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EXCHANGE-RATE SYSTEM BETWEEN THE CZECH AND SLOVAK REPUBLICS

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Section I: The Cost-Benefit Analysis of the Czech-Slovak Exchange-Rate System

1. Introduction

After The Velvet revolution in 1989, Czechoslovakia has proved that "A Velvet divorce" is also possible. The problem of the exchange-rate system between newly established the Czech and Slovak Republics has become one of the key issues in defining the Czech-Slovak relationships.

In October 1992, The Monetary Arrangement was signed between the Czech and Slovak Republics establishing The Czech-Slovak Currency Union. The life of the new union was not very long. Starting its existence in January 1993, it collapsed in February and was replaced by *a clearing* union (a multiple-rate system with two currencies using a clearing mechanism with the original clearing rate of one to one).

Other systems suggested by economic experts as alternative solutions or modifications differ in a degree of fixity of an exchange-rate as well as in a degree of a convertibility significantly. On the one hand, a fixed exchange-rate regime and a floating exchange-rate regime appear among suggested systems. On the other hand, a regime of direct payments (in ECU) is also being discussed.

In the first section (The Cost-Benefit Analysis of the Czech-Slovak Exchange-Rate System), this paper attempts to show that an exchange-rate system based on a fixed rate would be too costly for both republics and that modifications should move the present system toward a greater flexibility. The second section (Modifying Present System) suggests how the present system should be reformed further. It attempts to classify circumstances under which a regime of direct payments would become a superior solution to a clearing union.

The cost-benefit analysis allows us to show the problem in a comprehensive way and to consider all main factors including those which are difficult to express in any model. Moreover, in this framework, it is possible to describe the evolution of the exchange-rate system and consequent changes in the cost-benefit structure.

The choice of the best possible combination of fixity and flexibility of an exchange-rate system is often linked with the concept of optimum currency areas. Also, the fact that the evolution of the Czech-Slovak exchange-rate system started from a currency union suggests that the theory of optimum currency areas and the theory of coordination of interdependent economies provide a useful theoretical framework for our analysis.

However, both theories have mainly been developed for analyzing the process of integration. The facts that the Czech and Slovak Republics are going in the opposite direction and, in addition, both countries are in a transition process toward market economies, change the dimension of our analysis in some respects. Specifically, the weight of some costs and benefits in the structure may differ from this in the "integration" approach and potential benefits may not be realized.

According to the structure suggested in the analysis of Ishiyama (1978) and Taylor & Masson (1992), members of a currency union gain common currency, an integrated financial market, economic and political integration as the main benefits of the union.

On the other hand, the members of a currency union also bear the following costs: loss of national sovereignty, loss of independent monetary policy, limited fiscal policy, loss of seigniorage revenues and loss of exchange rate as an adjustment mechanism.

Benefits and costs are of different importance in the structure. The weight of benefits is increased by a high degree of interdependence among the currency union members. The costs increase, the more difficult it is to coordinate monetary, fiscal and exchange-rate policies.

Ishiyama (1978) and Taylor & Masson (1992) proposed that loss of monetary, fiscal and exchange-rate policy independence is unacceptable if there is a lot of permanent asymmetries within the union.

Eichengreen (1990) shows that economic convergence is a key issue for existence of a monetary union. The asymmetric problems call for different policy responses. However, the main economic tools are not independent within the union, and any accepted common strategy can not solve these problems fully.

The effectiveness of other adjustment mechanisms that could reduce differences is another important factor entering analysis. Taylor & Masson (1992) and Willet & Tower(1970) suggest to look at the adjustment mechanisms that are available to union members to cushion economic imbalances. The weaker these adjustment mechanisms are the more important the loss of main economic tools becomes.

Ishiyama (1978) classifies the adjustment mechanisms available for union members as follows: labour mobility, capital mobility and nominal price and income flexibility. High factor mobility and high downward price flexibility reduce costs of a currency union by solving regional problems and by decreasing asymmetries in a system. Ishiyama also emphasizes that while the costs are clearly visible, benefits are of a more abstract nature.

The costs of policy harmonization may be increased by the absence of the federal fiscal transfer system proposed by Taylor & Masson (1992) as a key absorption mechanism. Although transfers do not function as an adjustment mechanism, they reduce costs of asymmetric shocks in a currency union.

As we said before, it is important to link the above suggested structure with the Czech-Slovak economic context. The cost-benefit analysis of evolution of the exchange-rate system is organized as follows.

Firstly, after providing a brief description, the costs and benefits of the Czech-Slovak currency union are analyzed (how they were affected by the split of CSFR, transition and to what extent they were realized). Subsequently, the costs and benefits are weighed.

Summing up the above-listed theories, following factors provide framework for weighting costs of the union: asymmetries in the system, economic divergence, adjustment mechanisms and absence of fiscal transfer system.

The weight of benefits depends on the degree of real integration and on the characteristics of a union currency. We add three specific factors to the level of interdependence to get list of factors affecting benefits: transition, split of CSFR and temporality of the union.

Secondly, after describing the Czech-Slovak clearing union, the changes in the cost-benefit structure are considered to analyze what has been lost by the movement toward the present system and what has been gained. Ishiyama (1978) argues that the benefits of a currency union connected with a common currency are not realized in a system with two currencies.

Governments are not able to maintain a stable exchange rate for long maturities as they are with one currency. Consequently, there is an increase in uncertainty and instability in the system. Similarly, other benefits of the currency union may not be fully realized in the clearing union.

The same approach is used to describe the changes in the cost structure. To what extent has the necessity to harmonize monetary, fiscal and exchange-rate policy been reduced? Does the present system provide some new mechanisms to cushion asymmetric problems? We will identify conditions under which the costs of the clearing union would be reduced using history of the Kc/Sk[1] exchange rate as an evidence supporting our analysis.

Analogously to analysis of Willet & Tower (1970) who linked their discussion of optimum currency areas with the choice between fixed and flexible exchange rates, we will use results of the cost-benefit analysis to decide whether the fixed Kc/Sk rate would provide stability for the Czech-Slovak transactions keeping in mind that the costs of policy coordination exceeded benefits of the currency union.

Although historical and economical interdependence of both republics, their size and EC orientation support the idea of a fixed exchange rate, our analysis suggests that using a flexible system appears to be more realistic solution since policy coordination necessary for achieving a stable exchange rate would be extremely costly for the Czech and Slovak Republics.

[1] Sk refers to the Slovak crown. Kc refers to the Czech crown.

2. The Czech-Slovak Currency Union

It is worth noting that the Czech-Slovak Currency Union "inherited" the cost-benefit structure from the former Czechoslovakia and this structure was influenced by the split of Czechoslovakia. As the fate of the arrangement suggests, the costs of the currency union outweighed the benefits. With costs already high, we will see that the potential benefits of a currency union were reduced by temporality of the union, by transition problems as well as by the split of CSFR[2].

2. 1. Description

After the split of Czechoslovakia in December 1992, The Czech-Slovak Currency Union lasted for six weeks (1. 1. 1993 - 8. 2. 1993). In January, SBCS (the central bank of the former Czechoslovakia) was divided into two central banks: CNB (Czech National Bank) and NBS (National Bank of Slovakia). These two banks established The Monetary Council in order to negotiate common monetary and exchange-rate policies as well as reserve requirements.

The Monetary Arrangement between the Czech and Slovak Republics from 29. 10. 1992 itself signalled temporality of the union. This can be concluded from the four escape clauses any of which would allow for either member to abandon the union. The union could be abandoned if the republic deficit of one of the members exceeded 10 % of annual republic revenues; the fall in foreign reserves of one of the central banks exceeded the value of that month's import in convertible currencies; speculative capital flows from one republic to the other exceeded 5 % of total bank deposits; The Monetary Council could not agree on a common monetary policy.

2. 2. Benefits of Currency Union

2. 2. a. Common currency

The Czech-Slovak Currency Union used as its common currency the Czechoslovak crown (Kcs) - the medium of exchange of the Czechoslovak state with long history of seventy years. This inheritance allowed for the new states to use a well-established currency, and to avoid the costs of a currency unification process.

Transaction costs were not increased. In both republics, neither private nor legal persons needed to exchange domestic currency in order to trade with or travel in the other republic.

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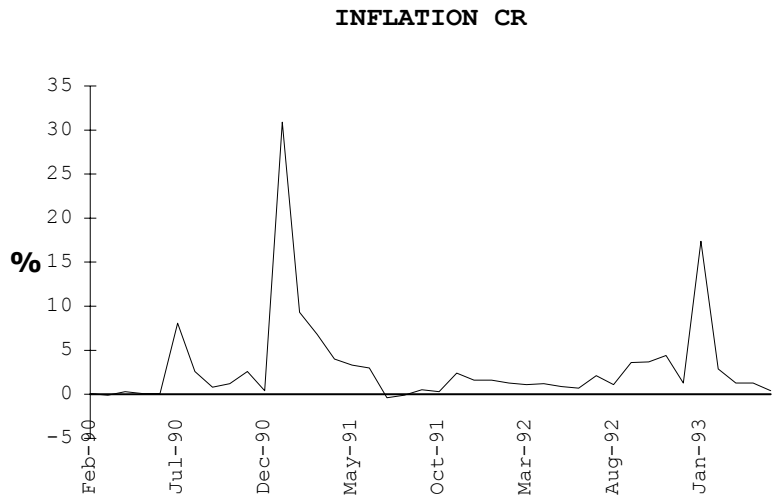
[2] Since the potential benefits of a currency union were reduced significantly by economic and political constraints, the first Czech-Slovak exchange-rate system may even not be considered as a currency union, according to a standard definition.

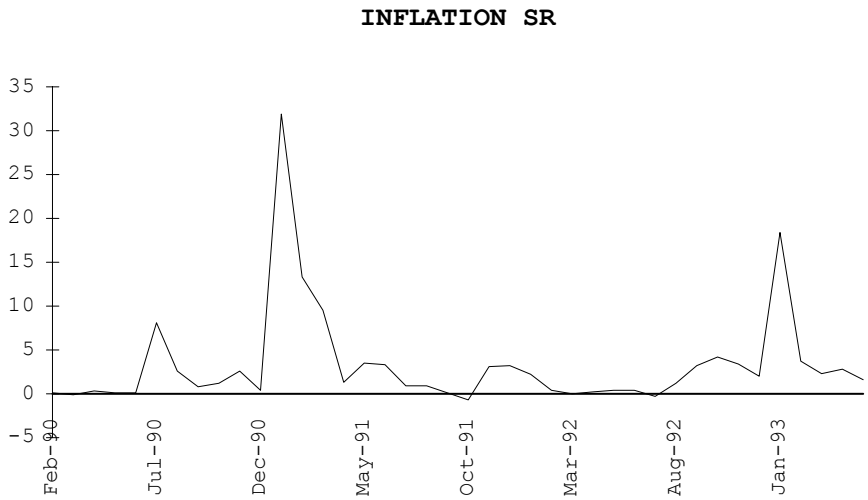
The inherited currency was characterized by stability and a high anti-inflationary credibility as a result of CSFR authorities' policy since 1990. The Czechoslovak crown had not been devalued for three years. SBCS had been an independent central bank with a high aversion to inflation. Prices were stable in both republics of the former Czechoslovakia. Figures I.1. and I.2. show that the only big inflation sources were the 1990 price liberalization and the 1993 tax reform.

Figure I.1. Inflation in the Czech Republic 1990-1993



Data Source: FSU (Federal Statistical Office of Czechoslovakia), CSU (Czech Statistical Office).

Figure I.2. Inflation in the Slovak Republic in 1990-1993



Data source: FSU, SSU (Slovak Statistical Office).

The stability of the Czechoslovak crown had been supported by the fact that the Czechoslovak government had managed to balance its budget. The Czechoslovak deficit had not been higher than 2 % of GNP (See Table I.1.) since 1989. As a result, the currency union could expect a low output-inflation trade-off caused by low inflationary expectations of union residents and high credibility of The Monetary Council.

Table I.1. CSFR Government's Deficit (% of GNP)

	Deficit (mil. of crowns)	**% of GNP**
1989	6,414	0.85 %
1990	- 7,156	- 0.88 %
1991	10,359	1.06 %
1992	16,660	1.77 %

Data source: FSU.

With a common currency, the exchange rate between domestic currencies of union members did not exist. If the Czechoslovak crown had been expected to last for all maturities, exchange-rate uncertainty would have been reduced to zero. Speculative capital flows could not worsen the exchange-rate imbalances between the republics. Also, no information searching was necessary to determine an appropriate exchange rate. Neither CNB nor NBS needed to hold reserves denominated in the other union member's currency.

