Exchange Rate and Output in the Aftermath of the Great Depression and During the Transition Period in Central Europe

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Summary

The author compares the influence of the exchange rate on economic activity during two distinct historical episodes: the aftermath of the Great Depression and the second stage of transition in Central Europe (1994–1998). The main hypothesis is that benefits from devaluation may actually be derived from the coordination of international economic policy. This is an important distinction because benefits from devaluation lead to the policy prescription "if all devalue, everybody is better off," while benefits from coordination lead to a much more carefully implemented exchange rate policy. The author finds that large devaluations/depreciations in transition countries always seem to be detrimental to growth, while small fluctuations in the exchange rate seem to support various output scenarios, depending on the initial conditions and/or the speed of market reforms (where the latter depend on the former) and historical circumstances (such as membership in the FSU). Where seeming benefits from devaluation did appear, they may have occurred simply because some small and open economies had successfully coordinated their monetary policies with their main trading and financial partners. Many of the "benefits" from devaluation in the aftermath of the Great Depression can be attributed to the successful coordination between the Scandinavian countries and their main trading partner – Great Britain. From a comparison of two very distinct historical episodes, the author concludes that devaluation is not a good strategy for an individual country and the approach "if all devalue, everyone is better off" cannot automatically be established as a policy prescription. In many cases, the costs of devaluation may exceed the benefits. The results in this paper point beyond the usual economists' credo that no single currency regime is right for all countries at all times. The results indicate that the international propagation mechanisms and the issues of international economic policy coordination are crucial in determining the impact of devaluation.

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Introduction

The magnitude of the output collapse at the onset of the transition period can be compared to that of the Great Depression (Mundell, 1997). Much has been written about the role of the exchange rate during the Great Depression, as well as about the choice of the exchange rate regime during the transition period. However, to the best of my knowledge, there has been no attempt to compare the relationship between exchange rates and outputs during these two historical episodes which are 60 years apart but so similar in terms of output contraction. A number of scholars, notably Eichengreen and Sachs (1985), Eichengreen (1996), and Obstfeld and Taylor (1997) have investigated the demand-side effects of currency devaluation during the Great Depression. They concluded that devaluation had a beneficial effect on output. However, scholars did not take into account that devaluation has been associated with output collapse in many other historical episodes, including the transition period in Central Europe as well as many other episodes of financial crises, especially in Latin America. Perhaps other, mainly supply side factors are at work, which call the allegedly beneficial effects of devaluation into question. This paper represents an attempt to investigate the empirical results concerning the relationship between exchange rates and output in light of a broader set of stylized facts during two distinct historical episodes.

It seems that perceptions of the impact of devaluation on output are firmly rooted in beliefs rather than empirical results. On the one hand, Bordo and Schwartz (1996) claim that the so-called domestic policy goal (output and employment) clashes with the external constraint (stable exchange rate), leading to currency crises. On the other hand, Hausmann et al. (1999) and Eichengreen and Hausmann (1999) claim that a fluctuating exchange rate transmits an exogenous shocks, and thus devaluation leads to recession. There are also some intermediary views but this paper accepts none of them. It represents an attempt to emphasize the role played by international economic policy coordination. The principal assertion made in this paper is that the benefits from devaluation must not be confused with the benefits ensuing from the successful international coordination of economic policies (devaluation brings bene-

fits only if it is a part of the project of international coordination of economic policies). In light of this assertion, the effects of devaluation may in fact be indeterminate. They depend on the size of the country, its role within the world monetary system, historical circumstances and its policy coordination capabilities. Thus, for many countries, except perhaps for the largest countries in the world, devaluation during the Great Depression was beneficial only up to the point that it facilitated policy coordination with the main trading partners and providers of the world currency. No benefit from devaluation seems to be evident during the transition period. On the contrary, devaluation appears to have been detrimental to growth, at least during the period from 1994 to 1998. This can be explained by the fact that transition-type depreciations/devaluations were mainly currency crises or managed depreciations motivated by inward-oriented goals, which brought no benefits for growth.

