Lessons from the Collapse of the Ruble Zone

Anders Åslund*

When the Soviet Union collapsed in December 1991, one single economic institution survived, namely the common currency, the ruble.[1] The most radical Russian reformers wanted to break it up, but they were defeated by a multitude of opposing interest groups. As a result, fifteen independent central banks started issuing ever larger ruble credits, which resulted in general hyperinflation in 1992 and 1993, with annual inflation rates varying from 1,000–10,000 percent.[2] In the fall of 1993, most countries left the ruble zone that ceased to exist when Russian departed. The countries that exited the ruble the earliest, namely the Baltic states, performed the best, while the laggards suffered the most.

Many conditions at the end of ruble zone were peculiar, but its collapse also displayed general features of a currency area. This extreme event can help us to discern the mechanisms at work during the collapse of a currency zone, especially when comparing with other similar events. Some of these developments are relevant for the Eurozone.

The first section of this article offers a brief presentation of how the ruble zone collapsed. The second section analyzes how the collapse of the ruble zone compares with other currency zone failures. The third section draws overall lessons and specifically highlights points that matter for the Economic and Monetary Union (EMU). Finally, what would happen if a debtor country were to leave the Eurozone in distress?

What happened when the ruble zone collapsed?

In December 1991, the Soviet Union broke up into twelve independent countries. The three Baltic countries, Estonia, Latvia, and Lithuania, had already departed in August 1991. The formal division of the Soviet Union occurred on 25 December 1991. It was clear-cut and rapid. Each new country kept all union assets on its territory. The existing borders were recognized and maintained. Russia accepted responsibility for the Soviet Union's substantial foreign debt, and assumed ownership of the far smaller foreign assets. Only two union institutions persisted, various Soviet military assets and the common currency, the ruble.

The Soviet economy had been out of control since the fourth quarter of 1990, as the Soviet economic system was falling apart. The economy suffered from all perceivable ailments. Shortages of all goods and services were pervasive, because of low state-regulated prices, while the government had lost control of both public expenditure and wages. Inflation was triple-digit, in spite of largely regulated prices and rationing was wide. The Soviet budget deficit in 1991 was probably 34 percent of GDP, but the Soviet national accounts were not completed that year. The international currency reserves were literally depleted, and the USSR had lost access to international financial markets because of excessive public debt and large arrears. The Soviet economic system was collapsing, and GDP was falling by about 10 percent in 1991 (Åslund 1995 and 2002). The situation was further complicated by the eleven newly-independent countries lacked central state institutions, notably central banks and ministries of finance. The main problem, however, was probably a nearly complete dearth of economic knowledge everywhere apart from in Moscow and St. Petersburg.

The curse of the ruble zone was that each of the 15 new republics had its own central bank that could issue ruble credits. They had started doing so at the end of 1990, when the increasingly sovereign Soviet republics established their central banks, but they were caught in a prisoner's dilemma. They would all be better off, if all of them restricted their issue of money, but since they knew that the other central banks would emit vast credits, none had a reason to hold back.

* The Atlantic Council, Wahington DC.

[1] I discussed this topic four years ago in Åslund (2012).

[2] Hyperinflation is defined as inflation exceeding 50 percent a month for one month and the economy subsequently remaining in hyperinflation for one year.

An observer could have expected responsible politicians to stand up and call for an end to this hyperinflationary ruble zone, but its supporters overwhelmed its opponents. The only people who really wanted to stop the ruble zone were the Russian reformers around First Deputy Prime Minister Yegor Gaidar and the Baltic leaders. In the fall of 1991, Gaidar (1993) had advocated a Russian 'nationalisation of the ruble'. The Western advisors of the Russian government concurred, favouring a quick breakup of the ruble zone (Lipton and Sachs 1993). This was also true of the leading Western macroeconomists on this topic (Sargent 1986) and Dornbusch (1992).