2. 2. b. Integrated Financial Market

Due to the transition process, the currency union lacked well-developed financial markets in either member country. However, there was a possibility to develop an integrated financial market using inherited traditions. With a common currency, redistributing savings and investment through the banking system would make it easier to allocate financial resources within the union optimally.

There was a tendency towards portfolio diversification within the union. Residents could freely choose where to deposit their savings. Also, during the first wave of voucher privatization they were allowed to bid for shares from both republics without any restrictions. Czech residents became owners of shares of Slovak enterprises and vice versa.

2. 2 .c. Economic Integration

The Czech and Slovak Republics have been linked economically (in the Czechoslovak state) since 1918. There were no trade barriers between republics and the degree of interdependence was high.

From table I.2. it is clear that large trade volumes were exchanged between the Czech and Slovak Republics in 1992.

Table I.2. Czech-Slovak Trade in 1992

1,992	CR	SR
Import (mil. Kcs)	85,500	103,600
% of total import	25 %	51 %
Export (mil. Kcs)	103,600	85,500
% of total export	31 %	46 %

Data source: CSU, SSU.

Moreover, 1992 statistics did not record all Czech-Slovak trade transactions because some intrafirm transactions (Czech-Slovak enterprises) were ignored.

The Currency Union allowed for both members to operate within a larger, diversified common market with reduced transaction costs. As a result, both republics gained some economic stability since external shocks were relatively smaller and internal shocks might offset each other partially.

In order to support economic cooperation The Czech-Slovak Customs Union was established (with no trade barriers between members). The efficiency of economic cooperation and integration was reduced by the fact that both economies have relatively large state sectors built during the previous regime. The state sector industries were not developed with respect to comparative advantages of regions.

One implication that follows is that the interdependence is "artificial" in some respects since it was planned by the previous regime.

2. 2. d. Political Integration

The Czech-Slovak Currency Union signalled willingness of both members to coordinate their policies. Therefore, political stability in the area was assured. However, the split of CSFR was preceded by the collapse of federal institutions. No federal institution with re-distributive power was established as a part of the new union system. Republic budgets were strictly

separated except for transfers from the asset-division process. Within the union there was no instrument for helping a depressed republic if necessary (international loans only). The only supranational institutions were The Monetary Council and The Council of Customs Union.

2. 3. Costs of Currency Union

2. 3. a. Loss of National Sovereignty

The transition period has been characterized by a fall in output, price liberalization and a decrease in the standard of living. All of these problems are politically very sensitive, especially in the most depressed Slovak regions. Any compromise, even if necessary for policy coordination, is unpopular.

Before January 1993, federal institutions were responsible for the economic performance of CSFR. The previous regime's investment in Slovakia had been extremely large and inefficient. Transfers from the Czech Republic were an important source of revenues for Slovakia. During the transition period, the Czech Republic was not able to continue with large money transfers to maintain the level of investment, and to cushion transition shocks.

Together with the fact that an independent Slovak state prospered during World War II (1939 - 1945), these were reasons for Slovak desire for independence (and of the split of Czechoslovakia partially). However, within the currency union, the loss of national sovereignty did not influence the system significantly.

2. 3. b. Monetary Policy is not Independent

Ishiyama (1978) shows that since the central bank fails to achieve a simultaneous solution to the problems of unemployment and inflation, members of a currency union have to decide what should be prioritized. The final decision depends on members' preferences, the size of depressed regions and the fiscal transfer system. Ishiyama also suggests that if one member has a higher anti-inflationary credibility, it becomes an leader forcing others to accept anti-inflationary policy biases.

With only two players on the scene, where the Czech Republic could be marked as a leader, Slovakia was made worse off when no fiscal transfers took place. The Monetary Council preferred to maintain a low inflation level and the Kcs/ECU exchange rate that had been fixed in 1990. CNB could be marked as a leader for two reasons. First, CNB inherited the know-how of the SBCS. Second, the economic situation of the Czech Republic allowed it to maintain a low inflation level with lower costs. As a result, economic problems of Slovakia, enlarged by an absence of the fiscal transfer system, could not be solved through monetary policy.

2. 3. c. Fiscal Policy is Limited

Taylor & Masson (1992) show that in a currency union fiscal policy becomes a very important tool for republic governments since monetary policy can not be used to maintain internal and external balances. The more different the problems of currency union members are, the more important fiscal policy becomes.

For example, the Slovak government might like to engage in fiscal expansion to solve an unemployment problem in order to cushion consequences of The Monetary Council's anti-inflationary monetary policy for Slovakia. However, Taylor & Masson (1992) point out that there are some limits to fiscal policy independence within every currency union. It is important to set limits to the expected deficit in order to prevent debt monetizing and excessive borrowing by union members. Otherwise common currency destabilization would follow.

Specifically, Slovakia expected to be a "deficit member" of the union lost fiscal policy tool to some extent since The Monetary Arrangement limited the fiscal policy independence. The deficit of either member was not permitted to exceed 10 % of annual republic revenues. (Since in a transition period it is difficult to set limits to government debts, the limit of 10 % might be an excessive constraint for Slovakia.)

2. 3. d. Loss of Seigniorage Revenues

As a direct consequence of a common monetary policy and limited fiscal policy independence, both republics had to agree on the mix of sources of governments' revenues (inflation revenues versus tax revenues). Consequently, Slovakia (as a follower) could not set the optimal mix of sources which was an important loss after the collapse of the federal fiscal transfer system.

2. 3. e. Loss of Exchange Rate as an Adjustment Mechanism

With a common currency, it was not possible to respond to current and capital account imbalances between republics by adjusting the Kc/Sk exchange rate. Also, it was not possible for any member to respond to asymmetric imbalances in balance of payments with a devaluation/revaluation of a common currency.

2. 4. Weighing the Costs of Currency Union

How difficult was it to harmonize monetary, fiscal and exchange-rate policies for the Czech and Slovak Republics? Costs of policy harmonization were increased by the divergence of the union members' economies. The burdens of the transition process have been shared unequally by the Czech and Slovak Republics. The difference in the nature of the Czech and Slovak economies caused asymmetric problems to be large and expected to be permanent. Consequently, the necessity of different policy responses in the near future has been expected to increase.

Coordinated monetary, fiscal and exchange rate policies could not be used as adjustment mechanisms for permanent asymmetric problems. Both republics only relied on other mechanisms, which were not strong enough.

Moreover, the situation was worsened by three facts. First, the economic divergence was not reduced by transfers after the fiscal federal system had collapsed. Second, the redistribution of resources was stopped suddenly within the currency union. Third, it was always Slovakia who was "worse than average".

2. 4. a. Asymmetries

The different nature of the Czech and Slovak economies was built during the previous regime. After 1948, the agricultural Slovakia and the industrial Czech Republic were re-oriented toward heavy industry. Inefficient centrally planned changes of the economic structure have originated in different consequences of the transition process for both union members.

Asymmetric diversification and adaptability caused the Czech and Slovak Republics' needs for policy responses to differ significantly.

On the one hand, the Czech economy has been more diversified, and it has proved more adept in absorbing shocks. Also, higher productivity growth has been expected to appear in the Czech Republic. On the other hand, the less diversified and less adaptable economy of the Slovak Republic has become more sensitive to the transition problems and to external shocks (EC recession, collapse of USSR). Consequently, the Slovak Republic has faced a rise in unemployment and a greater fall in output.

The difference in a diversification level and an industrial structure have resulted in the openness asymmetry. More open Slovakia (See table I.3.) has become more dependent on external fluctuations than the Czech Republic.

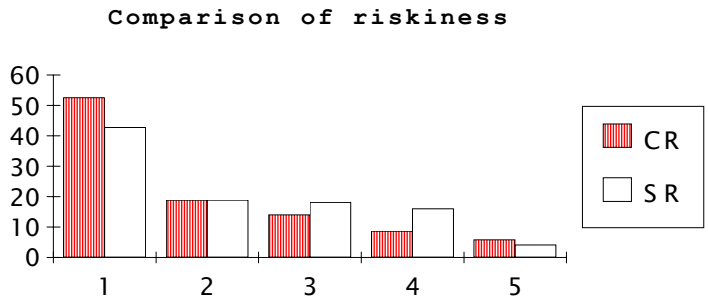
Table I.3. Asymmetry in Openness

1,992	CR	SR
Import (mil. Kcs)	251,968	100,697
% of GNP	34.11 %	49.85 %
Export (mil. Kcs)	229,400	98,594
% of GNP	31.05 %	48.81 %

Data source: FSU, CSU, SSU.

In addition, the less competitive and more risky Slovak export has been more sensitive to any fluctuation of foreign demand. Figure I.3. ranks the Czech and Slovak exports into five risk levels where the first level are low-risk exports to developed countries. The fifth level is considered to be the most risky (payments are uncertain, contracts are short-term). Asymmetric export competitiveness and riskiness have made common exchange-rate and commercial policies problematic.

Figure I.3. Comparison of Riskiness of CR and SR Exports (% of total export)

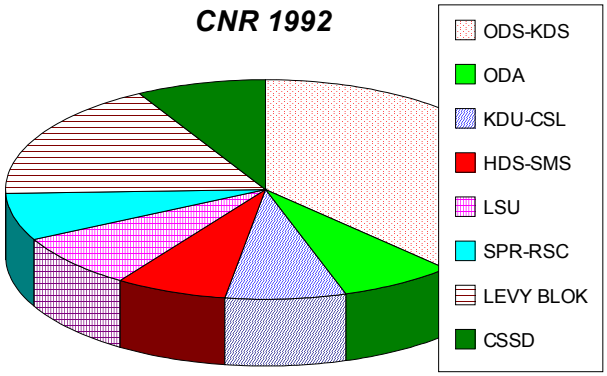


Data source: FSU, CSU.

The costs of coordination were stressed by asymmetry in targets since different economic problems were reflected in the results of the 1992 elections. Residents of the Czech Republic voted for political parties (ODS, ODA, KDU-CSL) supporting the transition toward a market economy (Figure I.4.). On the contrary, residents of the Slovak Republic voted for representative of more gradual changes - HZDS and for the socialist (SDL) and nationalistic (SNS) parties (Figure I.5.). The different political orientation of the governments increased the costs of coordination further[3].

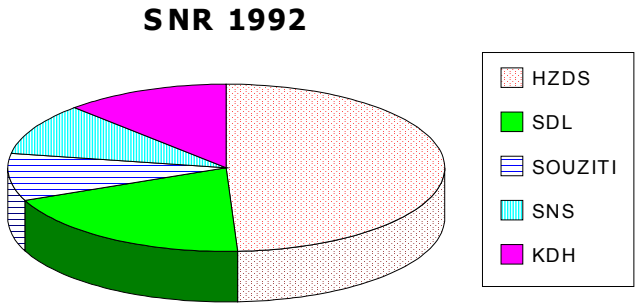
[3] As a result, it is very likely that policy makers in both countries use different

Figure I.4. Composition of the Czech Parliament



Data source: FSU.

Figure I.5. Composition of the Slovak Parliament



Data source: FSU.

2. 4. b. Economic Divergence

Asymmetric nature of the Czech and Slovak economies has resulted into an economic divergence signalled by diverging macroeconomic indicators.

Although GNP has been falling in both the Czech and Slovak Republics (Figure I.6.) since 1989, the shock caused by this fall was much greater for Slovakia. The large and inefficient investment of the previous regime caused the created national income to grow faster in Slovakia than in the Czech Republic (Figure I.7.).