The first section of the paper is a review of the recent empirical interest in the Great Depression. The second section presents econometric evidence for the post-Depression period in the 1930s. The results for European countries show that the benefits of devaluation were limited to the UK and Scandinavian countries. The results also show that the exchange controls did not affect growth in Europe during the 1930s. This is in sharp contrast with previous results indicating a positive impact of exchange controls on growth (Obstfeld and Taylor, 1997). The third section presents econometric evidence for 17 European transition countries. Weakened currency is shown to have a negative impact on growth. There are also strong indications that developmental inertia is present among European transition countries and it is not at all clear that the growth convergence, an invention of the neoclassical growth theory, works automatically to eliminate differences in levels of development. It is not clear how this problem can be overcome because a stronger commitment to structural reforms depends on initial conditions (in terms of the GDP per capita).[1]

1. Renewed Interest in the Great Depression

In a paper on the role of exchange rates in economic recovery following the Great Depression, Eichengreen and Sachs (1985) estimated a growth equation for a cross-section of ten European countries from 1929 to 1935. They showed that *weaker nominal exchange rates had been associated with higher rates of output growth in the aftermath of the Great Depression*. They also included a dummy variable for Germany in the regressions (Equation 2 in Table 1), and concluded the following:

(a) the exchange rate – the output relation is robustly estimated,

(b) exchange controls had a positive impact on growth, because Germany was the leader of the group of countries (consisting of Germany, Italy, Denmark, Czechoslovakia and Austria) which tried to avoid devaluation by imposing exchange controls in the 1930s.

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1 Despite disappointment with the functioning of international capital markets following the Asian and Russian crises, cautious opening to international capital flows could be the fastest way to overcome institutional inertia (historical determinism). An elaboration of this position is beyond the scope of this paper because it is closely related to EU expansion policies as well as to issues of the expansion of the Euro zone.

Similar results are found in Obstfeld and Taylor (1997). Their approach differed from the approach taken by Eichengreen and Sachs (1985) in two respects. First, their sample was much larger, including the Americas as well as Australia and New Zealand. Second, the explanatory variables were binary.

Table 1. Summary of the Regression Results from Two Studies (Dependent Variable: Industrial Production, 1929–1935, t-values in parenthesis)

	Constant	Exchange rate[a]	Dummy for Germany	Binary "Fixed"	Binary "Controls"	R^2
Eichengreen and Sachs, 1985. Equation 1	153.9 (10.1)	−0.69 (−3.5)				0.56
Eichengreen and Sachs, 1985. Equation 2	2.04 (7.4)	−0.97 (−3.0)	0.58 (4.1)			0.62
Obstfeld and Taylor, 1997	0.028 (0.5)			−0.261 (3.3)	0.213 (2.7)	0.41

Notes: The second equation in Eichengreen and Sachs (1985) differs from the first not only because of the dummy for Germany but also because the U.S. is included in the sample (which does not alter the results significantly). Output measurement (industrial production) refers to the cumulative change during the 1929–1935 period in both studies but has been defined differently. Eichengreen and Sachs used the base index (1929 = 100) for 1935, while Obstfeld and Taylor used the rate of change from 1929 until 1935. The exchange rate is defined as an index number in Eichengreen and Sachs (a higher value means appreciation), while Obstfeld and Taylor use the rate of the change of the nominal exchange rate between 1929 and 1932. The reason they used the shorter time period for exchange rate change (until 1932) than for output change (until 1935) is that they assumed inertia in the output reaction. T-values have been computed by the author of this paper on the basis of the standard errors provided in these studies.
[a] Higher nominal value means appreciation.

Although there are arguments in favor of the assertion that the reduced form equations in Table 1 are not spurious regressions (Eichengreen and Sachs, 1985, p. 938), it remains unclear whether important explanatory variables have been omitted and whether the interpretations are correct. Namely, Eichengreen and Sachs (1985) concluded that currency devaluations were beneficial from the viewpoints of individual countries. They claim that had this type of policy been adopted internationally and in a coordinated manner, coordinated devaluations could have transformed the Great Depression's non-cooperative or bad equilibria into a good cooperative solution. The aspect of international coordination in devaluation policy has also been emphasized by Eichengreen (1996).

However, the strategy of empirical testing shown above neglects the role of the international financial system in the propagation of the crises. It seems that a significant parameter with the exchange rate confirms the standard demand-side explanations of the positive impact of the nominal exchange rate on real output, as if allowing the exchange rate to depreciate leads to real growth. The most frequently cited explanations of this type are as follows:

1. Weaker currency eliminates the necessity of cutting government spending or raising taxes (Eichengreen, 1996).

2. Weaker currency removes the restraints that prevent the stabilization of the banking system via the function of the lender of last resort (Eichengreen, 1996).[2]

3. Weaker currency lowers the relative price of the national output and expands the money supply, boosting effective demand and employment while retaining a relatively open capital market (Obstfeld and Taylor, 1997).