The post-Soviet republican leaders were painfully aware of their ignorance of monetary policy. The countries most friendly to Russia – Belarus, Kazakhstan, Armenia, and Tajikistan – hoped for the survival of the ruble zone and were prepared to submit to the Russian central bank. The less friendly countries – Ukraine, Moldova, Georgia, Azerbaijan, Turkmenistan, and Uzbekistan – wanted to establish their own currencies, but after some time. In the meantime, they wanted to benefit from cheap credit and raw materials from Russia. The Balts took exception. They wanted to establish their own national currencies and leave the ruble zone as fast as possible, even if it would cost them greatly. Their saying went: "a national currency is our best border fence to Russia" (Hansson 1993). Throughout the region, the old establishment favoured maintaining the ruble zone. The big state enterprises wanted to sell without competition and be paid by the state through central bank credits.

Disappointingly, the international agencies involved also preferred to keep the ruble zone. At this time, the European Union (EU) was preparing for EMU, elaborating on the Maastricht Treaty. Therefore, it supported a joint currency zone. European interests dominated the IMF, which sought a middle road of jointly agreed monetary policy without central control, but that option was never viable. Monetary discipline could only be ascertained if there was only one central bank solely responsible for issuing the ruble. (Sachs and Lipton 1993; Åslund 2002)

The newly minted central bankers realised that the more credits they issued, the larger a share of the common GDP they would extract. But presumably it was more convincing that friendly private bankers and commodity traders were delighted to give them a commission on the money that the central bankers lent them.

All of the former Soviet republics ended up on a treadmill of rapid monetary expansion boosting inflation. As prices surged, the velocity of money rose, so that inflation increased more than monetary emission. Inflation in the post-Soviet economies ranged from 640–3,000 percent in 1992, while in those economies remaining in the ruble zone it ranged from 840–11,000 percent in 1993. As hyperinflation caught on, GDP fell by 3–45 percent in 1992 alone. The Baltic countries departed from the ruble zone in the summer of 1992, enabling them to restrain their credit issue. Even so, they faced inflation of around 1,000 percent in 1992, although that figure was much lower in 1993 (Åslund 2002).

Not well-versed in monetary economics, post-Soviet officials insisted that credits were not money, holding back the printing of currency to impede inflation. The printing presses were located only in Russia, which started printing Russian rubles soon after independence. The other republics had to make do with their old Soviet ruble notes. Given that their printing had ended and prices skyrocket, cash was desperately short in supply. Several republics and regions started printing their own coupons as a substitute currency. While this was a great popular irritant, it was a side issue that did not have any great impact on monetary policy.

In the fall of 1992, the only one of the twelve countries remaining in the ruble zone to hold back somewhat was the Central Bank of Russia (CBR). Russia had current account surpluses with all of the other former Soviet republics, meaning that Russia provided financing to all of the other republics, which merely repaid this with ruble credits issued by their central banks. The IMF (1994) statistics for Russian financing of the other former Soviet republics in 1992 are quite extraordinary. Russia financed 91 percent of Tajikistan's GDP, 70 percent of Uzbekistan's GDP and about 50 percent of the GDP of Turkmenistan, Georgia, and Armenia. Belarus and Moldova received 'only' 10 percent of their GDP. This cost Russia 11.7 percent of its GDP of only 80 billion US dollars at the exchange rate of 1992. Impoverished Russia could not possibly continue this financing.

The Soviet Union had a highly centralised payments system, in which all payments went through the Central Bank, which examined every single payment. A handful of state banks had managed all payments. The number of payments was limited because the

number of state enterprises was not large, but as the number of enterprises multiplied, payment delays surged. Nor did enterprises have any incentive to pay. Since they did not pay one another, they were all short of money. The arrears crisis was exacerbated by a breakdown of settlement clearing between enterprises in different post-Soviet republics, where settlements could take months (Sachs and Lipton 1993; Rostowski 1994). The old state enterprises were confident that they would be able to extract money for their supplies from the government or central bank, so they did not really care about being paid. They continued delivering for a few years even without payment, or their goods were not even desired by their purported clients.

The arrears were formed for a purpose, namely to extract money from the government, and the easiest way of doing so was to ask the central bank for monetary emission. A common argument was to call for 'an indexation of the working capital'. The essence was that chains of inter-enterprise arrears were to be resolved through monetary expansion. Most post-Soviet countries carried out such emissions, which instantly boosted inflation, while the non-payments were quickly recreated since they had turned out to be such a successful tactic (Rostowski 1994).

