree of the development of the economy are either very sophisticated or, conversely, very simple.

2. Short Analysis of Selected Monetary Indicators

2.1 Analysis of Credits

The analysis and prognosis of financial credit functioning in the economy is to be judged within the context of relations with the development of main macro-economic and budget indicators. The initial presumption of the development of financial means puts it in relation with the presumptions of the development of main economic value (GDP) and the internal price level, with the acceptance of the special presumption on the dynamics of internal attribute (circulation velocity) of the money mass.

The characteristics of the historical development of credit provided to the domestic economy is linked with the total characteristics of monetary policy of the NBS, which is responsible for the strategy of the monetary policy, its operative management and control. Among the values of the NBS Main Document, the Monetary Programme, the considerations on the acceptable future development of credit for the economy and currency tools for its management and control, of course in the scope of the total assumed currency development for the particular time period, appear. The prognostic horizon is, however, short-term, i.e. one year (see the publication "Currency Programme of the National Bank of Slovakia for 1993-998", Bratislava). The long-term forecasts of monetary, fiscal and macro-economic indicators are not officially published by the NBS.

The data basis (Appendix 2) was prepared from the official statistical data published by the NBS (see the publications „NBS Currency Overview“, volume 1993-1997, Bratislava). The following indicators were selected for the analysis:

- the monetary stock M2 (at current exchange rate), defined as money in circulation outside the bank treasuries, sight deposits and sight saving deposits kept by domestic non-bank subjects (residents, non-residents, in SKK) in relation to the domestic bank system except for the means of central and local bodies, time deposits (residents, non-residents, in SKK) including deposit certificates, foreign currency time and sight deposits (residents) in relation to the domestic bank system except for the means of central and local bodies,
- total domestic credits (credits provided to enterprises and households and the net credit to government and the National Property Fund net credit),

- total credits provided to enterprises and households (in SKK, in the foreign currency recalculated by the current exchange rate),
- credits in SKK provided to enterprises and households,
- credits in foreign currency (recalculated by the current exchange rate) provided to residents and non-residents.

The credits to central and local bodies intended for over-budget needs as well as NBS credits are not included in the total of credits.

Other analysed indicators are the following: average interest rate from the credit stock and the average interest rate from the credit stock without the amount of old credits provided at the 0% rate.

The time horizon of the analysis was the period from 1993 until 1997, the observation periodicity of the time series is quarterly, i.e. 20 observations have been used. Credit indicators are stock values reported to the ultimo of the given time period (the quarter) in range of a billion SKK, interest rate data are quarterly-weighted average values in percentage.

The monetary stock M2 is an inter-target value [intermediate variable], which is observed and controlled by the Central Bank during the whole analysed time period. The proportional dynamic seasonal development with the significant fluctuation in the fourth quarter, caused by adding the deposit interest to the year's ultimo, is typical for its course. The systematic trend component shows a long-term growing tendency, which is from the statistical standpoint significantly characterised by the logarithm development which, taking into account the controlled slow-down of the growth of credit activities of commercial banks being the source-creating factor of the development of this aggregate, is appropriate also for the calculation of the forecasts.

Within the analysed time period, the historical development of credit provided to the economy was influenced by the monetary tools applied by the Central Bank during the operative performance of the currency strategy in particular years. The direct and indirect monetary tools were applied by the NBS in the past, specifically even also for a certain number of the commercial banks (credit limits). It is typical for the recent time period to use the free monetary market tools for the main monetary aggregate control. The credit activities of commercial banks are influenced by special measures of the monetary policy regulating the provision of credits in the foreign currency.

The recent development of total domestic credits was influenced by the credit provision strategy directed by the government sector, which narrowed the room for the provision of

credits to the business enterprise sector and households. In our analysis, the credit requirements are to be considered as a complementary item. In the course of the previous development, the constant dynamic seasonal component occurred with a slight increase in the fourth quarter. The trend component has a systematic exponential course.