4. Weaker currency makes the switching of aggregate expenditure from foreign to domestic goods possible (Eichengreen and Sachs, 1985).

There are three crucial assumptions behind this approach. First, there are no negative supply shocks associated with devaluation. (Or, if there are, they must be much weaker than presumably positive demand shocks.) Second, the effects of the international coordination of economic policies are well captured (measured) by the exchange rate on the explanatory side. Thus, the whole issue of international economic policy coordination is boiled down to the exchange rate policy. Eichengreen and Sachs (1995) conclude that if all countries devalue, everyone is better off. Third, prices are rigid.

The aforementioned assumptions are well founded in our professional heritage. We were taught that the Great Depression was, first and foremost, a contractionary demand shock. Influential work by Friedman and Schwartz (1963) pointed to monetary factors of contraction along lines of thinking which emphasized a clash between the internal (employment) and external (stable exchange rate) goals of monetary policy. The simplicity of this idea led economists to forget how little we know about the actual (domestic and international) propagation mechanisms of such deep crises. Much of the policy makers tend to disregard works such as that by Ben Bernanke (1983), who demonstrated that the banking crises played at least as important a role as monetary policy in U.S. output contraction. Most importantly, when various transmissions of the impulses of crises are allowed, the econometric results shown in Table 1 can be interpreted in various ways.

For example, if there is a region (a set of countries in the sample) where currency depreciation works predominantly as a negative supply shock (so that countries, whose policy makers know this, tend to resist the weakening of their currencies), data from these countries will not undermine a result which shows a positive correlation between devaluation and output growth. However, the argument that these countries should have devalued would simply be wrong because had these countries done so, the output collapse might have been greater than without devaluation. If these countries had done so, the regression results would look quite different. Perhaps countries such as Germany, Hungary and to a lesser extent France did not devalue only due to ficti-

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2   The strain between the external credibility of a currency peg and the internal credibility which depends on the role of the lender of last resort has been emphasized by della Paolera and Taylor (1997, 1998) in their work on Argentina. This, however, remains a controversial issue. Della Paolera and Taylor (1998) found no evidence of the money supply affecting output recovery; they found only the "Mundell effect," which operates via the elimination of deflationary expectations and lower real interest rates. This is a weak conclusion given the fact that a view based upon the clash between external and domestic goals implies that money has a strong impact on the real economy. In addition, Argentina did perform better than most Latin American countries and the U.S. in the Great Depression but there are European countries that operated equally well. Argentina regained its 1929 output level in 1935, as did Denmark, Germany, Greece, Hungary, Finland, Norway, Sweden and Great Britain. It is difficult to find a common denominator for all these countries.

tious fears of hyperinflation. There may have been the real fear of the negative supply shock that comes with the high inflation associated with disorder in relative prices. Perhaps policy makers were aware that the institutional structure and the expectations formation mechanisms could not sustain even small devaluation without the great risk of initiating a full-blown financial crisis.[3] In short, the "clash" between the domestic and external goals of monetary policy is not the entire problem. In some countries where the demand-side effects of currency devaluation are weak, such a problem may not even exist.

2. Regression Results: Devaluation and/or Coordination?

The econometric results in Table 2 indirectly support the idea of country groups with different characteristics regarding the impact of exchange rate changes on output. The sample includes 14 European countries during the Great Depression and its aftermath. Non-European countries are excluded from the sample because there may be some hidden historical or institutional factors making intercontinental variations in the rate of the fluctuation of the exchange rate endogenous for the period under investigation. Since the same type of econometrics is applied to today's transition countries (with recent data from the transition period) in the next section, the sample used here is historically and institutionally similar to the sample in the next section. The sample here includes the following European countries: Germany, Hungary, Italy, Czechoslovakia, Austria, Denmark, France, the Netherlands, Belgium, Poland, Great Britain, Sweden, Norway and Finland.[4]

The cumulative rate of the change in industrial production from 1929 to 1935 (Mitchell, 1976) is a dependent variable, which is the same as in earlier studies. The first explanatory candidate is the rate of the change of gold parity from 1929 to 1932 (EX32), obtained from Obstfeld and Taylor (1997, p. 23). The same authors published the rates of devaluation from 1929 to 1935 but they used the rates up to 1932 in their regressions. After some experimenting, those rates of change proved to be better measures in this study as well. Results with the rates of depreciation from 1929 and 1935 are not reported here. Obstfeld and Taylor (1997) explained the superiority of the exchange rate changes up to 1932 by the time lag required for an exchange rate shock to work its way throughout the economic system.