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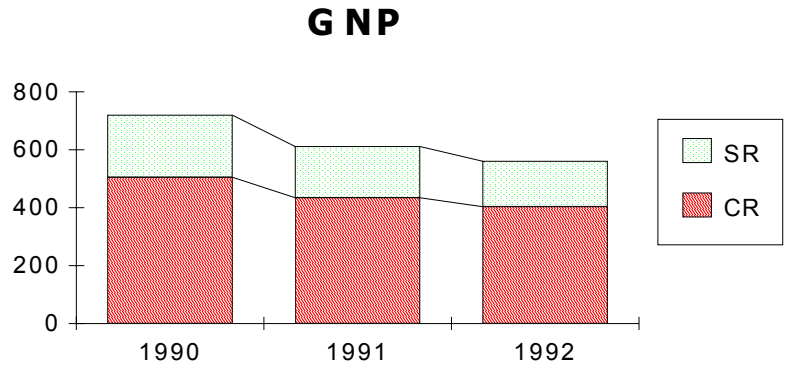
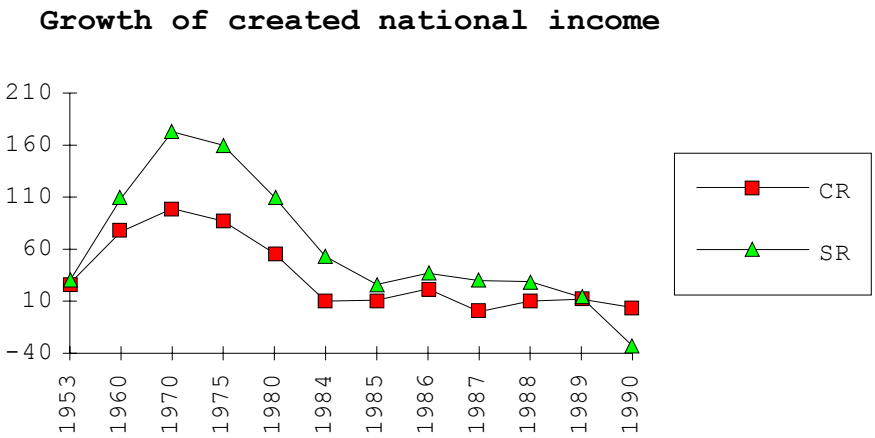
economic models (schools) to make economic decisions. See Analysis of Frankel J. A. & Rockett K. (1988) for interesting consequences of this fact on results of policy coordination.

Figure I.6. Fall of GNP in the Transition Period (billion crowns)



Data source: FSU, CSU.

Figure I.7. Different Growth of Created National Income (%)



Data source: FSU.

Consequently, the expectations of the future output growth and standard of living growth had to be corrected more significantly in Slovakia. Also, it has became necessary for Slovakia to absorb a much greater fall in the gross investment than for the Czech Republic (Table I.4.).

Table I.4. Different Fall of Gross Investment

% change	1,990	1991	1992
Gross investment CR	- 12.9	- 13.1	- 0.8
Gross investment SR	- 12.9	- 32.3	- 20

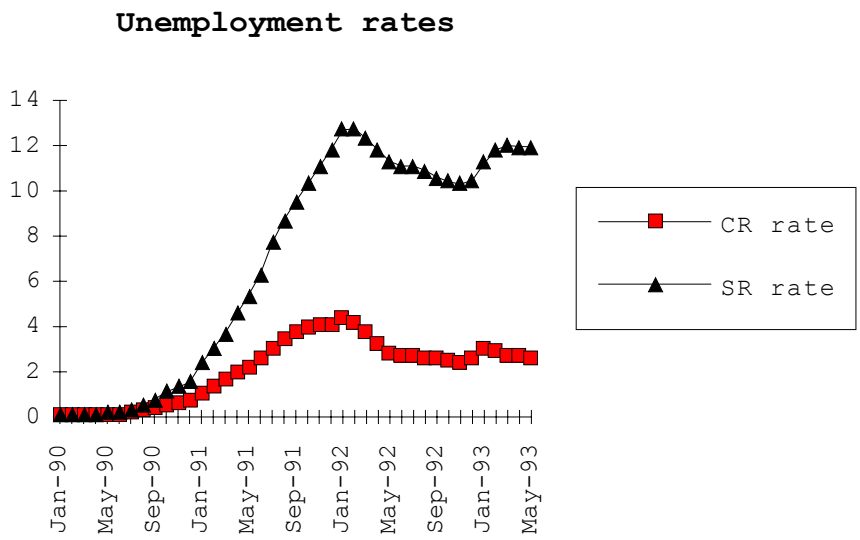
Data source: FSU, Hospodarske Noviny (Economic News).

Similarly, productivity has been falling in both republics due to the transition process. However, it was higher in the Czech Republic (in 1991, according to Hospodarske Noviny, GDP per capital in the Czech Republic represented 118 % of GDP per capital in Slovakia).

The Czech Republic has been expected to adapt faster. Therefore the Czech Republic providing cheap labour with expected fast productivity growth has attracted more foreign capital. According to the Monetary Report of SBCS (1992), more than 90 % of the total foreign capital inflow (into the former Czechoslovakia) was flowing into the Czech Republic in 1992. Asymmetric foreign capital inflow has increased differences between expected economic performances of both republics.

The different nature of the Czech and Slovak economies has been most significantly reflected in the unemployment rates' divergence.

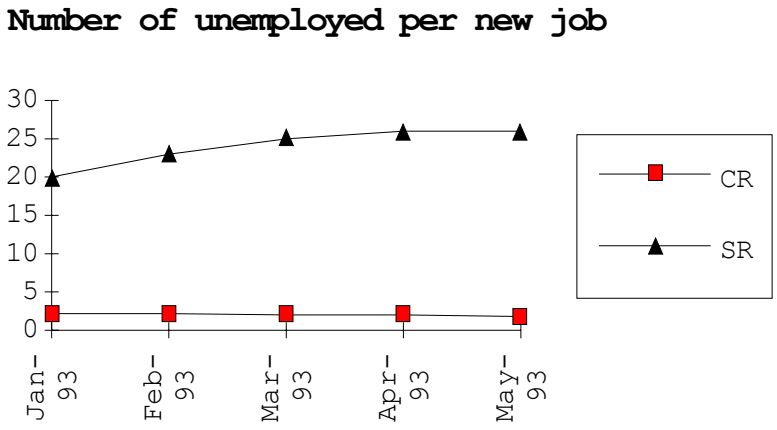
Figure I.8 Divergence of Unemployment Rates



Data source: CSU, SSU, FSU.

Figure I.8. shows that Slovakia faces a consistently higher unemployment level than the Czech Republic. Moreover, the increasing difference could only be enlarged by the difference in the creation of new jobs (Figure I.9.).

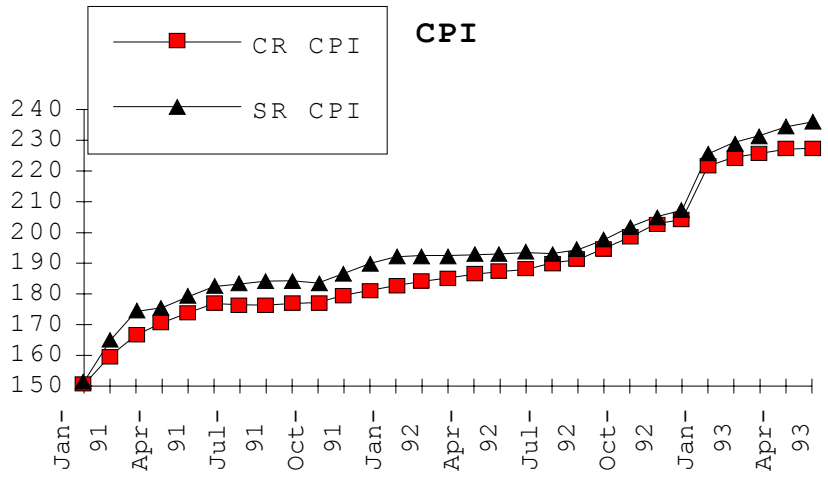
Figure I.9. Difference in Creation of New Jobs



Data source: CSU, SSU.

Since both republics followed the common transition strategy of the CSFR, their inflation records are very similar. However, the Slovak price level has consistently been above the Czech price level (Figure I.10.).

Figure I.10. Different Price Levels



Data source: CSU, SSU, FSU.

The budgets of the republic governments were balanced (Tables I.5., I.6. and I.7.) in the former Czechoslovakia. However, there was a fiscal federal system through which the Czech Republic transferred part of its revenues into the Slovak Republic. The Czechoslovak State Bank (SBCS) estimated these transfers to be from ten to fifteen billion[4] crowns per year since 1948. In 1992, the estimated transfer was about twenty billion crowns. Table I.7. illustrates the importance of the Czech transfer for the Slovak budget performance. Ceteris paribus, revenues from Slovakia would not be high enough to cover the Slovak government expenditures.

Table I.5. Budget Revenues

Revenues (mil. Kcs)	CR	% of GNP	SR	% of GNP
1991	251,187	36.18 %	125,087	44.11 %
1992	251,380	34.03 %	115,876	57.36 %

Data source: SBCS, FSU.

Table I.6. Budget Expenditures

Expenditures (mil. Kcs)	CR	% of GNP	SR	% of GNP
1991	259,582	37.39 %	133,430	47.06 %
1992	253,080	34.26 %	123,809	61.29 %

Data source: SBCS, FSU.

Table I.7. Budget Deficits

Deficit (mil. Kcs)	CR	% of GNP	SR	% of GNP
1991	8,395	1.21 %	8,343	2.94 %
1992	1,700	0.23 %	7,933	3.93 %
1992 *	- 3,633	- 0.49 %	20,266	10.03 %

Data source: SBCS, FSU.

* This is an illustrative calculation - the republic budget performances without the Czech transfer.

It is important to recall that The Czech-Slovak Currency Union did not proceed with the federal fiscal system. Since January 1993, the Slovak Republic budget performance has been burdened with a sudden large fall in a capital inflow. Moreover, the federal fiscal system was not the only redistributive tool within the former Czechoslovakia. Czechoslovak financial institutions

[4] Billion refers to a thousand of million.

were redistributing savings in order to balance the gap between the level of savings and the level of investment in Slovakia (Table I.8. shows savings and credits in Slovakia). Also, the redistribution of profit within the Czech-Slovak enterprises was possible in the previous regime.

Table I.8. Lack of Savings in Slovakia

(Billion Kcs)	1991	1992
Total savings	172.8	188.6
Total credits	207.1	236
Difference	- 34.3	- 47.4

Data source: FSU, Hospodarske Noviny.

Therefore the total fall in a capital inflow from the Czech Republic was probably larger than the federal transfer was.

The size of the budget revenues and expenditures was increasing relatively to GNP in Slovakia while decreasing in the Czech Republic. To some extent, this tendency was caused by a different approach to the privatisation and by a different social orientation of the republic governments.

2. 4. c. Adjustment Mechanisms

Lack of independent economic tools caused that solution of asymmetric problems and reduction of divergence trends relied on other adjustment mechanisms.

Although unemployment rates differed between the Czech and Slovak Republics significantly, labour mobility between the republics was not high. A housing problem (a housing market has not been developed yet), traditions (during the previous regime people did not change their jobs and places of residence) and structural unemployment problems (skills of unemployed workers do not match requirements of available job openings and re-qualification program in Slovakia is not very successful) were causes of low labour mobility.

In 1992, according to the Federal Statistical Office, only 11,740 people moved from Slovakia to the Czech Republic and 6,823 from the Czech Republic to Slovakia. This was not enough to cause unemployment rates to converge.

The tension between monetary and fiscal targets of the two governments was not reduced by a private capital inflow to depressed regions. Transfers from the Czech Republic were stopped,

and foreign private capital inflow was asymmetric. The fact that a large portion of the private foreign capital was invested in the Czech republic could only enlarge differences.

Higher competitiveness of production of depressed regions concentrated in Slovakia could be gained through real depreciation. Since a nominal devaluation and commercial policies were not available for Slovakia, competitiveness of the Slovak products depended on a downward flexibility of nominal prices and wages. However, problems accumulated since 1948 were impossible to solve by deflation in a short period of time. The social orientation of the Slovak government and the strong position of trade unions implied strong pressure not to lower wages.

2. 4. d. Absence of Fiscal Transfer System

In the Czech-Slovak currency union, the absence of the transfer system was sudden and had asymmetric consequences for the Czech and Slovak Republics. The Czech government was expected to balance its budget, while the Slovak government was expected to have a large deficit. The Slovak financial institutions faced a sudden savings-investment gap.

Absence of a transfer system was more important than it would have been in a union with a well-developed financial market. It was more difficult to reduce an asymmetry in the budget performances by a domestic private capital borrowing. Also, there was an asymmetry in demand for government bonds. While the Czech government managed to sell all bonds to financial institutions, the Slovak government's bonds were sold to NBS. The difference in interest rates (Table I.9.) documents that demand for the Slovak bonds was smaller than demand for the Czech bonds.

Table I.9. Interest Rates -Government Bonds

government bonds 1992	Interest rates
Czech emission	7 - 12.5 %
Slovak emission	16.5 %

Data source: Hospodarske Noviny

In summary, fiscal and monetary policy coordination was more difficult within the union than within CSFR since the asymmetry of the system was sharpened by a sudden absence of fiscal transfers.

2. 5. Weighing the Benefits of Currency Union

Benefits of the union were affected by four factors: a large interdependence of both republics developed in the period of seventy years, the split of CSFR, a transition period toward market economies and by the conditional character of The Monetary Arrangement. Last three factors reduced potential benefits of a currency union significantly.