The total credits provided to enterprises and households on the basis of their components, i.e. credits to enterprises and households in SKK and credits offered in the foreign currency, were calculated by an aggregation procedure. The seasonal analysis of historical data of total credits provided to enterprises and households gives the information on the course of the seasonal fluctuation of a constant type with the seasonal variation in the last quarter of the year, which is the reflection of the increased intensity of the credit provision at the end of the year. In 1997, the credit activity of banks was suppressed due to the lack of free crown sources.

The price of credit money expressed by the average interest rate from the total amount of credits (less the amount of credits for the 0% rate) had a different course in the past; firstly, a shift around 4.5% for the period of two years encountered, later in 1995, an increase up to 16% occurred, and at the end of 1996, a decrease down to 13.5% appeared. The change in the strategy of the operative utilisation of monetary tools in the second half of 1996 together with the worsening of the liquidity state in commercial banks in 1997 caused an increase of interest rates from credits.

The relative indicator of the credit demandingness of the GDP to the total domestic credit gives, for the previous periods of the analysis, an information on the level of demandingness of one crown of the GDP, which requires the functioning of approximately 8.1 halers of domestic credit sources (coefficient being 0.81). During the period under analysis, this coefficient has fallen from the level being 0.92 in 1993 down to the level of 0.75 in 1997.

The money circulation velocity (velocity M2), mainly in 1994 and 1995, showed a certain type of seasonal fluctuations considering the seasonal variation of the gross domestic product and the mass of money (a significant decrease always in the fourth quarter of the year), which, however, has changed into another type of seasonal fluctuation due to the application of new monetary tools in the second half of 1996. The development in the first years under analysis pointed towards a decreasing tendency which in 1997 turned to a slightly increasing one. The average money circulation velocity oscillated in the previous years around the level 1.55 and, when the trend values represented by the simple sliding average values were used, it was around the level of 1.54.

Currently, a significant lack of credits and an undesirable high price of available credits persists.

2.2 Analysis of Money

If we look on the share of the money stock M2 (table 1) and its components in the GDP (at current prices) during 1993-1996, we can see its growing trend which, however, turned back in 1997. The share of the transaction component of the money stock, the sub-aggregate M1, was relatively stable until 1996. In 1997, due to the significant growth of interest rates of deposits with the short due date (7 days until 1 month) and the cautious monetary policy, an absolute decrease of sight deposits occurred, which together with the continuing high dynamics of GDP reflected into the decrease of the share of money M1 in the GDP. The share of quasi-money (and within it mainly the time deposits of households) was increasing in a stable way. However, the majority of the increase of time deposits concerned the deposits with the due date until one month. The decreasing tendency of the share of foreign currency deposits in the GDP from 1995 and 1996 ceased in 1997 mainly as a result of the May situation in the foreign currency zone and the consequent increase of these deposits.

Table 1: Share of the monetary stock M2 in GDP at current prices

	1993	1994	1995	1996	1997
Monetary stock [M2]	0.68	0.68	0.69	0.72	0.69
Money [M1]	0.32	0.29	0.29	0.30	0.25
Money in circulation outside banks [M0]	0.07	0.08	0.07	0.08	0.07
Sight deposits	0.25	0.22	0.22	0.23	0.18
- households	0.08	0.07	0.07	0.08	0.07
- enterprises	0.16	0.14	0.15	0.14	0.11
- insurance companies	0.00	0.00	0.00	0.00	0.00
Quasi-money [QM]	0.36	0.39	0.40	0.42	0.44
Time deposits	0.29	0.30	0.33	0.35	0.37
- households	0.22	0.22	0.24	0.26	0.28
- enterprises	0.03	0.05	0.05	0.06	0.06
- insurance companies	0.04	0.03	0.03	0.03	0.02
Deposits in the foreign currency	0.07	0.09	0.08	0.07	0.07
- households	0.06	0.07	0.07	0.06	0.06
- enterprises	0.01	0.01	0.01	0.01	0.01

2.3 Analysis of the Balance of Payments

The low growth rates of export (9.2%) and import (1.2%) of goods, which were behind the growth of GDP at current prices (13.6%), caused in 1997 a decrease of the export performance as well as the import demandingness.