The ultimate blow to the ruble zone was the irresponsible monetary policy of the CBR. In the first half of 1992, its governor Georgy Matiukhin favoured a 'moderate' monetary expansion of 10 percent a month, which turned both reformers and their opponents against him. For the next two years, Soviet stalwart Viktor Gerashchenko was governor, and his policy aim was to expand monetary emission to keep the money supply constant as a ratio to GDP, which was impossible given increasing velocity. In effect, the central bank financed the arrears, which encouraged enterprises to accumulate more arrears (Åslund 1995; Granville 1995).

Yet, the CBR could not afford to continue financing the other eleven post-Soviet countries. From July 1992, the Russian government tried to restrict credits to those states, although CBR governor Gerashchenko resisted and even accelerated the expansion of credits. In April 1993, the Russian parliament decided to stop any technical credits to other former Soviet republics and allowed only intergovernmental credits from the Russian state budget, but this measure did not suffice to end the ruble zone. Finally, Gerashchenko ended the ruble zone by suddenly and independently declaring all Soviet banknotes null and void at the end of July 1993. Panic broke out throughout the former Soviet Union as people queued up outside banks to use their old Soviet ruble banknotes. By the end of 1993, all former Soviet republics apart from war-ridden Tajikistan had established their own currencies. Thanks to the competitive emission and monetary chaos in 1993, seven of the twelve former Soviet republics had even higher inflation rates in 1993 than in 1992. Inflation abated gradually in 1994/5 (Åslund 1995 and 2002). It was good that the ruble zone ended, but this was the worst way of ending it: too late and chaotic.

The combination of hyperinflation and non-payments arising from the collapsing ruble zone devastated the economy. Statistics from the years 1991-1994 are highly unreliable and probably exaggerate the decline, but officially, the average total GDP fall in the twelve former Soviet republics was 53 percent, while the Baltic states that managed to exit the ruble zone one year earlier experienced a fall of 44 percent (UNECE 2000). Trade among the former Soviet republics plummeted by 70 percent from 1991 to 1994 (Michalopoulos and Tarr 1997). This was a major economic disaster. Compared to the poorly performing post-communist countries Bulgaria and Romania outside of the ruble zone, that factor alone might have cost these countries 20–25 percent of additional output fall. The superior economic performance of the Baltic states illustrates that it was better to get out early. Indeed, an instant end to the ruble zone on 1 January, 1992, would have saved the world a lot of suffering.

How the collapse of the ruble zone compares with other currency zone failures

Contrary to current perceptions in the EU, currency zones have been quite common. Indeed, it is the post-Bretton Woods system of many more or less freely-floating national currencies that is an anomaly. Traditionally, monetary systems were based on gold or silver. By and large, in order to escape unnecessary currency volatility small economies prefer to link their currency to a big economy, which can be done through a peg, a currency board, or a currency union.

During the golden half century of high economic growth before World War I, two monetary unions, the Latin Monetary Union and the Scandinavian Mone-

tary Union dominated Europe. The Latin Monetary Union lasted from 1865 to 1927. Initially, it included France, Belgium, Italy and Switzerland, and it expanded to Spain, Greece, Romania, Bulgaria, Serbia and Venezuela. The Scandinavian Monetary Union existed from 1873 to 1914. Its members were Sweden, Denmark and Norway. It survived without problems when Norway broke away from Sweden in 1905. Both monetary unions fell apart because one member devalued (Sweden and Greece, respectively).

Yet, we must not confuse these currency unions with the EMU. Their monetary cooperation was quite limited because the common currency was based on an external norm, the gold standard. Each country had its independent central bank and they did not have a common payment system, which are the key features of a real currency union.