Specifically, the uncertainty was not removed by the split of Czechoslovakia causing the Czech and Slovak foreign reserves to be unstable, trade volumes to fall and foreign investors to wait. Necessary conditions for an existence of a currency union were not fulfilled. The union lacked well-developed financial markets, a clear and mutually acceptable fiscal transfer system, a common pool of foreign reserves and willingness to cooperate in the long run.

2. 5. a. Transition

Transition has revealed many problems which make policy coordination difficult. A lot of inefficiency in the structure of economy decreased all potential benefits from economic and political integration. The effectiveness of adjustment mechanisms was reduced. The benefits from financial market integration were not visible although the first wave of voucher privatisation and the growth of the private sector would probably have increased their weight in the future.

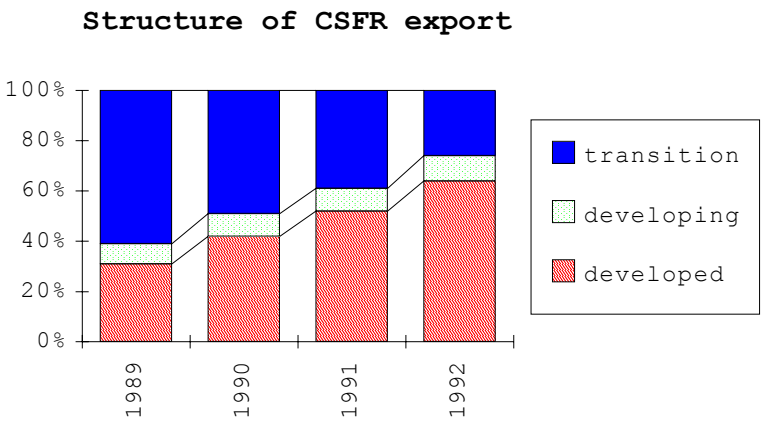
2. 5. b. Interdependence

The interdependence of the union members strongly supported the idea that the union was beneficial for both of them. Since the Czech and Slovak Republics are open to each other (the interdependence was built over a period of seventy years) they could gain significantly through economic and political cooperation.

With a high degree of interdependence, there is a possibility of the transmission of instabilities on a large scale if no cooperation takes place. Specifically, The Federal Statistical Office estimated that a 30 % fall in Czech-Slovak trade would cause a 4 % fall in the Czech GDP and a 8 % fall in the Slovak GDP.

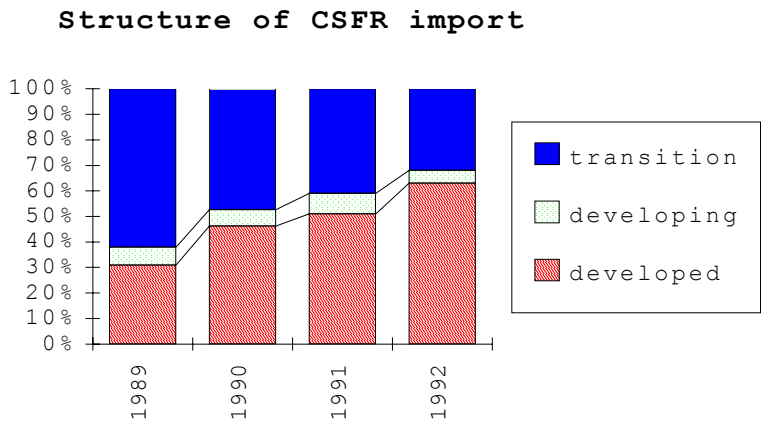
However, we cannot neglect the dynamics of the structure of trading partners. The Czech-Slovak interdependence was planned, and it did not reflect comparative advantages. After 1989, both countries have become more open toward developed countries, and their trade with countries in transition has fallen (See figures I.11. and I.12).

Figure I.11. Change in Export Orientation



Data source: FSU, CSU, SSU.

Figure I.12. Change in Import Orientation.

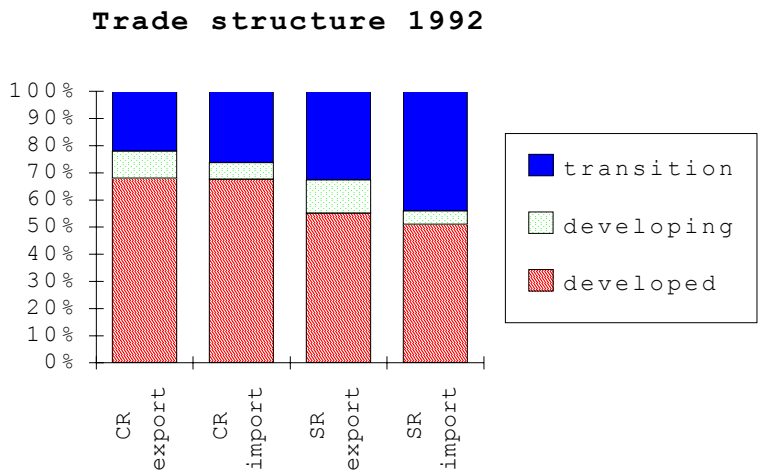


Data source: FSU, CSU, SSU.

The gradual change in a structure of trading partners will reduce interdependence decreasing the possibility of instability transmissions. It is not clear that economically different countries would obtain more stability by using common strategies than by decreasing inefficient interdependence.

It is interesting to compare the trade structure of both republics. The Slovak Republic seems to be oriented toward countries in the transition process more than the Czech Republic (Figure I.13).

Figure I.13. Asymmetry in Trading Partners Structure



Data source: FSU, CSU, SSU.

2. 5. c. Split of CSFR

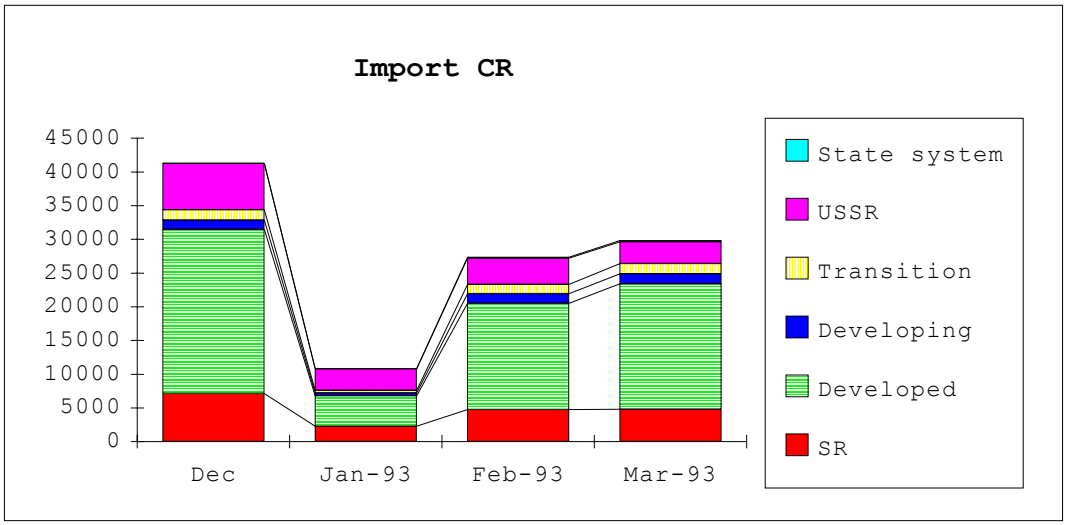
In the pre-union system (the former Czechoslovakia), the benefits of a currency union were realized (but limited due to transition).

After the split of Czechoslovakia, both members of the currency union were losing them gradually. The benefits started decreasing in significance when the federal fiscal system collapsed. It was not possible for a "just divorced pair" to build a new supranational fiscal system in order to ease monetary and fiscal policy coordination.

Any cooperation was complicated by the question of the asset division between the republics. The division of Czechoslovak assets has appeared to be a complicated problem. Slovakia requires a compensation for federal know-how, the Czechoslovak flag and for loss of small regions after World War II. Also, since Slovak banks lacked liquid assets, they borrowed 24.7 billion Kcs from SBCS in December 1992.

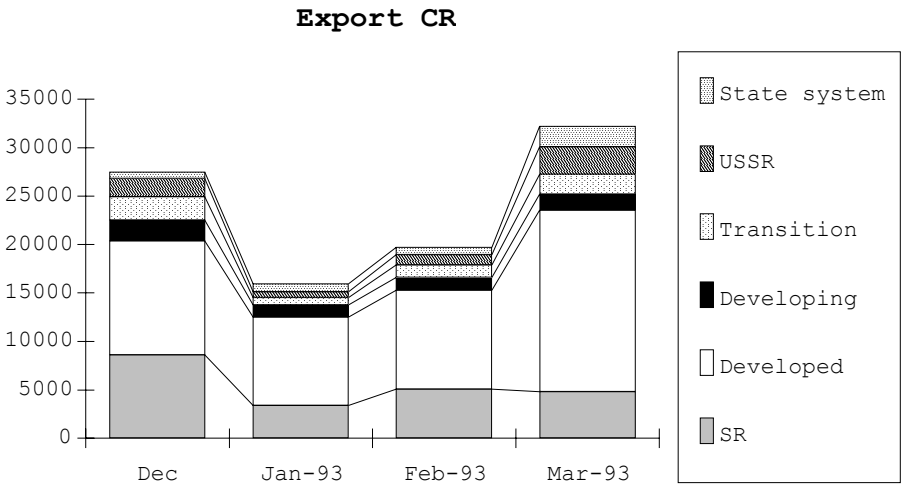
The "economic integration" benefit was reduced by the fall in the Czech-Slovak trade caused by the split of CSFR, expectations of the collapse of the union and by the "VAT" tax reform (Figures I.14. and I.15. show the fall in imports and exports of the Czech Republic).

Figure I.14. Fall of Imports in January 1993 (mil. Kcs)



Data source: CSU.

Figure I.15. Fall of Exports in January 1993 (mil. Kcs)



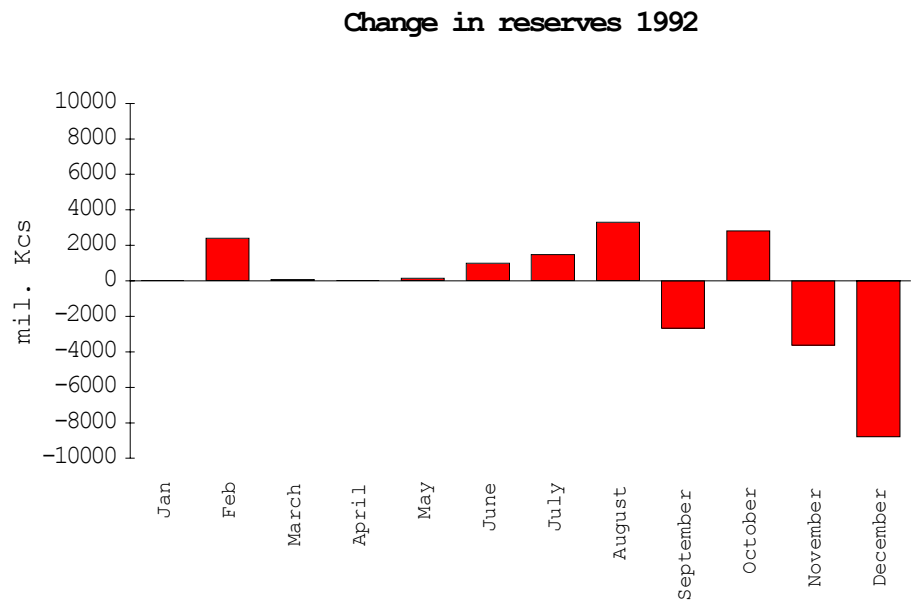
Data source: CSU.

2. 5. d. Temporality

Temporality of the union affected expectations and, as a result, speculative flows appeared although they were difficult to allocate within the union. Uncertainty was probably higher in Slovakia. Private and legal persons expecting a short-lived currency union tried to avoid possible losses by moving assets from Slovakia to the Czech Republic. In comparison with 1991 purchases, according to The Czechoslovak State Bank, the private purchases of foreign currencies decreased by 1.3 billion Kcs in the Czech Republic in 1992, and they increased by 1.1 billion Kcs in the Slovak Republic.

Moreover, the stability and credibility of common currency was eroded. Both central banks faced a sharp fall in foreign reserves. The fall of reserves began in November 1992 and it was not stopped by the split of CSFR. Commercial banks were demanding foreign currency in large volumes (Figures I.16. and I.17.).