Table 2: Relative indicators of the balance of payments

	1993	1994	1995	1996	1997
1a. Export of goods / GDP (%)	45.3	48.6	49.5	47.0	45.2
1b. Export of goods and services / GDP (%)	61.6	65.0	63.2	58.0	56.4
2a. Import of goods / GDP (%)	53.1	48.1	50.6	59.2	52.8
2b. Import of goods and services / GDP (%)	67.7	59.8	61.4	70.0	63.5
3. Current account / GDP (%)	-5.0	4.8	2.3	-11.2	-6.9
4. Capital and financial account / GDP (%)	4.6	0.8	5.7	11.1	8.4
5. Direct investment in the SR / GDP (%)	1.1	1.2	0.8	1.3	0.8
6. Other long-term capital / GDP (%)	3.4	3.6	2.3	5.0	5.9
7. Short-term capital / GDP (%)	5.8	-1.7	1.9	4.9	2.1

The export performance measured by the share of export of goods and services in the GDP (table 2) decreased inter-annually by 1.6 points while the share of export of goods in the GDP fell almost by 1.8 points. The positive changes were noticed in the export demandingness, where the decrease of the share of goods in the GDP by 6.4 points and the decrease of goods and services in the GDP by 6.5 points were nearly the same.

The decline of the passive trade balance remainder by 19 billion SKK and a slow increase of the balance of services allowed the decrease of the current account deficit from 11.2% in 1996 down to 6.9% in 1997. Despite the remarkable improvement at the inter-annual level, its value remains still high in comparison with international criteria.

Despite the fact that the share of the net capital inflow in the capital and financial account slightly decreased, its level was sufficient not only for the coverage of the current account remainder but it also allowed the slight increase of the foreign currency reserves of the Central Bank.

In 1997, the long-term financial credits drawn by the business enterprise sector were the main form of the capital inflow. The step-by-step increase of the long-term financial credits inflow is signalled by the annual increase of the share of other long-term capital in the GDP.

Unlike the long-term credits, the foreign direct investment inflow into the SR did not imply more significant dimension in 1997, while its share in the GDP fell under 1% (table 2).

Despite the fact that in 1997 the important shifts within the short-term capital were noticed, the short-term capital as a whole decreased. The increase of short-term liabilities, especially in the

banking sector, which at the same time led to the growth of short-term assets, caused the decrease of the share of short-term capital in the GDP by 2.8 points from 4.9% down to 2.1%.

3. Monetary Submodel

3.1 General Remarks

Up to now two econometric models for the Slovak economy were built in the INFOSTAT. The first model is based on the annual statistical figures, it is named EMSE (Econometric Model of the Slovak Economy). The structure of the second model (named SR-1Q) is very similar to the first one but quarterly data was used for the estimation of the regression parameters and consequently for the building of the whole model. The database for both models ended with figures of the year 1996. The first question that had to be solved was which model is more appropriate for the planned extension.

From the point of view of parameters' estimation, it is better to work with yearly time series, especially in the case of the transition economy. Quarterly data need to search for a problem of seasonal fluctuations, i. e. if it is better to use either seasonally adjusted data or seasonal dummy (filters) in the regression equations.

Naturally, it is better to work with yearly data but at the beginning of the process of data collection we understood that mainly fiscal and monetary data were of very short history. One can find information about state budget revenues and expenditures and a few monetary indicators for the period before splitting of the former CSFR but these data are inconsistent and on very aggregate level. That means we have only five years at disposal but twenty figures in the case of quarterly disaggregation (1993 Q1 – 1997 Q4). Of course, with all disadvantages – still short period for such unstable economy with very irregular seasonal fluctuations in time series.

The time series from the period of the existence of the independent Slovak Republic, despite their relative shortness but on the other hand thanks to their consistency, allowed the estimates of regression equations with good mathematical and statistical parameters.