Currency unions are particularly popular among small countries. At present, three large currency unions exist among small countries in the developing world. One is the East Caribbean Currency Union, which was set up in 1983. It includes nine small Caribbean states. Its currency, the East Caribbean dollar, is pegged to the US dollar and it has a common East Caribbean Central Bank, which is a monetary authority, not meant to pursue any monetary policy, but rather to act as a currency board.[3]

The two other examples are African: the West African Economic and Monetary Union, which consists of eight West African countries, and the Central African Economic and Monetary Community with six member states. Almost all of these countries have been French colonies and they have used their African franc since 1945. Each has a common central bank, Central Bank of the West African States[4] and Bank of Central African States,[5] which control the two currencies that maintain parity. Their *franc* was originally pegged to the French franc, and is now tied to the euro. This currency has been devalued twice, in 1948 and 1994. While the membership has changed little, it has varied, and the original common currency area split into two. These two African franc zones are effectively pursuing a currency board regime attached to the euro, and the French Treasury maintains supervision. Thus, currency unions are common, but all of the currency unions discussed above hinge on an external standard: the gold standard, the US dollar, or the euro.

The situation is very different in an integrated multinational currency union based on fiat money. The three outstanding examples of such currency unions that have broken up are the Austro-Hungarian Empire in 1918, Yugoslavia in 1990, and the Soviet Union in 1991–93.

At the end of World War I, the Austro-Hungarian Empire was collapsing, without clear leadership or strategy. The last vestiges of the central government were already financing themselves with monetary emission towards the end of the war. The Austrian government continued to do so after the November 1918 armistice. During the brief communist rule starting at the end of October 1918, the Hungarian government did so to an even greater degree. These bodies quickly developed the competitive issue of the same fiat currency. One single successor state had a clear concept, namely Czechoslovakia. Over two weeks in February-March 1919, its government closed the borders and stamped all the Austro-Hungarian *krone* banknotes circulating within its borders. The new Czechoslovak central bank pursued a very conservative monetary policy form the outset and its new koruna was convertible. All the other successor states, by contrast, had no clear policy, leading to very high inflation. Austria, Hungary, and Poland all suffered from hyperinflation (Pasvolsky 1928; Sargent 1986; Dornbusch 1992).

After the death of President Josip Broz Tito in 1980, Yugoslavia started to disintegrate in a process that took several years and its economic system was unstable. The two wealthy northern republics, Slovenia and Croatia, had large current account surpluses with Serbia. In the first half of 1991, the National Bank of Yugoslavia, controlled by the Serbian government, started issuing excessive amounts of money to the benefit of Serbia. This dealt a decisive blow to both Yugoslavia and its *dinar*. In late June 1991, Slovenia declared independence, not least to defend its finances. The Yugoslav army attacked Slovenia, but the war lasted only ten days, and Slovenia was able to exit Yugoslavia both politically and monetarily, becoming the most successful successor state (Pleskovic and Sachs 1994). Croatia followed suit, but ended up in a much more bloody war with Serbia. Hyperinflation

[3] East Caribbean Central Bank, see http://www.eccb-centralbank.org/.
[4] Central Bank of the West African States, see http://www.bceao.int/.
[5] Bank of Central African States, see http://www.investopedia.com/terms/b/bank-of-central-african-states.asp.

persisted in the remaining states of Yugoslavia, Bosnia and Herzegovina, and Serbia.

The collapse of the ruble zone, the breakup of the Austro-Hungarian Empire, and of Yugoslavia resulted in 28 instances of hyperinflation (Austria-Hungary 3, Yugoslavia 4, and USSR 21) out of a total of 56 recorded in world history since the French revolution (Hanke and Krus 2012). This showed that the breakup of a tightly integrated multinational currency zone is a very dangerous event.

Lessons for the Economic and Monetary Union (EMU)

The collapse of the Austro-Hungarian Empire, Yugoslavia, and the former Soviet Union may appear to be extreme events of little relevance to the current, more ordinary economic situation, but on closer consideration, this is hardly the case. Each of these collapses came as a great surprise to most of the people involved, and they all became far more radical in their essence than anybody had anticipated. These three currency zones had substantial similarities with the EMU. They were real currency zones with a common central bank and payments system without any external anchor. They were also truly multinational. They offer lessons of relevance for the EMU.