The second explanatory variable is the binary variable EXCON, which equals one for the countries that tried exchange controls (otherwise zero). The countries that used exchange controls are as follows: Germany, Hungary, Italy, Czechoslovakia, Austria and Denmark (Obstfeld and Taylor, 1997, p. 23).

The third explanatory candidate is the size of the country measured by the logarithm of the 1929 population in millions (POP) (Mitchell, 1976). Population is a proxy

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3   Eichengreen (1996) recognized the fear of hyperinflation as a candidate for explanation but he did not develop the idea further. It remains a task for economic historians to look for additional explanatory candidates.

4   "History is particular; economics is general" (Kindleberger, 1996: p. 11). In this sense, this is a work in economic history, not in economics. This is the only possible defense against the objection that the sample is not sufficiently heterogeneous. Indeed, we are interested in Europe only.

for openness (Romer, 1993)[5]. The proxy for openness was introduced into the regression because it can be an important factor in determining how sensitive the country is to the supply-side working out of exogenous exchange rate shocks. The hypothesis is that the exchange rate change might have had a stronger impact in regressions where the size of the country is properly accounted for.

The fourth explanatory candidate is the logarithm of the air distance of a country's capital from London (DIST). This variable captures the effects of the interconnected financial system with its economic core and periphery. Finally, there is the binary variable SCAN, which equals one for the Scandinavian countries and Great Britain and zero for other countries. The rationale for this variable is explained below.

Table 2. Summary of Regressions for 14 European Countries (Dependent Variable: Growth of Industrial Production, 1929–1935; t-values in parenthesis)

EX32	POP	DIST	EXCON	SCAN	R^2
0.775 (3.2)	−4.792 (−2.1)		1.834 (0.2)		0.53
−0.659 (−1.1)	−5.702 (−3.0)		9.334 (1.2)	45.693 (2.6)	0.71
1.053 (3.5)		−4.419 (−2.1)	3.414 (0.4)		0.53
−0.210 (−0.3)		−4.808 (−2.7)	9.294 (1.1)	40.781 (2.2)	0.69

The following findings are important:

First, exchange controls (EXCON) did not contribute to growth. This result stands in contrast to previous studies but is not difficult to explain. The positive parameter with the German dummy in Eichengreen and Sachs (1985) could have emerged due to some other important country-specific factor for Germany. On the other hand, the sample was much larger in Obstfeld and Taylor (1997) (it included non-European countries), so the positive parameter there could have been due to the impact of the Latin American members of the sample. The depression of the 1930s was not so severe in Latin America, while exchange controls was pervasive. This does not mean that exchange controls were a cause of Latin America's resistance to great output contraction but could explain some of the results.

Second, openness (POP) and distance from London (DIST) proved to be important determinants of growth. Both variables reflect the functioning of the international financial system. The greater the distance from the international financial center (London in this case), the lower the output growth in the recovery phase. This is a fairly normal result in a world with spatial and cultural frictions. Interestingly, openness works in the opposite direction: the smaller countries recovered faster. However, distance and size are collinear, and the estimated coefficients are similar. Therefore, Table 2 shows two equations with size, i.e. population (proxy for openness), and two with distance. It was impossible to state that only one of the two candidates is the true ex-

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5   Openness is usually measured by the ratio of some measure of international trade to GDP.

planation. However, since openness has an unexpected sign, it is wiser to assume that the distance from London played an explanatory role.[6]

Third, the conclusion about the beneficial effect of devaluation occurs only because of the data for Great Britain and the Scandinavian countries. Devaluation seems to be systematically related to stronger recovery only when the binary variable SCAN (equals one for Great Britain and the Scandinavian countries) was not included in the regressions. After the inclusion of this variable, the parameter with the exchange rate changed its sign (from positive to negative) and became statistically insignificant. The exchange rate policy became insignificant for growth. The result appeared robust because it emerged in regressions with the population as well as with distance on the explanatory side.