3.2 Money Supply M2

At the beginning of this part it has to be stressed that within the world literature there are several approaches on money supply modelling, while the main differences can be observed in the definition of the economic category „money“. In our analysis, we concentrate on the monetary aggregate M2. Generally, the correlation between the development of money supply and main macro-economic indicators can be expressed as follows:

$$M2 = f(GDP, DRN, FDI, M2_{t-1}, US_i, UM2) \quad (1)$$

or

$$M2 = f(GDP95, PY, DRN, FDI, M2_{t-1}, US_i, UM2) \quad (2)$$

where

GDP, GDP95	- GDP in nominal and real terms
PY	- GDP deflator
DRN	- discount rate
FDI	- foreign direct investment
US _i	- seasonal dummies (filters)
UM2	- dummy variable (if necessary)

The difference between the above mentioned equations only lies in the way how GDP is expressed. In the first equation, the dependence of money development on GDP is expressed at current prices, while in the second equation we separately trace the dependence of money on the physical quantity (GDP at constant prices) and the price development (GDP deflator PY). Foreign direct investment, which also can be expressed in different forms, acts as another modificative demand variable in the equation. As far as the influence on the development of money aggregate M2 is concerned, the most appropriate seems to be to use the cumulative FDI (FDI_CUM), i.e. not such FDI which entered the economy in the given time period (the given quarter) but rather FDI which functioned in the economy in the given period. The nominal discount rate of the NBS (DRN), by which the NBS has the possibility to influence the development of money M2, acts in this model as a control variable.

The choice of the regression equation to be included into the aggregate econometric model is influenced by the parameter values of exogenous variables, their statistical significance as well as by the level of basic tests of the equation quality. After taking into account these facts, it is possible to include the following two equations into the model (linear relation between variable M2 and the set of explanatory variables seems to be most appropriately):

$$\begin{aligned}
 M2 = & 25.9276 + 1.2202 * GDP - 1.6520 * DRN + 1.5181 * FDI_CUM + \\
 & (1.5) \quad (5.6) \quad (2.0) \quad (2.4) \\
 & + 0.3612 * M2_{t-1} + 24.2829 * US4 + 15.1128 * UM2 \quad (3) \\
 & (3.9) \quad (10.2) \quad (3.4)
 \end{aligned}$$

$$DW = 1.60, R^2 = 0.9985$$

$$\begin{aligned}
 M2 = & -71.0064 + 0.3982 * GDP95 - 2.1657 * DRN + 145.4080 * PY_{t-1} + \\
 & (4.6) \quad (2.0) \quad (2.8) \quad (5.6)
 \end{aligned}$$

$$DW = 2.63, R^2 = 0.97144$$

Both equations have positive and negative features. The first equation has highly significant parameters but the R2 is equal 0.91 only. Conversely, the second equation has a high R2 = 0.97 and also the auto-correlation index DW = 2.63 is very high (negative feature), however, the parameter at the discount rate DRN has a weaker significance (the t-statistics has the value equal 1.78 only).

The interest rate from deposits (RIDN) is derived in the model from two basic explanatory variables – RICN and inflation. Two acceptable estimations for the development of RIDN differ only in the time lag between RICN and RIDN.

$$\begin{aligned} RIDN = & 0.1712 * RICN + 0.0601 * (((PC/PC_{t-1}) - 1) * 100) + 0.6864 * RIDN_{t-1} + \\ & (2.7) \qquad (2.3) \qquad (6.7) \\ & + 0.6547 * U97 + 0.7949 * URIDN \qquad (7) \\ & (3.7) \qquad (2.3) \end{aligned}$$

$$DW = 1.79, R^2 = 0.9223$$

$$\begin{aligned} RIDN = & 0.1707 * RICN_{t-1} + 0.0737 * (((PC/PC_{t-1}) - 1) * 100) + 0.6790 * RIDN_{t-1} \\ & (2.4) \qquad (2.9) \qquad (5.7) \\ & + 0.7781 * U97 + 0.9136 * URIDN \qquad (8) \\ & (4.3) \qquad (2.6) \end{aligned}$$

$$DW = 1.79, R^2 = 0.9166$$

3.4 Credits Offered to Households and Enterprises (CDHE)

In the area of investment processes within the model, it is possible to express the dependence of investment (i.e. gross fixed capital formation) either on rate of interest from credits (RICR, RICN) or directly on credits (CDHE). Therefore, our effort is to have both variables in the model as endogenous. The level of credits offered to households and enterprises depends mainly on the GDP (positive influence), while the average real interest rate from credits (RICR) and the level of credits provided to the government (CDG) have a negative influence.