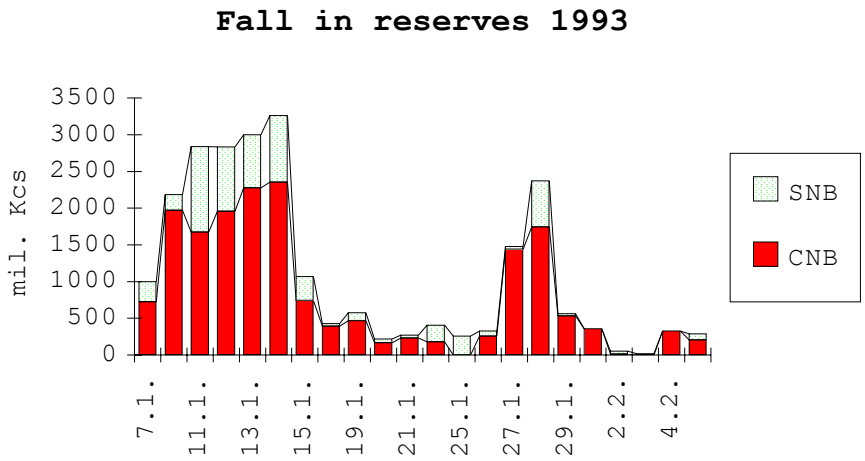
Figure I.16. Change in Reserves of SBCS in 1992 (monthly)



Data source: CNB, SBCS.

Foreign trade partners affected by uncertainty required immediate settlements (and caused a decrease in trade by doing so). Foreign commercial banks were not accepting Czechoslovak crowns and were selling their crown reserves. Sources of foreign capital inflow were lost temporarily for both republics.

Figure I.17. Fall in Reserves of CNB and NBS (Jan-Feb 1993).



Data source: CNB, Hospodarske Noviny.

2. 6. Summary

After the split of CSFR, the currency union provided a time space necessary for an adjustment. Although a currency union might appear to be the best solution to the problem of the Czech-Slovak exchange-rate system given their historical and economical interdependence (common stable currency, no trade barriers, no cultural barriers), their size and EC orientation, the union collapsed after six weeks.

A transition toward a market economies, consequences of the split of Czechoslovakia, temporality of the union and unequally shared burdens of these constraints affected potential costs and benefits of a currency union crucially. On the one hand, potential benefits of the currency union were reduced significantly by economic and political constraints. On the other hand, costs of the system were increasing since the policy coordination was becoming more and more difficult. Available adjustment and absorption mechanisms were weak to outweigh the increasing need for independent economic tools.

3. The Czech-Slovak Clearing Union

In February 1993, the Czech-Slovak currency union was replaced by a clearing union and the Czech and Slovak currencies were separated. All payments between the republics are regulated by The Payments Agreement[5].

The present exchange-rate system has two regimes. First, all transactions of legal and physical persons belong to the clearing regime. In this regime the Czech and Slovak crowns are independent and inconvertible currencies. Second, there is a flexible-rate regime for tourist expenditures. In this regime, the Czech and Slovak crowns are fully convertible. The following paragraphs provide a more detailed description of both regimes as well as a description of the four available Kc/Sk exchange rates[6].

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[5] The Agreement was valid until December 1993. After December 31, if non member country abandons the Payments Agreement, it remains valid with three months time of notice.

[6] Although the present exchange-rate system between the Czech and Slovak Republics does not belong among free-convertible regimes, it is analyzed as a multiple-rate system for following reason. The clearing union allows for domestic residents of either member country to convert domestic currency at the official compouned exchange rate (through ECU) into the other member country´s goods. Since this category of *goods* is not restricted (specifically, it includes all current transactions), economic agents of both countries consider the clearing rates (compound from Kc/ECU and Sk/ECU exchange rates) as the exchange rates of Kc/Sk.

3.1. Description

3. 1. a. Clearing Payments

A clearing mechanism[7] has been applied to prevent the collapse of the inter-republic trade and to allow to settle all inter-republic debts without difficulties. CNB and NBS have established clearing accounts with ECU as a clearing unit, and they have committed themselves to a maintaining the exchange rate of one ECU to one account ECU with 5 % bands.

$$(i) \quad E_2 = E_1^* (1 + \delta)$$

The exchange rate E_2 is used for the transactions settled through the (standard) clearing account where E_1 = (Kc/ECU)/(Sk/ECU) is a compound exchange rate and δ (clearing revaluation/devaluation) belongs to the interval: (-10 %, 10 %). In the future, the Czech export to Slovakia could be affected by an import tariff t using $E_2 = E_1^* (1 + \delta)(1 - t)$.

The clearing mechanism uses a monthly settlement period. The deficit country's government has to settle any imbalance greater than 130 million ECU in convertible currencies.

It is worth noting which transactions are settled through the clearing mechanism: trade and services transactions (all transit payments included), financial transfers, capital account transactions (investment, purchases and sales of assets) and debt serving. Financial transfers is a category used for social transfers, private transfers (insurance) and the account transfers (Slovak residents had to transfer their accounts into the Slovak Republic until May 1993).

Two types of transactions are not settled through the (standard) clearing account. First, the Czech-Slovak transactions from the period before 8. 2. 1993 are settled through the "old clearing account" with an account unit XCS (account crown) allowing to settle the inter-republic debts at a rate of one to one:

$$(ii) \quad E_3 = 1 \text{ [Kc/Sk]}.$$

The old account deficit is added to the "new" account[8] every three months (the first summation was made on May 15, 1993).

Second, the re-export transactions are settled directly in convertible currencies. The export of goods imported from the third country is considered to be a re-export transaction. It is a re-export transaction only if the character of the exported goods was not changed (packing, marking and preservation are not considered to be a change).

$$(iii) \quad E_1 = (Kc/ECU)/(Sk/ECU)$$

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[7] For an interesting analysis of a multilateral clearing mechanism see paper of Peter Bofinger in CEPR Discussion Papers (1990, No. 458).

[8] The standard clearing account is called the new account in order to emphasize that it is different from the old account.

The compound exchange rate E_1 is used for re-export transactions and for other Czech-Slovak transactions settled directly in convertible currencies. In the future, prices of Slovak import may be affected by an import tariff t using E_1 = (Kc/ECU)/(Sk/ECU)(1 - t).

3. 1. b. National Currencies in Reciprocal Tourism.

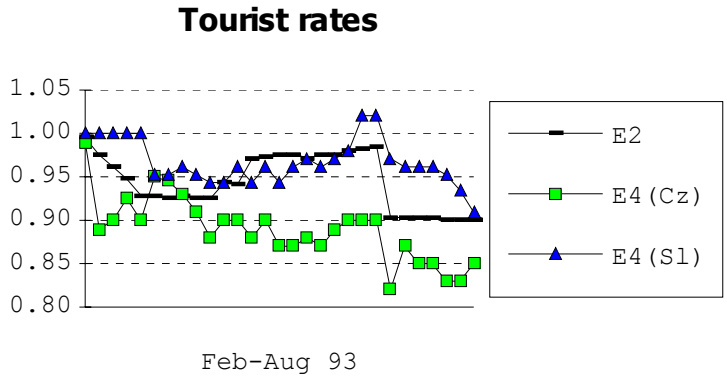
According to the Czech-Slovak Payments Agreement, the Czech and Slovak financial institutions are allowed to trade with both national currencies (among themselves and with private persons).

Private persons are allowed to use national currencies for paying tourist expenditures. Physical persons are allowed to use national currencies to cover their expenses during a business journey in the relevant country. They can export and import 7,500 Kc (Sk).

Although, an access to the other currency is formally restricted for residents of both republics by the amount of 7,500 Kc (Sk) daily, financial institutions in Prague are willing to buy larger amounts of Slovak crowns (up to 20,000 Sk). Also, it is possible to exchange crowns daily in more than one bank. The only real restriction is a shortage of Slovak crowns in the Czech banks. Since the Czech banks are not willing to trade crowns with the Slovak banks, purchases from private persons are the only source of Slovak crowns for them.

Conversely, Slovak financial institutions demand Czech crowns from Czech financial institutions at an exchange rate close to the clearing rate without response. Figure I.18. shows that although the Slovak financial institutions lack Czech crowns, their official exchange rate of Kc/Sk ($E_{4(Sl)}$) is higher than that offered by Czech financial institutions ($E_{4(Cz)}$).

Figure I.18. Official Floating Exchange Rates (Kc/Sk)



Data source: Hospodarske Noviny.

The uncertainty causes commercial banks to follow the clearing rate (and to trade at nearly zero volumes) instead of finding a realistic exchange rate of Kc/Sk.

Consequently, since the official floating exchange rate E_4

$$\text{(iv)}\quad E_4 = f(E_1, \text{local supply, local demand})$$

does not reflect total supply and demand for the Czech and Slovak crowns, it does not provide information about market relative price of crowns.

3. 2. Changes in the Benefit Structure

What has been lost by a change of the exchange-rate system and what has been gained? On the one hand, the new benefits have appeared in the benefit structure - a time gain and a flexibility of the new system. The time gain is of a temporary nature being reduced by postponed adjustment consequences continuously. A flexibility gain will only improve the system if exploited.

On the other hand, benefits linked with the currency union were reduced further. Not only has the collapse of the union crossed out the common currency from the list of benefits, it has also reduced the degree of integration. Uncertainty remains, caused by expected changes in the system such as restrictions or exchange-rate changes.

However, changes in the benefit structure have not been as dramatic as they would have been in the case of a stable currency union since the weight of potential union benefits had already been reduced by the temporality of the union and by the disintegration process initiated by the split of Czechoslovakia.

3. 2. a. From Common Currency to Two Currencies

With two currencies, a necessity of a currency exchange has appeared. Private persons have to exchange currencies when travelling to the other country. Legal and physical persons have had to learn to deal with a clearing mechanism (and to avoid it). An increase of transaction costs is an important loss since the inter-republic transactions are of a large scale and impossible to reduce in the short run. Also, with two currencies, it has become necessary to find what the appropriate exchange rates of Kc/ECU and Sk/ECU should be. Since changes in the relative price of the two currencies are expected, some uncertainty remains in the system.

The existence of two currencies has brought a new asymmetry into the system. The Slovak and Czech crowns differ in credibility and expected stability. The worse Slovak economic position has resulted in expectations of devaluation. Since February 1993, CNB has been

building its foreign reserves permanently. On the contrary, the collapse of the union has not stopped a fall in the NBS's foreign reserves (See Table I.10.).

Table I.10. Reserves of the Czech and Slovak Central Banks (in million of $)

1993	CNB	NBS
February	690	420
March	1265	240
April	1670	142
May	1993	120
June	2256	260

Data source: CNB, Hospodarske Noviny.

Moreover, the existence of two currencies has allowed speculations against the "weaker" one. The speculative flows between the republics may affect the system since the clearing regime provides some space for speculations[9].

3. 2. b. Separation of Financial Markets

The trend of separation of financial markets continues. With two currencies, there are more barriers to allocation of resources within the Czech-Slovak economic area.

For example, for the next waves of voucher privatisation, residents of both republics are not allowed to bid for the other republic's shares. It is also not possible for them to deposit their savings accounts in the other country.

3. 2. c. Economic Disintegration

The Czech-Slovak Customs Union and the clearing mechanism provide a framework for the Czech and Slovak Republics to continue economic cooperation. However, the Czech-Slovak trade has fallen in the beginning of 1993 significantly. The size of the fall has been estimated (by

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[9] Also, there were common coins and bills in the first half of the year 1993 and the number of falsified bills was increasing. There were common coins (1, 2, 5 and 10 Kcs). The republics used common bills (10, 20, 50, 100, 500 and 1000 Kcs) where bills higher than 50 Kcs were stamped in both republics. The 20 Kcs and 50 Kcs bills were stamped only in Slovakia. By removing stamps or by replacing stamps it was possible to "exchange" Slovak crowns for Czech crowns at a rate of one to one. Also, common coins and bills allowed these exchanges.

different institutions) to be from 30 to 50 percent of the 1992 trade volumes. It is worth recalling that this alone implies at least a 4 % fall of the Czech GDP and an 8 % fall of the Slovak GDP according to estimates made by the Federal Statistical Office.

The fall of trade volumes is not necessarily a direct consequence of the collapse of the currency union. Firstly, it has been caused also by the CSFR split, and it may be temporary. Secondly, the tax reform in January 1993 (VAT) caused trade to increase at the end of 1992 and to fall in the beginning of 1993. Thirdly, the fall in trade also reflects inefficiency in the structures of both economies. Finally, the CSFR split has made interfirm debts an international issue. Firms could not expect the governments to cancel international debts or guarantee the payments. As a result, the firms have begun to select their trading partners more carefully.