A real currency zone is not only an exchange rate arrangement, but a joint central bank and payment system. If either fails, the economies in question will face a major monetary and economic calamity. The payments system is likely to stop functioning, which will bring about a liquidity freeze, as the world saw with the Lehman Brothers bankruptcy on 15 September 2008. Great uncertainty will arise because nobody has an overview of all the effects, or can assess the new value of assets, and that emotion will arouse general panic.

A currency zone fails if it does not have a central bank that is the sole issuer of money. Whenever competitive issue of money arises, a currency zone is doomed. Politically, centralised control of monetary emission must be acceptable. Otherwise a currency union is bound to fail. At present, the ECB has those powers, but given all demands for loose monetary policy, the ECB might lose its monopoly of monetary emission.

In the three cases of currency zone failure, the main central banks abandoned their duties and pursued irresponsible inflationary policies. Then more responsible countries will depart and establish their own currencies. Since they are acting in self-defence, it would be wrong to blame the countries to depart first for the demise of a monetary union. Therefore, the greatest danger to the EMU would be if it opted for soft monetary policy. Thus, the central bank of the monetary union must pursue a conservative monetary policy.

The debate over the possible collapse of the EMU in 2012 divided the discussants in two big camps. One camp claimed that this was only a change in exchange rate.[6] Another group of predominantly European economists argued that the breakup of the euro would be a major disaster.[7]

Apart from its monetary policy, the essence of the EMU is its payments system called Target2, through which cross-border central bank money is transferred between the national central banks within the currency union (Weidmann 2012). Until the euro crisis, the Target2 balances were more or less offset or settled through the private interbank market. From 2011, the private interbank funding dried up, so that large positive Target2 balances arose in the four northern EMU countries with strong finances, and large negative balances in eight southern countries. Hans-Werner Sinn (2011a) raised this issue in 2011, arguing that the Eurozone payments system has been operating as a hidden bailout whereby the Bundesbank has been lending money to the crisis-stricken Eurozone members *via* the Target system. He concluded that these claims would probably be lost should the euro collapse (Sinn 2011b).

Sinn's crucial insight was that a collapse of the EMU when Target2 balances were large would be a major disaster. He noticed that these balances would probably be lost by the creditor countries at great cost to those nations. Like the Austro-Hungarian Empire, Yugoslavia and the ruble zone, the EMU lacks rules and procedures for exit. Debts would be disputed and cause major conflicts. Russia has claimed its large ruble zone credits arising accidentally to the other former Soviet republics in 1992/93, which has led to onerous debt negotiations and repeated debt restructurings. Nor is there any reason to believe that any exit from the EMU would be easily accepted by all parties

[6] For example, Roubini (2011); Das and Roubini (2012); Stiglitz (2016).
[7] Eichengreen (2007); Åslund (2012); Bindseil, Cour-Thimann and König (2012). Blejer and Levy-Yeyati (2010); Buiter (2011); Cliffe *et al.* (2010); Dabrowski (2012); Normand and Sandilya (2011).

concerned, as long as there are large debts outstanding. If Target2 balances were to be cleared, an exit would be much easier.

Target2 is reminiscent of the post-Soviet Russian *Kartoteka II*, which was an internal payments system that registered all payments in the order of their entry. In 1992, large arrears accumulated in *Kartoteka II*. One reason was practical that this manual system could not manage the vastly expanded payments volume. The more important reason, however, was that enterprises no longer wanted to pay if they could avoid doing so. Thus, they delayed their payments and used their arrears as another argument for more monetary emission, which eventually succeeded and resulted in high inflation (Rostowski 1994). This is a threat to the EMU, which it avoided during the crisis thanks to strong resistance among monetary conservatives.

The pattern of the early departures is clear: the countries that tend to leave a monetary union first are small, wealthy, and well-managed countries on the periphery. In the case of the Austria-Hungary union, the first to depart was Czechoslovakia, in Yugoslavia's case it was Slovenia, and in the USSR it was Estonia, followed by Latvia and Lithuania. In hindsight, it is abundantly clear that these countries greatly benefited from leaving the common currency zone early. It helped them to pursue far better economic policies than the rest. The logic for the EMU is obvious, but poorly understood. The country most likely to leave the EMU is not Greece or any other beneficiary of significant EU financial assistance, but Finland, a rich country on the northern periphery that is paying for, rather than benefiting from EU largesse.