$$\begin{aligned} CDHE = & 129.1112 + 2.0750 * GDP - 1.4592 * RICR - 0.9081 * CDG + 14.5261 * US4 + \\ & (6.4) \qquad (15.2) \qquad (2.2) \qquad (4.5) \qquad (2.2) \\ & + 27.1097 * UCDHE \qquad (9) \\ & (3.1) \end{aligned}$$

$$DW = 1.67, R^2 = 0.9587$$

3.5 Foreign Direct Investment

According to the economic theory, this variable should significantly influence the development of other macro-economic variables. Under the conditions of the Slovak economy, it is not valid at full extent, however, the estimated regression equations of the foreign direct investment in USD (FDI_USD) unambiguously show the significant positive correlation between the FDI and GDP and at the same time a negative correlation between the FDI and average nominal wages (W). Foreign capital is primarily expressed in USD, therefore all explanatory variables are also expressed in USD.

$$\begin{aligned} FDI_USD = & 0.0028 * RICN - 4.2792 W_USD_{t-1} + 0.2392 * GDP_USD_{t-1} + \\ & (2.0) \qquad \qquad (3.8) \qquad \qquad (3.9) \\ & + 0.1124 * US1 - 0.0292 * US2 + 0.1156 * UFDI \qquad \qquad (10) \\ & (3.1) \qquad \qquad (2.6) \qquad \qquad (10.0) \end{aligned}$$

$$DW = 2.14, R^2 = 0.9027$$

From the statistical quality test standpoint equation is acceptable, the parameters are statistically significant, the characteristics R^2 and DW comply with the norm.

3.6 Complementary Identities

In addition to the above mentioned regression equations, the monetary block contains several identities serving for the calculation of real interest rates from deposits and credits and for the different expression of the foreign direct investment.

$$RICR = RICN - (((PI/PI_{t-4}) - 1) * 100) \qquad (11)$$

$$RIDR = RIDN - (((PC/PC_{t-4}) - 1) * 100) \qquad (12)$$

$$RE = 0.6 * DEM + 0.4 * USD \qquad (13)$$

$$IRE = RE/23.482 \qquad (14)$$

$$FDI = FDI_USD/USD \qquad (15)$$

$$FDI95 = FDI/PI \qquad (16)$$

$$FDI_CUM = FDI_CUM_{t-1} + FDI \qquad (17)$$

$$FDI95_CUM = FDI95_CUM_{t-1} + FDI95 \qquad (18)$$

$$VM2 = M2/GDP \qquad (19)$$

Real interest rate from credits is calculated by a investment deflator (PI). Another possibility is to use the GDP deflator. Exchange rate (RE) is calculated by the NBS formula for monetary basket. Index of exchange rate (IRE) has the base average 1995=1.

4. Conclusions

If we take into account five regression equations (possible composition is No. 4, 5, 7, 9 and 10) and given nine identities, the first version of the monetary block in the econometric model of the Slovak economy consists of 14 equations.

We can see two other possibilities how to extend our approach in the future research work. The first approach is to extend the monetary submodel for the other monetary components. The second approach is to estimate more detailed regression equations for better forecasting of the monetary components. All these plans can be fulfilled in the next future.