From the previous paragraph we may infer that the disintegration trend has only been speeded up by the collapse of the currency union. The inefficiency of economic interdependence is being reduced and more transparent system will be gained.

3. 2. d. Political Disintegration

In the present system there is only one supranational political institutions: The Council of Customs Union. The process of political disintegration has been continuing since December 1992, and has made any step in the opposite direction (fiscal transfer system) impossible in the near future.

3. 2. e. Time Gain

The present system provides time for the Czech and Slovak Republics to accommodate the separation shock and the collapse of the currency union. Also, it provides time to find necessary information to determine appropriate exchange rates.

By using the clearing rate E_3, the present system allows the settling of all inter-republic debts without any complications. Some contracts may not be very clear on the question of in which currency they were denominated. According to a survey published in May 1993 in Hospodarske Noviny (Economic News) which included only sixty-three large enterprises, the net debt of Slovak firms was 1.95 billion Kc. Export and import price stability was gained for the Czech-Slovak trade temporarily since the original clearing rate maintained the one to one rate.

3. 2. f. Flexibility

The advantage of the present system is that a gradual change of the system will not be difficult. Specifically, there is a possibility to remove capital operations (or other category of

transactions) from the clearing regime which would prevent large capital flows between the republics. Also, it is possible to merge both clearing accounts and establish a standard bilateral clearing system.

3. 3. Changes in the Cost Structure

By changing the exchange-rate system, the Czech and Slovak Republics have gained the possibility to use monetary and fiscal policies more independently. Also, new economic tools are available for both republics: exchange-rate and commercial policies.

Since factors that made coordination within the currency union extremely difficult were not removed by a simple change of the exchange-rate system and, moreover, the change of the system has enlarged asymmetry, the availability of independent economic tools is an extremely important gain.

As following analysis suggests the Czech and Slovak authorities have started exploiting of "independence" gain by adjusting in monetary, fiscal and exchange-rate policies. Consequently, with uncoordinated monetary, fiscal and exchange-rate policies, the pressure on the clearing rates has been created reducing stability of the present system.

3. 3. a. Monetary Policy and Revenues Mix

Under a currency union, both union members had to agree on a common monetary policy. Now, the Czech and Slovak Republics have gained a limited independence of monetary policies (limited in a sence that both countries use exchange rates as nominal anchors).

Specifically, it is possible for monetary policies to reflect different output growth rates. Also, the present system allows for both republics to set different mixes of revenues' sources. However, with non-coordinated monetary policies, the inflation asymmetry is more likely to appear. Governments' estimates show that inflation is expected to differ in the Czech and Slovak Republics (See table I.11.).

Table I.11. Inflation Asymmetry in 1993

1993	CR	SR
I-II Q.	11.8 %	13.6 %
Govt. estimates for 1993	15 - 17 %	30 %

Data source: CSU, SSU, Hospodarske Noviny.

3. 3. b. Fiscal Policy

Fiscal policies are independent since the government budget deficits are not limited by The Payments Agreement. However, there is some limit to differences in budget performances. If this limit is exceeded, the asymmetry is increased and transformed further into the system. Specifically, the higher the Slovak deficit is, the lower is the probability that the government will

be able to finance it by raising revenues, selling bonds or by borrowing. The monetizing of the deficit would again increase an inflation asymmetry.

Table I.12. compares the surplus Czech budget performance with the increasing Slovak budget deficit. It has been increasing dramatically since January 1993 because of unexpectedly low revenues and a fiscal overexpansion. With deficit higher than 8 % of the previous year's GDP, the Slovak budget performance has probably exceeded the above-defined limit.

Table I.12. Budget Performances in 1993 (billion of crowns)

	Surpluses		Surpluses as % of 1992 GDP	
	CR	**SR**	**CR**	**SR**
Jan.	- 2.7	- 1.5	- 0.68 %	- 0.89 %
Feb.	5.8	- 1.5	1.45 %	- 0.91 %
March	10.4	- 11	2.60 %	- 6.51 %
April	5	- 11	1.25 %	- 6.51 %
June	4.8	- 11.8	1.20 %	- 6.98 %
July	5.6	- 14.8	1.40 %	- 8.76 %

Data source: CNB.

Summing up, an asymmetry in the credibility and stability of the Czech and Slovak crowns would burden future policy coordination with a different output-inflation trade-off.

3. 3. c. Exchange Rate and Commercial Policies

The Czech and Slovak Republics have gained new economic tools allowing them to respond to the balance-of-payments imbalances independently. The Slovak authorities made use of an exchange-rate policy to solve the overvaluation problem.

The Czech-Slovak clearing system was established with the original exchange rates: Kc/ECU = Sk/ECU = Kcs/ECU. While the Kc/ECU exchange rate has been stable since February 1993, economic indicators suggested that the Slovak crown was overvalued.

The significant imbalance of the Slovak balance of payments caused the foreign reserves of NBS to fall sharply in the first half of 1993 although the Slovak government sold out enterprises (Tobacco industry was sold for 80 million $ and other contracts were announced for

near future) and received official loans (90 million $ from IMF). The Slovak balance of payments has not been officially publicized. Nevertheless, the previous analysis indicates what the trends are on the Slovak current and capital accounts.

In 1992, the Czechoslovak trade balance was in deficit and the Czechoslovak service balance was in surplus which exceeded the trade deficit (Table I.13.). Most revenues from tourism and services (80 %) came from the Czech Republic.

Consequently, the service surplus in Slovakia may not be large enough to cover the trade deficit in the case that the trade tendency has been continuing enlarged by the 1993 overexpansion of the Slovak government. Also, it is possible that demand for Slovak export may decrease because of a small export competitiveness.

Table I.13. CSFR's BOP
(convertible currencies)

(billion of Kcs)	TRADE	SERVICES	CA	KA	ERORRS & OMISSIONS	CHANGE IN RESERVES
1992	- 44,573	46,746	6,382	1,149	- 10,929	- 3,397

Data source: CNB, SBCS.

In 1993, the Czech-Slovak trade entered the Slovak balance of payments. Table I.14. suggests that there is a Slovak trade deficit. As a result, the Czech-Slovak trade has not improved the Slovak current account balance.

Table I.14. Czech-Slovak Trade in 1993
(million of crowns)

1993	Czech Surplus	Export	Import
January	1,100	3,400	2,300
February	600	5,600	5,000
March	900	7,300	6,400
April	500	6,100	5,600
May	- 100	5,700	5,800
June	- 1,600	4,200	5,800
Total	**1,400**	**32,300**	**30,900**

Data source: CSU.

In February 1993, a capital outflow from Slovakia was continuing increased by expected inflation, restrictions[10] and devaluation.

Neither the clearing revaluation of the Slovak crown nor Slovak government proclamations were strong enough signals to stop capital outflow. Although the change of the Slovak tax system (zero tax on foreign currency deposits) intended to attract savings of Slovak residents deposited abroad, it may increase demand for foreign currencies further.

Within the union, the private capital inflow was concentrated into the Czech Republic. The 1993 economic performance of Slovakia has not reduced uncertainty. Hence a private capital inflow has probably not increased greatly.

The negotiation between the Slovak government and IMF signals that the official lending is an important source for Slovakia[11].

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[10] Different types of restrictions indicated that there was a need for an exchange-rate adjustment. The Slovak government has announced the 20 % import tariff for some key products including all consumption goods and agricultural products (which is 40 % of all the Czech-Slovak trade) but it was postponed several times. The limit for private foreign exchange has been changed from 7,500 Sk per year (available at any time) into 4,500 Sk available in the first half of 1993. NBS controlled allocation of foreign exchange. The sales of foreign currencies to commercial banks in Slovakia were nearly zero in the first quarter of 1993. Foreign investors expect an introduction of additional capital restrictions which would prevent them from moving interests and profits to their domestic countries and which would move the Slovak crown toward inconvertibility.

[11] The negotiation started in April 1993 (90 million $ loan). Since the 30 % devaluation of the Slovak crown suggested by IMF was not acceptable for Slovakia, the talk was concentrated on an import tariff after that. In July, the arrangement was signed followed by the 10 % devaluation.

In addition, the Slovak capital account situation has been worsened by an absence of the capital inflow from The Czech Republic which has increased need for a capital inflow from third countries.

On July 16, 1993, the ten percent devaluation of the Slovak crown was announced signalling that Slovak authorities have started exploiting the newly gained economic tools.

However, factors lowering the effects of devaluation are present in the Slovak economy. There is still a lot of uncertainty regarding the Slovak economic strategy since no credible economic program has been proclaimed. The devaluation not supported by other transition economic strategies cannot eliminate problems which have burdened the republic during transition.

Moreover, the Slovak authorities announced that the scale of devaluation would be corrected if not appropriate. If devaluation is not of an adequate size then the gains will be ambiguous. Since devaluation expectations may continue, the system would again be burdened with all overvaluation consequences. Also, a small nominal devaluation does not imply that the real devaluation is reached. Hence the Slovak current account balance would not be improved, and export industries would not become more competitive in this case.

The Slovak economic performance, especially the budget performance, has raised the problem of an inflation increase (and devaluation may accelerate inflation also). The current unemployment and output situation suggests that it may be too costly for Slovakia to reduce inflation to the lower level. Consequently, the devaluation gain may be eroded rapidly by significant inflation differential.

4. Conclusions

The cost-benefit analysis of the Czech-Slovak exchange-rate system shows that since the nature of the Czech and Slovak economies differ and the adjustment mechanisms are weak, the costs of the currency union exceeded benefits which were reduced by economic and political constraints.

On the one hand, the clearing union, established after the collapse of the currency union, has sharpened the asymmetry in economic performances of the Czech and Slovak Republics and, as a result, it has made policy coordination more difficult and costly for both members of the clearing union. Moreover, benefits of the exchange-rate system linked with the currency union have been reduced further. Consequently, policy coordination under the present exchange-rate system would be less beneficial than it would have been within the currency union. Also, it is not realistic to expect the recently established republics to ease policy coordination (specifically, by developing fiscal transfer system).

On the other hand, the present system provides for the Czech and Slovak Republics more independent economic tools. Consequently, since both republics have started exploiting them, potential costs of the exchange-rate system have been reduced. These results imply that the exchange-rate system allowing for monetary, fiscal and exchange-rate policies to differ is superior to solutions requiring closer policy coordination.

Our main conclusion is that the future Czech-Slovak exchange-rate system should be characterized by flexibility. While attempts to fix the Kc/Sk exchange rate would evoke the problem of policy coordination again, the exchange-rate systems based on the exchange rate E_1 would be less costly since this rate is characterized by a lower degree of fixity. Moreover, a stable fixed rate would require more information about the Kc/Sk relative price which has not been found yet.

The second conclusion is that monetary, fiscal, exchange-rate and commercial policies of both republics are not likely to converge in the medium run. Specifically, fiscal and exchange-rate policies have already started to diverge. The further divergence is likely and also the difference in monetary and commercial policies will probably affect the system. As a result, the gaps among the four Kc/Sk available exchange-rates will be expanded. Since the clearing union does not protect its members from destabilizing speculations the costs of which will be increasing with every policy response to the asymmetric problems, the present exchange-rate system calls for improvements.

Section II: Modifying Present System - Policy Recommendations

1. Introduction

The beginning of the year 1994 brings an opportunity to reform the exchange-rate system between The Czech and Slovak Republics with respect to the 1993 experience. There are two possible approaches to the further reform.

The first one is to continue with the clearing union which allows for converting a domestic currency of either member country into goods of the other member country and to modify the present system gradually. The second approach is to abandon the clearing mechanism completely and to use direct payments in convertible currencies instead. In this case, the Czech-Slovak transactions would be suddenly restricted by a necessity to convert domestic currencies into one of the convertible currencies in order to complete transactions.

The following subsection (Clearing Mechanism Versus Direct Payments) attempts to compare these two approaches considering the interdependence of both countries and the nature of asymmetry of the system. Since this analysis suggests that a system of direct payments is not superior to a clearing union in the short-run,

the last subsection (Toward a Single Rate) discusses the "modification" approach and examines what modifications would improve the present system.

We will conclude that the present clearing union constructs a multiple-rate system. Consequently, it should be reformed toward a single rate system in order to prevent destabilizing speculations that reduce benefits of a clearing mechanism by absorbing foreign reserves and by increasing imbalances of clearing payments. The modified clearing system would accomplish the main function-to provide for the Czech and Slovak Republics a mechanism allowing for making large volumes of inter-republic payments when economizing on foreign reserves.