In conclusion, it may be premature to state, at least for European countries, that devaluation was the key policy for growth in the aftermath of the Great Depression. The Scandinavian countries were very dependent on Britain in international trade in those days (Jorberg and Krantz, 1976), so the whole benefit from devaluation came from their coordination with the core of the system they belonged to, not from devaluation itself. The crucial issue is how to interpret the result: was it devaluation or coordination that was good for growth? The two are not mutually exclusive. On the contrary, the exchange rate policy is a crucial part of any international coordination program. However, this does not mean that other countries could do better with devaluation. For example, Austria had huge output contraction despite significant devaluation, while neighboring Hungary recorded mild recovery despite the fact that it stayed with the gold standard. Simply, there is not enough evidence to state that devaluation was the right policy for all. Growth differences in the aftermath of the Great Depression have been explained here by other, mainly institutional variables, such as the following: distance from the international financial center and/or country size, successful coordination with the main trading partner. Institutional factors that reflect the functioning of international goods and capital markets, which might be among the main propagation mechanisms of the financial crises, played a dominant role in the determination of output.

3. Transition in the 1990s: Is the Message "Do Not Devalue"?

The regression results presented in Table 3 are based on the same approach as the results in Table 2 and apply to European transition countries during the 1990s. There are 17 transition countries included in this part of the study, not including the Eurasian and Asian transition countries. The countries included are as follows: Albania, Belarus, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania,

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6   The word "unexpected" here means unexpected from the point of view of the demand-side devaluation theory. One would expect easier demand-side, i.e. monetary, management in larger countries but the results do not show this here. By the same token, distance is assumed to be a more plausible explanation because it appears with the correct sign in the regression. The greater the distance from the international financial center, the lower the output growth. This finding is compatible with the capital markets integration theory, which views crises and their aftermaths as great disruptions and reconstruction in the functioning of the global financial markets (Taylor 1996a, 1996b).

Macedonia, Moldova, Poland, Romania, Russia, Slovakia, Slovenia and the Ukraine. The dependent variable is the real output (GDP) growth from 1994 to 1998.[7] The rate of the nominal exchange rate depreciation versus the SDR from 1994 to 1996 (E96) is the first explanatory candidate. Openness (size measured by the log of the population in millions – POP) is the second explanatory candidate, and the log of the distance (DIST – this time from Frankfurt) is the third. The fourth explanatory candidate, common in the growth literature, is initial conditions (INITIAL), measured here as the log of the GDP per capita index (Austria = 100) in 1993. Since research on growth in transition (e.g. Fisher, Sahay and Vegh, 1996; de Mello, Denzier and Gelb, 1997a; Havyrlyshyn and van Rooden, 1999) has emphasized the role of market reforms, and since the indices which measure the depth and quality of reforms usually perform well in the regressions, the EBRD reform index (EBRD) was the fifth explanatory candidate. Finally, binary variables linking countries with common characteristics were also added to the list of explanatory candidates (ADVANCE – equals one for the six developed transition countries in Central Europe).

The transition countries of Eurasia are excluded because they are on the average much less developed than the countries of this group. In addition, they have completely different histories and do not fit well within the historical flavor of this paper, which is focused on Europe, for the purpose of comparing post-Depression recoveries during two distinct historical episodes on a more or less common ground. Moreover, the sample from this section and the sample from Section 2 have four common elements: the Czech Republic, Slovakia, Hungary and Poland, which make the comparison more relevant than it may appear at first glance. Furthermore, exchange rate fluctuations are measured for a period that was three years shorter than for output growth, due to the assumption, as in Section 2, that it takes some time for exchange rate shocks to work their way throughout an economic system. Distance is measured from Frankfurt because German banks were the main investors in the transition economies and the major German international banks have their headquarters in Frankfurt.

The first result in Table 3 (Equation 1) indicates that the exchange rate had no impact on growth during the transition period. This conclusion emerged from the direct observation of the parameter with the exchange rate fluctuations. A specification with quadratic exchange rate changes was attempted but it performed equally badly and is not shown here. None of the other explanatory variables (population and distance) had additional explanatory power at a 5% significance level.