APPENDIX 1

List of Variables

CD	Total domestic credits, bn SKK
CDG	Domestic credits to government, bn SKK
CDHE	Domestic credits to households and enterprises, bn SKK
CDHE – SKK	Domestic credits to households and enterprises in SKK, bn SKK
CDHE – FC	Domestic credits to households and enterprises in foreign currency, bn SKK
DEM	Exchange rate SKK/DEM
DRN	Nominal discount rate, in %
FDI	Foreign direct investment, bn SKK
FDI95	Foreign direct investment, bn 1995 SKK
FDI95_CUM	Foreign direct investment, cumulative, bn 1995 SKK
FDI_CUM	Foreign direct investment, cumulative, bn SKK
FDI_USD	Foreign direct investment, bn USD
GDP	Gross domestic product, bn SKK
GDP95	Gross domestic product, bn 1995 SKK
GDP_USD	Gross domestic product, bn USD
IRE	Exchange rate index, 1995=1
M2	Monetary stock, bn SKK
PC	Final consumption of households deflator, 1995=1
PI	Gross fixed capital formation deflator, 1995=1
PY	GDP deflator, 1995=1
RE	Weighted exchange rate (60% DEM, 40% USD)
RICN	Nominal credit interest rate, in %
RICN_0	Nominal credit interest rate (less the credits for 0% rate), in %
RICR	Real credit interest rate, in %
RIDN	Nominal deposit interest rate, in %
RIDR	Real deposit interest rate, in %
U + name of variable	Dummy variables
USi	Seasonal filters (i = 1, 2, 3, 4)
USD	Exchange rate SKK/USD
VM2	Money circulation velocity
W_USD	Average monthly wage, thous. USD

APPENDIX 2

Table A1

	Monetary stock	Money circulation velocity	Credits domestic, total	Credits to households and enterprises	Credits to househ. and enterprises in SKK	Credits to househ. and enterprises in foreign currency	Credits to government
	M2	VM2	CD	CDHE	CDHE – SKK	CDHE – FC	CDG
93q1	207,0	2,3848	308,2	240,7	235,1	5,6	67,5
93q2	215,3	2,3326	326,8	251,7	245,5	6,2	75,1
93q3	221,7	2,3288	331,4	255,7	249,1	6,6	75,7
93q4	249,5	2,6319	358,5	263,5	256,4	7,1	95,0
94q1	241,1	2,366	359,6	259,6	249,3	10,3	100,0
94q2	252,5	2,2646	357,3	258,6	247,6	11,0	98,7
94q3	265,6	2,3319	358,5	260,5	247,7	12,8	98,0
94q4	299,7	2,6475	368,8	267,0	252,3	14,7	101,8
95q1	291,5	2,4703	373,7	278,8	260,9	17,9	94,9
95q2	302,7	2,3338	375,7	284,6	267,5	17,1	91,1
95q3	317,6	2,3491	380,8	293,8	273,4	20,4	87,0
95q4	356,9	2,6654	397,0	307,2	283,8	23,4	89,8
96q1	361,8	2,7724	407,8	353,2	323,3	29,9	54,6
96q2	367,8	2,5489	419,8	338,4	303,8	34,6	81,4
96q3	376,4	2,501	431,1	350,3	311,7	38,6	80,8
96q4	416,2	2,7673	453,8	361,5	331,6	29,9	92,3
97q1	407,6	2,7411	459,0	363,1	331,9	31,2	95,9
97q2	416,0	2,5584	469,5	366,4	333,4	33,0	103,1
97q3	423,3	2,4871	479,7	368,4	333,8	34,4	111,3
97q4	453,9	2,6328	468,1	370,1	334,3	35,8	98,0