2. Clearing Mechanism Versus Direct Payments

This subsection classifies under what circumstances it would be beneficial to abolish the clearing mechanism and use direct payments in convertible currencies. How do these alternatives differ? Let us denote the volume of the Czech payments by CP [ECU] and the volume of the Slovak payments by SP [ECU] for a given month. On the one hand, the alternative with a clearing mechanism implies following facts:

(i) both CNB and NBS are avoiding the circulation of their foreign reserves at the scale: CP+SP [ECU] (assuming that all payments are settled through a clearing mechanism); if the imbalance exceeds the limit of 130 mil. ECU, they economize at a scale of 2*min (CP,SP) [ECU] since a debtor settles deficit;

(ii) a country with lower volumes of payments provides a credit of abs (CP-SP) [ECU] to the other member country and the credit tends to increase deficit of this country's government;

(iii) a country with a clearing deficit will settle the difference greater than 130 mil. ECU in the end of the month otherwise its payments are postponed and it improves the government's budget.

On the other hand, a regime of direct payments would increase a monthly circulation of foreign reserves in both countries at a scale of (CP+SP) [ECU]. This alternative would be a superior solution if there are no constraints to increased

demand for foreign currencies in either member country or if consequences of constrained Czech-Slovak transactions are less costly than consequences of maintaining the clearing mechanism.

We will consider three factors that are possible to make a clearing mechanism costly: a decreasing size of clearing payments relatively to foreign reserves, a permanent clearing imbalance lower than the limit and a clearing imbalance permanently exceeding the limit. Potential costs caused by these factors may be still outweighed by costs of a regime of direct payments which is likely to cause a rapid significant fall in the Czech-Slovak transactions and to increase a riskiness of payments. Although the present system is a multiple-rate system, the costs of destabilizing speculations are not considered as costs of a clearing mechanism and they are analyzed in the following subsection.

As our previous description suggests, the larger the total volumes of payments are with respect to the level of foreign reserves, the more beneficial a clearing mechanism is. Table II.1. indicates that since the volumes of clearing payments are relatively large, the benefit of economizing on foreign reserves is not insignificant.

Table II.1. Relative Size of Clearing Payments

Month	Total Slovak Payments (bil. of crowns)	Total Czech Payments (bil. of crowns)	Sl. Payments (% of Sl. Foreign Reserves)	Cz. Payments (% of Cz. Foreign Reserves)
2	6.99	7.37	59 %	38 %
3	9.61	9.4	143 %	27 %
4	8.38	9.22	211 %	20 %
5	8.85	8.5	264 %	15 %
6	8.65	8.05	119 %	13 %
7	8.12	10.52	-	15 %
8 (1 - 18)	5.84	3.92	-	5 %

Data Source: CNB.

Also, it is obvious that this gain is asymmetric because Slovak payments relative to foreign reserves are much larger than for the Czech Republic.

Consequently, Slovak payments would be more constrained and uncertain if a clearing mechanism was cancelled.

According to this criterion, members of a clearing union would prefer to use direct payments after clearing payments become relatively small. The weight of total Czech and Slovak clearing payments may diminish for different reasons. First, the disintegration process would continue further causing all the Czech-Slovak transactions to fall in the medium run. For example, the inter-republic debts would be settled and inefficient Czech-Slovak transactions would be removed but not replaced by efficient cooperation. Also, increasing foreign reserves of both members of a clearing union would lower benefits of a clearing mechanism.

Second, with a narrowed category of clearing transactions the volume of payments would be lowered immediately. From this respect, a clearing mechanism for trade transactions is not superior to a present system.

As a result, since the volumes of clearing payments are likely to be relatively large with respect to the level of foreign reserves (at least for one member of a clearing union), the abolishment of a clearing mechanism would not improve the Czech-Slovak exchange-rate system in the medium run.

It is probable that the system will be asymmetric in the sense that the gain of economizing on foreign reserves will be more important for the Slovak Republic. Without a clearing mechanism, the Slovak Republic may respond to the "shortage" constraint by either reducing its purchases or by postponing payments. Consequently, a fall of Czech export to Slovakia would follow and the Slovak payments would become more uncertain.

Benefits of a clearing union may be reduced also by the large and permanent imbalance of clearing payments. The large and permanent deficit lower than the ECU limit affects the structure of the reserves of both central banks. Specifically, a creditor has blocked a part of the domestic reserves (since government deficit is increased) instead of receiving the payments in ECU. Table II.2. shows that Slovakia has been in the position of creditor since February 1993. The permanent Czech clearing deficit has not exceeded the ECU limit. However, given the level of the Slovak foreign reserves, the imbalance is significant. A deficit converging to the limit would probably be costly for Slovakia. It is possible to reduce this risk by lowering the limit (130 mil. of ECU).

Table II.2. Relative Size of a Cumulative Clearing Deficit

Month	Cumulative Czech Deficit (bil. of crowns)	Deficit (% of Cz. Foreign Reserves	Deficit (% of Sl. Foreign Reserves)	Deficit (% of ECU Limit)
2	0.37	1.94 %	3.19 %	8.48 %
3	0.17	0.48 %	2.50 %	3.81 %
4	1.00	2.15 %	25.25 %	22.72 %
5	0.65	1.16 %	19.24 %	14.63 %
6	0.05	0.07 %	0.64 %	1.06 %
7	2.45	3.54 %	-	55.43 %
8	0.52	0.67 %	-	11.82 %

Data Source: CNB.

Table II.2. also suggests that with the Czech Republic as a creditor, costs of the clearing union would not be increased given the level of the Czech foreign reserves. However, the Slovak permanent deficit might affect the Czech government's budget. Again, it is possible to reduce this risk by lowering the limit. From this respect, the monthly settlement period would improve the clearing mechanism.

A clearing mechanism may also be burdened with an imbalance often exceeding the ECU limit. If an imbalance is caused by a fall in payments of a creditor (when a creditor does not use a clearing mechanism for some reasons) and, as a result, a debtor does not economize on its foreign reserves then members of a clearing union are indifferent between a clearing mechanism and a regime of direct payments. However, with a creditor exploiting a clearing mechanism (a clearing deficit exceeds the ECU limit but is relatively small with respect to volumes of payments) and with a debtor constrained by a shortage of foreign reserves, a clearing union would be superior to a regime of direct payments. It reduces riskiness of the exchange-rate system allowing for a debtor to economize on reserves to some extent. In a regime of direct payments, a debtor's payments would fall reduced by a shortage of foreign reserves. As a result, a debtor would decrease purchases and postpone payments.

Table II.3. indicates that the cumulative Czech deficit is relatively small with respect to the volumes of payments. It also demonstrates that a deficit exceeding

the ECU limit would be relatively large (it also supports the idea that a lower limit or a monthly settled deficit would improve the system).

In summary, under conditions that a clearing account exhibits the permanent and large Czech deficit and the Czech foreign reserves are stable, the abolishment of a clearing mechanism would not deteriorate the system. On the contrary, the permanent Slovak deficit, instability of the Slovak foreign reserves and non-decreasing volumes of payments would favour a clearing mechanism.

Table II.3. Cumulative Clearing Deficit Versus Total Payments

Month	Cumulative Czech Deficit (% of Total Sl. Payments)	Cumulative Czech Deficit (% of Total Cz. Payments)	ECU Limit as % of Total Slovak Payments	ECU Limit as % of Total Czech Payments
2	5.36 %	5.09 %	65 %	62 %
3	1.75 %	1.79 %	47 %	48 %
4	11.98 %	10.89 %	54 %	49 %
5	7.30 %	7.61 %	51 %	54 %
6	0.54 %	0.58 %	53 %	57 %
7	30.18 %	23.29 %	56 %	43 %
8 (1 - 18)	8.94 %	13.34 %	78 %	116 %

Data Source: CNB.

The first section demonstrates that there are factors present in the system which will tend to increase the Slovak deficit in the medium run. Hence the Slovak permanent deficit is more likely to burden the system[12]. Specifically, a further increased asymmetry in convertibility of the Czech and Slovak crowns would increase Slovak clearing payments since the clearing mechanism would allow for easier exchanges of the Slovak crowns for goods (and for convertible currencies). Also, the overvalued Slovak crown may burden the system causing the Czech payments to fall, the Slovak payments to increase and the Slovak foreign reserves to oscillate. Similarly, the clearing overvaluation of the Slovak crown on the old account tends to enlarge the Slovak clearing deficit.

[12] There is still the Slovak debt unsettled (greater than twenty billion of crowns) from the end of 1992 which also sharpens the asymmetry of the clearing system in this direction.

It is possible to eliminate a likelihood of this type of imbalance by restricting a category of clearing transactions to trade transactions only. However, this modification may be more restrictive for Slovakia. Since the volumes of Slovak payments seem to correspond to the volumes of imports, it would reduce Slovak imports when equalizing volumes of payments (Czech exports to Slovakia tend to exceed Slovak exports to the Czech Republic). In other words, it is possible for Slovakia to have a permanent trade deficit with the Czech Republic with all transactions (transfers, transits, investments) incorporated into the system. The reduction of a category of clearing transactions would improve the system only if capital transactions were enlarging the imbalance of clearing transactions[13].

Also, the problem of the Slovak permanent deficit can be eliminated by other modifications of the present system (cancelling the old account) and by an one-sided fall in payments caused by different types of restrictions. Specifically, Slovakia is likely to use commercial policies (import tariff) to improve the Slovak current account balance. The Czech Republic seems to be a potential permanent clearing debtor in the medium run if these restrictions are significant and it would reduce benefits of a clearing mechanism.

In summary, this subsection concludes that a regime of direct payments is not superior to a clearing union in the short run. The volumes of payments have not been falling, the deficit has not been exceeding the ECU limit and the level of foreign reserves of one member of the union has not been stable. Moreover, the system may be affected by future asymmetric performances of both union members in a way increasing costs of a regime of direct payments.

In the medium run, under some circumstances (rapid disintegration, Slovak trade restrictions at a large scale), the above-suggested indicators (falling volumes of payments, the Czech clearing deficit is relatively large with respect to the level of Slovak reserves, the Czech foreign reserves are stable) would signal that a regime of direct payments is superior to a clearing mechanism. Although it is difficult to predict what is the long-run trend, the fact that a current change to a regime of direct payments would probably constrain a level of the Czech-Slovak transactions and

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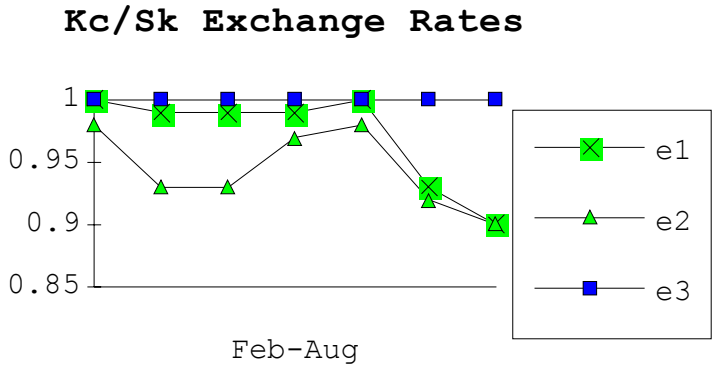
[13] CNB has announced that the Czech crown will be fully convertible in 1995. With one currency fully convertible, it will become necessary to narrow the category of clearing transactions (at least to current transactions) in order to prevent capital flights which would destabilize the system. In that case, clearing payments might be settled in Czech crowns.

increase a riskiness of Slovak payments favour maintaining of a clearing mechanism in the Czech-Slovak exchange-rate system.

3. Toward a Single Rate

The first section concludes that since monetary, fiscal, exchange-rate and commercial policies of both republics will differ in the future, the increasing gaps among the Kc/Sk available exchange-rates will open a room for destabilizing speculations. Consequently, the present system will be more and more burdened with negative consequences of a multiple-rate system. There are two sources that expand the gaps among rates. First, changes in the compound exchange rate E_1 (revaluation/devaluation of the Czech/Slovak crown) make the existence of two clearing accounts costly. Second, the clearing revaluation/devaluation used to protect export competitiveness of either member country or to balance payments expands the gap between the clearing rate E_2 and the exchange rate E_1.
Let us consider the problem of two accounts first. In July, a room for speculations was opened by the devaluation of the Slovak crown (Figure II.1.).