However, the conclusion about the (non)role of the exchange rate may be somewhat misleading. Four countries weakened their currencies by more than 50% in two years (from 1994 to 1996): Bulgaria, Romania, Russia and the Ukraine. The binary variable which equals one for these countries is labeled PP and has a very strong and negative impact on growth in all the equations where it was tried (Equations 2 to 5). Its estimate is robust: it does not change much when other explanatory candidates are included or excluded from analysis. This is consistent with the working hypothesis

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7   The year of 1994 can be taken as a year dividing two transition periods, in both qualitative and quantitative terms, in most of the advanced transition countries (cf. Šonje and Vujčić, 1999).

that there are countries where exchange rate fluctuations function mainly as a negative supply rather than a positive demand shock,[8] especially when the nominal changes are excessive. Also, in Equation 2, the binary variable for the advanced transition countries (Poland, the Czech Republic, Slovakia, Slovenia, Hungary and Croatia – ADVANCE) proved to be strongly positive and significant, pointing to other common factors at work in this group of countries. Which factors were at work in this part of Europe?

Table 3. Summary of the Results for Transition Countries (Dependent Variable: Average GDP Growth, 1994–1998, t-values in parenthesis)

Eq. no.	E96	LPOP	LDIST	PP	EBRD	FSU	INITIAL	ADVANCE	R^2
1	−0.006 (−0.8)	−1.289 (−1.3)	0.999 (1.6)						0.13
2	0.006 (0.8)			−5.365 (−2.2)				3.976 (3.3)	0.52
3	−0.000 (0.0)			−5.789 (−2.2)	5.685 (0.8)	−4.347 (−2.5)	0.061 (−0.0)		0.62
4	0.000 (0.0)			−5.774 (−2.3)	5.939 (4.0)	−4.339 (−2.6)			0.61
5	0.001 (0.2)			−5.879 (−2.3)		−4.370 (−2.5)	1.359 (3.3)		0.54

Equations 3–5 represent attempts to assess these factors. First, membership in the FSU appears to be a systematic factor that affected growth negatively (between 4.3 and 4.4 percentage points lower growth on the average). Second, the EBRD reform index and initial conditions (GDP per capita at PPP in 1993) enter the equation. These two candidates are collinear, as clearly shown in Equation 3 in comparison to Equations 4 and 5. This suggests that the two explanatory candidates have similar impacts, describing essentially the same thing, because the countries with better initial conditions had better market reform achievements.

The role of the initial conditions is very different from the role they play in the usual empirics of growth (Barro, 1997), which in most cases confirms the convergence hypothesis. Here, however, the convergence hypothesis is not confirmed but initial conditions apparently describe a strong inertia in economic development. The authors who recognized this (De Melo et al., 1997b, Havyrlyshyn and van Rooden, 1999) did not therefore become pessimistic: *"Initial conditions do matter but their impact appears to be less important and their negative effect can be relatively easily overcome by stepping up progress in structural reforms"* (Havrylyshyn and van Rooden, 1999, p. 18). However, the results are not conducive to such optimism because progress in structural reforms, a vague concept in itself, depends on the initial conditions. Despite the fact that these considerations may not appear to be linked with exchange rate considerations, I believe it is correct to emphasize inertial factors in a paper essentially

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8   See Šonje and Škreb (1997) for an assessment of the role of the exchange rate as a negative supply shock.

dealing with exchange rate policy. This indirectly indicates that inertia in development cannot be overcome by an exchange rate policy.

Finally, Bulgaria and Romania are the only countries in the sample that recorded more than 100% exchange rate depreciation from 1994 to 1996. Was their impact on the results strong enough to undermine the relevance of the results? The results in Table 4 point to the conclusion that their impact was strong but nevertheless, after their impact was removed, the evidence began to speak even more strongly in support of the aforementioned conclusion regarding the exchange rate policy. Only the results for Equations 4 and 5 are replicated here because they are the most relevant, demonstrating the negative impact of the exchange rate policy on growth.

Table 4. Summarized Results for the Transition Countries without Bulgaria and Romania (Dependent Variable: Average GDP Growth, 1994–1998, t-values in parenthesis)

Eq. no.	E96[a]	EBRD	FSU	INITIAL	R^2
4′	−0.083 (−2.1)	6.406 (3.8)	−4.158 (−2.2)		0.58
5′	−0.096 (−2.5)		−4.121 (−2.2)	1.544 (3.9)	0.60

[a] Higher value means depreciation.