Table A2

	Nominal credit interest rate, in %	Nominal credit interest rate (less the credits for 0% rate), in %	Real credit interest rate, in %	Nominal deposit interest rate, in %	Real deposit interest rate, in %
	RICN	RICN_0	RICR	RIDN	RIDR
93q1	14,28	14,28	-1,0611	7,51	-12,7782
93q2	14,87	14,87	1,2914	7,76	-13,4155
93q3	14,49	14,49	0,2238	8,2	-12,9718
93q4	14,0	13,96	-1,4081	8,61	-12,8397
94q1	14,46	14,46	-0,0119	9,09	-6,4845
94q2	14,6	14,6	0,4889	9,45	-3,9397
94q3	14,66	14,66	-1,8464	9,44	-2,4315
94q4	14,51	14,51	4,4183	9,29	-2,667
95q1	14,05	16,03	2,4945	9,46	1,4051
95q2	13,61	15,85	5,0278	8,39	-2,0603
95q3	13,14	15,75	19,9798	8,13	-3,5639
95q4	12,61	14,94	9,1351	7,38	-2,8857
96q1	12,6	14,49	4,983	7,11	0,7917
96q2	12,0	13,88	4,6661	6,5	-0,0779
96q3	11,58	13,26	0,694	6,68	1,1951
96q4	11,44	13,33	5,9415	6,54	1,2795
97q1	11,48	13,72	8,574	7,2	1,1889
97q2	12,26	14,56	8,3855	7,72	1,5207
97q3	13,05	15,51	8,6871	8,27	2,1398
97q4	13,33	15,94	8,8832	8,76	2,959

Table A3

	Exchange rate SKK/USD	Exchange rate SKK/DEM	Weighted exchange rate (60% DEM, 40% USD)	Exchange rate index, 1995=1
	USD	DEM	RE	IRE
93q1	29,1	17,8	22,32	0,9167
93q2	28,91	17,88	22,292	0,9156
93q3	32,44	19,29	24,55	1,0083
93q4	32,71	19,46	24,76	1,0169
94q1	33,16	19,24	24,808	1,0189
94q2	32,45	19,54	24,704	1,0146
94q3	31,4	20,1	24,62	1,0112
94q4	31,14	20,16	24,552	1,0084
95q1	30,3	20,49	24,414	1,0027
95q2	29,34	21,0	24,336	0,9995
95q3	29,74	20,8	24,376	1,0011
95q4	29,54	20,76	24,272	0,9969
96q1	30,0	20,44	24,264	0,9966
96q2	30,78	20,23	24,45	1,0042
96q3	30,61	20,45	24,514	1,0068
96q4	31,23	20,37	24,714	1,015
97q1	32,726	19,786	24,962	1,0252
97q2	33,329	19,472	25,0148	1,0274
97q3	34,453	19,072	25,2244	1,036
97q4	33,915	19,321	25,1586	1,0333

Table A4

	Foreign direct investment, bn USD	Foreign direct investment, bn SKK	Foreign direct investment, bn 1995 SKK	Foreign direct investment, cumulative, bn SKK	Foreign direct investment, cumulative, bn 1995 SKK
	FDI_USD	FDI	FDI95	FDI_CUM	FDI95_CUM
93q1	0,0622	1,8109	2,378	9,7849	13,625
93q2	0,0565	1,633	2,0429	11,4179	15,6679
93q3	0,0466	1,5129	1,683	12,9308	17,3509
93q4	0,0168	0,5511	0,6067	13,4818	17,9575
94q1	0,0132	0,4386	0,5032	13,9204	18,4607
94q2	0,0402	1,3046	1,4302	15,225	19,8909
94q3	0,0322	1,0117	0,966	16,2368	20,8569
94q4	0,1762	5,4861	5,4861	21,7228	26,343
95q1	0,0537	1,6282	1,6744	23,351	28,0174
95q2	0,0097	0,2841	0,2868	23,6351	28,3042
95q3	0,1784	5,305	5,4372	28,9402	33,7414
95q4	-0,0071	-0,2093	-0,2023	28,7308	33,5391
96q1	0,0299	0,8978	0,8579	29,6286	34,397
96q2	0,0193	0,5951	0,5598	30,2237	34,9568
96q3	0,0492	1,5051	1,3912	31,7288	36,348
96q4	0,1585	4,949	4,5335	36,6778	40,8815
97q1	0,0228	0,7447	0,6915	37,4225	41,573
97q2	0,0101	0,3366	0,3048	37,7591	41,8778
97q3	0,0258	0,8897	0,788	38,6488	42,6658
97q4	0,0752	2,552	2,2382	41,2008	44,904