If the EMU were to be dissolved under stress, the first country to depart would probably fare the best. And the earlier and faster that country were to leave, the better off it would be. The conclusion is that all member countries of the EMU should leave at the same time, if dissolution can no longer be avoided.

In the dissolution of the three major real currency areas, the issues of exchange rates and competitiveness are not all that important, since major financial issues so obviously took precedence. The key issue was price stability, and the second most important issue was financial costs. The Scandinavian and Latin Monetary Unions fell apart because of devaluation in one country or another. The insight is that conservative monetary policies and strict fiscal rules are crucial to the survival of a monetary union.

Fundamentally, there are two main reasons why currency unions tend to collapse: ignorance and irresponsibility. The critical misconception in the three failing monetary unions was that fiscal discipline did not matter; and that loose monetary policy could be beneficial, even at a time of high inflation. Given the current state of Anglo-American economic discussion, Nobel Prize laureates Joseph Stiglitz (2016) and Paul Krugman (2015) would happily repeat the mistakes of Viktor Gerashchenko. Krugman has most spectacularly advocated and predicted the dissolution of the Eurozone. As Niall Ferguson has noted, Krugman wrote about the imminent break-up of the euro at least eleven times between April 2010 and July 2012. Well, that did not happen, which might suggest that his analysis was less than stringent.

What would happen if a debtor country were to leave the EMU in distress?

The euro crisis has abated, and the Target2 balances have moderated. From 2010 to 2012, Greece's possible departure from the Eurozone was much discussed, but it did not happen. While that risk currently seems to have passed, it is useful to consider the chain of events that such an act may have entailed.

If the ECB had capped the Target2 balances of one country in crisis (Greece), this would have triggered a bank run both in Greece and in other countries with large Target2 deficits. The centralised EMU payments system would subsequently have ceased to function. Facing the combination of a multi-country bank run and a petrified EMU payments system, all people and businesses would have transferred their money abroad, which would have required the introduction of currency controls, as in Cyprus in 2013. With the payments system, the European interbank market would have ground to a standstill, which would have presumably led to a global liquidity freeze worse than the freeze seen after the Lehman Brothers bankruptcy in September 2008. If the drachma were to have been reintroduced in the midst of such a crisis, its exchange rate would have plummeted. Excessive depreciation would have caused high inflation, possible in triple digit figures. As companies would have suffered from the liquidity freeze, they would have sharply reduced their output, which would have plunged. Countries

with a large public debt and plunging currencies would presumably have defaulted (Åslund 2012).

Fortunately, no country departed in euro distress, and this must not happen in the future. If any country were to leave the EMU, it should do so after the period of acute stress has passed. The best way of avoiding a breakup of the EMU is to maintain strict monetary and fiscal policies, because if any country is to depart in such a scenario, it is unlikely to be an indebted country with a large current account deficit, and more likely to be a wealthy nation that feels it could manage better without the currency zone.

References

Åslund, A. (1995), *How Russia Became a Market Economy,* Washington DC: Brookings.

Åslund, A. (2002), *Building Capitalism: The Transformation of the Former Soviet Bloc,* Cambridge and New York: Cambridge University Press.

Åslund, A. (2012), "Why a Breakup of the Euro Area Must Be Avoided: Lessons from Previous Breakups", Peterson Institute for International Economics, Washington DC, *Policy Brief*, 12–20 July.

Åslund, A. (2013), *How Capitalism Was Built: The Transformation of Central and Eastern Europe, Russia, the Caucasus, and Central Asia,* 2nd ed., Cambridge and New York: Cambridge University Press.

Bindseil, U., P. Cour-Thimann and P. König (2012), "Target2 and Cross-Border Interbank Payments during the Financial Crisis", *CESifo Forum*, Special Issue, 83–92.