Again, two equations are estimated because the initial conditions and reform index are collinear and their effects are indistinguishable when both variables are included in the regression. When they are separated, their parameters do not differ significantly from the estimates in Table 3. A small difference occurs only with the variable describing membership in the FSU. However, the most important change occurred with the role of the exchange rate. Depreciation is shown to have a significantly, albeit not very strong, negative impact on growth.

It is clear that this impact is due to Russia and the Ukraine, which are still present in the sample. High rates of devaluation lead to lower growth, even when the initial conditions and/or progress in market reforms as well as historical circumstances (membership in FSU) are properly accounted for. In addition, some low rates of change in the exchange rate have an indeterminate impact on output.

There are two possible explanations. First, the exchange rate variable might pick up the impact of inflation, which is strongly negative in all regressions when there is no exchange rate on the right side (Havyrlyshyn and van Rooden, 1999). The second explanation is based on the claim that this explanation is period-specific. Namely, 1994–1998 was a period of strong capital inflows to transition countries, so that the exchange rates of swiftly growing countries were under constant pressure to appreciate. On the other hand, countries without capital inflows were growing slowly (or not growing at all) and their currencies were under the opposite pressures.

4. Conclusion

It is not at all clear that devaluation was good for growth, even during the disintegration of the international capital markets in the 1930s (Taylor, 1996a, 1996b). During the historical heights of the integration of capital markets in the 1990s, it seems clear that the impact of devaluation on growth remains undetermined.

While large devaluations/depreciations always seem to be harmful to growth, small fluctuations of the exchange rate seem to support various output scenarios, depending on the initial conditions and/or the speed of market reforms (where the latter depend on the former) and historical circumstances (such as membership in the FSU). In general, institutional factors that reflect the functioning of the international capital markets, which may be among the main propagation mechanisms of financial crises, played the dominant role in the determination of output.

Where seeming benefits from devaluation appear, they may occur simply because some small and open economies have coordinated their monetary policies successfully with their main trading partners. Therefore, one should always carefully distinguish between the benefits from devaluation and the benefits from coordination (despite their close connections), because diagnosing the source of benefits may lead to conflicting conclusions. Where the first source is identified, the principle "if all devalue, everyone is better off" applies. Where the second source is identified, it calls for a careful examination of the impact of devaluation. Many of the "benefits" of devaluation in the aftermath of the Great Depression can be attributed to successful coordination between the Scandinavian countries and their main trading partner – Great Britain. There is no indication of benefits from devaluation in transition. Only harmful effects appeared in the regressions. This suggests that literature which emphasizes the beneficial, mainly demand-side impact of devaluation on growth tends to disregard the costs of devaluation which arise from the supply-side or the institutional factors that influence growth.

There are three limitations to this conclusion. The first is of a technical nature, regarding the econometric method and the samples chosen. Naturally, one would like to see panel data econometrics with a richer set of explanatory candidates. This points to future work as well as to the limits of this work. Its value is more in economic history than in economics (see footnote 4).

The second limitation is related to the fact that the considerations may chiefly apply to small and open economies. However, if this is the case, it is not a serious limitation because almost all countries can be considered to be small and open economies. I believe that this is not such an important factor because much of the output contraction may be country specific, as shown in this paper, arising from the country-specific severity of the banking crises. This avenue of research, opened by Bernanke (1983), seems particularly fruitful for future research.

Thirdly, general conclusions arising from panel or cross-section studies such as this one cannot be used to form prescriptions for individual countries. The results in this paper can be used to criticize other general findings such as those from earlier literature. They cannot be used to support the conclusion that depreciation should be prevented in every transition country. Individual countries have their own institu-

tions and circumstances. Therefore, in some cases it is not desirable for policy makers to decide a priori that the exchange rate should not be changed.[9] However, the results in this paper point beyond the commonly accepted credo "no single currency regime is right for all countries or at all times" (Frankel, 1999). They point to international propagation mechanisms and issues of international economic policy coordination as the crucial issues determining the impact of devaluation.

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9   There is voluminous literature on this issue. For a recent view of this type, see Frankel (1999).

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