Figure II.1. Kc/Sk Exchange Rates (1993)

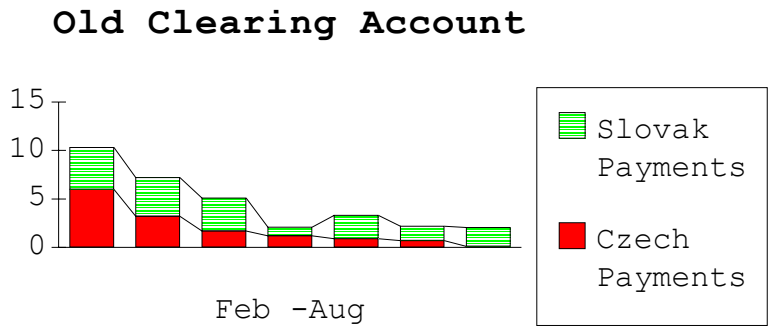


Data Source: CNB.

It is likely that other factors expanding the exchange-rate differences will appear in the system. Specifically, the greater the devaluation of the Slovak crown will be (fall of E_1), the more profitable it will be to use the old clearing account rate to exchange Slovak crowns for Czech crowns since the other available rates will be less generous ($E_1 < E_3$, $E_2 < E_3$). Similarly, a tariff imposed on Slovak imports ($t < 0$) will expand the difference between the old-account rate E_3 and the exchange rate E_1 followed by the clearing account rate E_2. Also, with restricted supply of foreign currencies in Slovakia (foreign currencies are not available at price Sk/ECU), the exchange of the Slovak crowns for convertible currencies through the clearing mechanism will be more profitable.

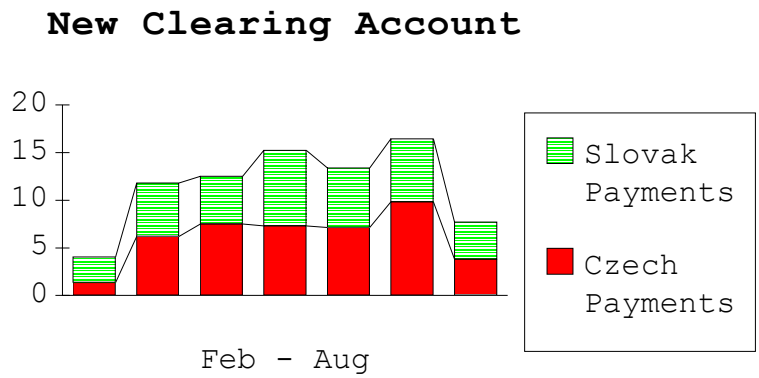
Figure II.2. shows that the amount of Slovak payments is increasing relatively to the amount of Czech payments on the old account. This trend is probably caused by longer lags in payments of Slovak firms as well as by speculations the weigh of which is confirmed by fact that after a devaluation of the Slovak crown, the share of Slovak payments increased rapidly from 68 % in July to 95 % in the first half of August.

Figure II.2. Payments on the Old Clearing Account (bil. Kc)



Data Source: CNB. Data available only until August, 18 for both clearing accounts.

Figure II.3. Payments on the New Clearing Account (bil. Kc)



Data Source: CNB

In comparison with the old account, as figure II.3. suggests, the structure of payments on the new account has not been changed as dramatically using the exchange rate E_2.

Without a well-developed monitoring system, it is possible to avoid the clearing mechanism by moving Slovak payments to more profitable category of the old-account transactions or even to speculate by circulations of payments within the dual-rate clearing system[14].

[14] If a Slovak firm pays 1 million of Sk to settle its debts using the old account, its Czech partner receives 1 million of Kc since the exchange rate is E_3. It is possible for the Slovak firm to require reimbursement (for example when the transaction was settled incorrectly).

If the amount of speculations increases, the clearing system may be destabilized. Firstly, the mechanism avoidance (at a large scale) would create the Slovak deficit on the old account. The net Slovak deficit would be created and would cause a direct loss of the Slovak foreign reserves when settled in ECU. Also, the riskiness of the system would be increased since an indirect loss of the Czech foreign reserves may follow if the system is burdened with an excess shortage of Slovak foreign reserves.

Secondly, circular payments (at a large scale) would increase the Czech deficit on the new account and would create the Slovak deficit on the old account. The net Czech deficit would be increased and would cause a direct loss of the Czech foreign reserves when settled in ECU.

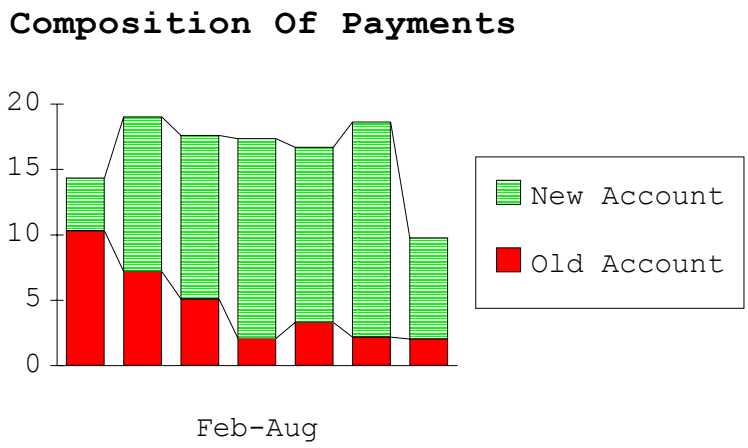
On the one hand, it would be possible to develop a monitoring system to prevent destabilizing speculations. It might be costly with respect to the amount of clearing transactions as well as to the expected temporality of a clearing mechanism (For example, it would be difficult to monitor re-export transactions.). On the other hand, it is possible to prevent costs of speculations by adding the old account to the new account. Moreover, as the evolution of the old clearing account suggests, it would not reduce the benefits of the clearing mechanism significantly.

Forces of stability provided by the old account have been decreasing since the inter-republic debts have been settled gradually since January 1993 and the current transactions are being settled through the new account[15]. Figure II.4. supports this statement showing that a share of clearing payments using the old account in the total volume of clearing payments is falling.

When returning this payment through the new account, the Czech firm pays 1 million of Kc and its Slovak partner receives 1.1 million of Sk since the exchange rate is E_2. Net profit of this transactions is 100,000 Sk.

[15] The inter-republic debts that have not been settled yet are not likely to be settled in the near future. Consequently, their settlements will not exploit advantages of the old account.

Figure II.4. Falling Amount of Payments on the Old Account (bil. of crowns)



Data Source: CNB.

After adding the old account to the new one, a standard bilateral clearing system would be established allowing for both members to make large volumes of inter-republic payments when economizing on foreign reserves. This is an extremely important gain since capital markets are thin in both republics, the foreign reserves of both members are not stable and the Czech-Slovak interdependence is relatively high.

The second problem discussed in this subsection is whether or not the clearing revaluation/devaluation of the Czech crown should be used as an economic tool.

The clearing devaluation of the Czech crown has been suggested as an economic tool protecting a competitiveness of Czech export. However, there are serious reasons for the clearing rate to follow the exchange rate E_1.

On the one hand, it is obvious that a clearing system itself protects both members from a fall in the Czech-Slovak transactions by cushioning them from instability caused by a shortage of foreign reserves. On the other hand, this instability may be increased by using the exchange rate E_2 for clearing transactions. Moreover, the difference between E_1 and E_2 does not necessarily imply a price stability gain.

If the Czech crown is devalued ($\delta > 0$) to cancel the effect of the devaluation of the Slovak crown (or an import tariff), the gap between the exchange rates E_2 and E_1 will be expanded allowing for exchanges of Slovak crowns at a lower rate than the official Sk/ECU exchange rate is[16]. It is important to emphasize the main conclusion of the cost-benefit analysis. The divergence in the monetary, fiscal and exchange-rate policies which is likely to influence the system would not allow for the exchange rate E_1 to converge to E_2. Consequently, with the clearing rate not converging to the long-run equilibrium rate, the significant stability would not be gained.

The divergence of exchange rates would cause the profitability of the exchange of the Slovak crowns for goods and convertible currencies through the clearing mechanism to increase[17]. Analogously to the analysis of the costs of the old account, an increasing amount of speculations would either destabilize the system or evoke the problem of monitoring.

With exchanges through the clearing, the Czech Republic's foreign reserves may be indirectly affected, since these exchanges would increase the amount of payments going from Slovakia to the Czech Republic. Consequently, CNB would credit Slovak purchases and it is more probable that the Slovak deficit would exceed the limit of 130 mil. ECU. It may be difficult to settle this deficit for Slovakia given the foreign reserves situation.

The situation might be worsen by fact that the exchange rate E_2 affects all the clearing transactions making the Czech payments (including transits, transfers and capital account transactions) to Slovakia more expensive. This would create a pressure on the Czech foreign reserves since the Czech physical and legal persons would prefer the regime of direct payments to the clearing regime. As a result, the volumes of the Czech clearing payments might fall increasing the Slovak deficit further. Consequently, with $E_2 > E_1$, Czech export to Slovakia might be restricted by a

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[16] Instead of receiving E_1*ECU/Kc [ECU], it is possible to get $(1 + \delta)$ E_1*ECU/Kc [ECU] when using the clearing mechanism.

[17] Since it is difficult to monitor re-export transactions, Slovak firms pay for goods and services imported from third countries through the clearing system. According to the Czech-Slovak trade balance reported by the Czech Statistical Office and the Slovak Statistical Office, the size of re-exports exceeds six billion of crowns.

shortage of the Slovak foreign reserves more than by a devaluation of the Slovak crown.

As we showed, the amount of the Czech-Slovak trade has been falling for different reasons and, as a result, the sensitivity of the problem of the Czech export competitiveness has increased. However, since only the real revaluation of the Czech crown would decrease the Czech export competitiveness, the Slovak crown devaluation has not necessarily caused an additional fall in the Czech GDP. The expected inflation asymmetry suggests that not only prices of imported goods will raise in Slovakia. On the contrary, the Czech-Slovak interdependence might allow a transmission of inflation to the Czech Republic through imported Slovak goods and services.

The clearing revaluation of the Czech crown has been proposed as the only available tool which would equalize the Czech and Slovak payments in the case of a large permanent Slovak deficit. It would increase the Czech purchases in Slovakia and reduce the Slovak purchases in the Czech Republic. However, there are several consequences of the clearing revaluation which may reduce benefits of the clearing more than the Slovak deficit itself. Again, it supports the idea of using the E_1 exchange rate as the clearing rate.

First, if the clearing deficit is settled by a debtor from other sources (such like trade surplus with other country or official loans), payments need not necessarily to be equalized. Second, the equalization of payments in the case of a large permanent deficit may require the revaluation at a large scale since the payments may not be very sensitive. Consequently, Czech export would be restricted and the main benefit of the clearing union - a non falling trade would be reduced. Third, the clearing revaluation is more likely to slow down the Slovak payments than to reduce them. The payments will be postponed until the clearing deficit diminishes and the Czech crown is devalued on the clearing.

With a large revaluation, the benefit of economizing on the Slovak foreign reserves would be reduced for following reason. The economic agents would switch into the regime of direct payments when importing to Slovakia and they would try to switch into the clearing regime when re-exporting into the Czech Republic through Slovakia. Also, without monitoring, it would be possible to export goods imported

from Slovakia into third countries. Consequently, the Slovak deficit may even be absorbed at the cost of an increase of the Czech money supply.

In summary, by adding the old clearing account to the new one and by using the exchange rate E_1 as a clearing rate, the present system would be improved. It would accomplish the most important objective - to prevent a large fall in the Czech-Slovak transactions and it would protect both members from consequences of a multiple-rate system.

4. Conclusions

Our main conclusion is that a gradually modified clearing mechanism is superior to a regime of direct payments. A current sudden abolishment of a clearing mechanism would restrict the Czech-Slovak transactions and increase riskiness of the system.

The clearing mechanism is beneficial due to the non-decreasing volumes of payments between the Czech and Slovak Republics. Also, the nature of expected asymmetry of the system suggests that the clearing union is less costly than direct payments in the short run since the system is burdened with a shortage of foreign reserves. A clearing mechanism guarantees in some sense that the Slovak purchases will not fall below the level of Czech payments.

Benefits of a clearing mechanism are possible to be reduced in the medium run. Specifically, falling volumes of payments relatively to the level of foreign reserves would favour a regime of direct payments.

The second conclusion is that the present clearing mechanism would be improved by adding the old clearing account to the new one and by using the exchange rate E_1 as a clearing rate. This modification would protect both members of the clearing union from the increasing costs of a multiple-rate system and would result into a standard bilateral clearing mechanism. The analysis also shows that a lower limit or monthly settlement period may be an improvement as well. In this way modified clearing mechanism would accomplish the most important objective - to avoid costs of a large sudden fall in the Czech-Slovak transactions.

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