Blejer, M. and E. Levy-Yeyati (2010), "Leaving the Euro: What's in the Box?", VoxEU, 21 July, voxeu.org.

Buiter, W. (2011), "The Terrible Consequences of a Eurozone Collapse", Financial Times, 8 December.

Cliffe, M. *et al.* (2010), *EMU Break-up: Quantifying the Unthinkable,* ING Global Economics, 7 July.

Dabrowski, M. (2012), *The Need for Contingency Planning: Potential Scenarios of Eurozone Disintegration,* E-Brief 11/2012 (June), Center for Social and Economic Research (CASE), Warsaw.

Das, A. and N. Roubini (2012), "A Blueprint for an Amicable Divorce Settlement", *Financial Times*, 3 April.

Dornbusch, R. (1992), "Monetary Problems of Post Communism: Lessons from the End of the Austro-Hungarian Empire", *Weltwirtschaftliches Archiv* 128, 391–424.

Eichengreen, B. (2007), "Eurozone Breakup Would Trigger the Mother of All Financial Crises", VoxEU, 17 November, voxeu.org.

Ferguson, N. (2013), "Krugtron the Invincible, Part 1", *Huffington Post,* 8 October.

Gaidar, Y. (1993), "Inflationary Pressures and Economic Reform in the Soviet Union", in: Admiraal, P.H. (ed.), *Economic Transition in Eastern Europe,* Oxford: Blackwell, 63–90.

Granville, B. (1995), "So Farewell Then Rouble Zone", in: Åslund, A. (ed.), *Russian Economic Reform at Risk,* New York: St. Martin's Press.

Hanke, S.H. and N. Krus (2012), *World Hyperinflations,* Cato Working Paper 8.

Hansson, A.H. (1993), "The Trouble with the Rouble: Monetary Reform in the Former Soviet Union", in Åslund, A. and R. Layard (eds.), *Changing the Economic System in Russia,* New York: St. Martin's Press, 163–182.

IMF (International Monetary Fund, 1994), *Economic Review: Financial Relations among Countries of the Former Soviet Union.* Washington DC.

Krugman, P. (2015), "Thinking about the New Greek Crisis", *New York Times blog,* 28 January.

Michalopoulos, C. and D.G. Tarr (1997), "The Economics of Customs Union in the Commonwealth of Independent States", *Post-Soviet Geography and Economics* 38, 25–43.

Normand, J. and A. Sandilya (2011), *Answers to 10 Common Questions on EMU Breakup*, JP Morgan, 7 December.

Pasvolsky, L. (1928), *Economic Nationalism of the Danubian States,* London: George Allen & Unwin.

Pleskovic, B. and J.D. Sachs (1994), "Political Independence and Economic Reform in Slovenia", in: Blanchard, O., K. Froot and J.D. Sachs (eds.), *The Transition in Eastern Europe,* Vol. 1, Cambridge, MA: National Bureau of Economic Research.

Rostowski, J. (1994), *Interenterprise Arrears in Post-Communist Economies,* IMF Working Paper 94/43 (April).

Roubini, N. (2011), "The Eurozone Is Heading for Break-up", *Financial Times,* 14 June.

Sachs, J.D. and D.A. Lipton (1993), "Remaining Steps to a Market-based Monetary System", in: Åslund, A. and R. Layard (eds.), *Changing the Economic System in Russia,* New York: St. Martin's Press.

Sargent, T.J. (1986), "The Ends of Four Big Inflations", in: Sargent, T.J. (ed.), *Rational Expectations and Inflation,* New York: Harper and Row.

Sinn, H.-W. (2011a), "The ECB's Stealth Bailout", VoxEU, 1 June, voxeu.org.

Sinn, H.-W. (2011b), "Two Models for Europe", *Project Syndicate,* 29 December.

Stiglitz, J.E. (2016), *The Euro: How a Common Currency Threatens the Future of Europe,* New York: Norton.

United Nations Economic Commission for Europe (2000), *Economic Survey of Europe* 2/3, New York: United Nations.

Weidmann, J. (2012), "Was steckt hinter den Target2-Salden?", *Frankfurter Allgemeine Zeitung,* 12 March.