

A FREE-FLOATING CURRENCY REGIME DURING ECONOMIC CRISIS: ADVANTAGE OR DISADVANTAGE?

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Abstract

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The paper deals with the identification of potential disadvantages associated with the existence of national currencies with the floating exchange rate regime during the current financial and economic crisis in countries postponing their entry into the eurozone. The hypothesis is that the advantages of a floating exchange rate may be outweighed by their disadvantages (high volatility of exchange rates). First part of the paper provides evidence about the development of Czech crown exchange rate since transition from fix to free float regime. Special attention will be given to the period during the recent global economic crisis. For the sake of comparison, evolution of other currencies in the region (zloty, forint and Slovak crown), will be taken to consideration. Second part of the paper form case studies identifying impact due to volatility on national currencies. Case studies were used to identify possible negative impacts from volatility in national currencies on export firms in the Czech Republic and holders of mortgage loans denominated in foreign currencies in Hungary. The last part of the paper will formulate recommendations for businesses entering into foreign trade relationships, as well as for policy makers in countries using national currencies which are preparing for membership in the eurozone.

exchange rate volatility, economic crisis, export firm, mortgage, eurozone

Since the second half of 2008, the global economy has been dealing with the impacts of the financial and economic crisis. One consequence has been pronounced volatility in the exchange rate for the Czech crown and the currencies of other Central and Eastern European countries (see Fig. 1). The introduction of the euro in Slovakia starting January 1, 2009 offers a unique opportunity to compare the advantages and disadvantages of a floating currency vis-à-vis those of membership in the monetary union. In view of the brief length of time since the euro was introduced in Slovakia, short-term advantages and disadvantages of the floating currency vs. membership in the monetary union will be emphasized.

The goal of this paper is to identify potential disadvantages connected to the existence of national currencies in a floating exchange rate system during

a time of financial and economic crisis. The hypothesis is stated as follows: the advantages of a floating exchange rate (automatic stabilizer of balance of payments) may be outweighed by their disadvantages (high volatility of exchange rates).

According Lacina (2007), the great advantage of a floating currency is an independent monetary policy, allowing the central bank to stimulate demand, thereby “smoothing” the economic cycle and reducing the impact of economic shocks on the domestic product and unemployment. Exchange-rate theory makes clear that during periods of economic crisis, the ability to devalue the currency should be an advantage which contributes to strengthening the competitiveness of the country. Devaluation is, of course, tied to a risk of growth in inflation over the mid- and long-term. The question also remains as to whether the Marshall – Lerner condition is fulfilled

under a global recession in which even currency devaluation need not lead to pronounced growth in exports because of declining demand in the countries serving as chief trade partners. Another significant risk tied to currency depreciation in a system of freely floating currencies is the risk of overshooting the equilibrium level. This may occur as the result of panic on the currency markets or improper evaluation of information concerning developments in target markets by investors. There may also be a problem of informational asymmetry in which all countries of a region are regarded as problematic irrespective of their actual economic situation.¹

METHODS AND DATA

The paper is divided as follows: First part of the paper provides evidence about the development of Czech crown exchange rate since transition from fix to free float regime. Special attention will be given to the period during the recent global economic crisis. For the sake of comparison, evolution of other currencies in the region (zloty, forint and Slovak crown), will be taken to consideration. Second part of the paper form case studies identifying negative impact due to volatility on national currencies for export/import firms, as well as for loans held by citizens in foreign currencies. The last part of the paper will formulate recommendations for businesses entering into foreign trade relationships, as well as for

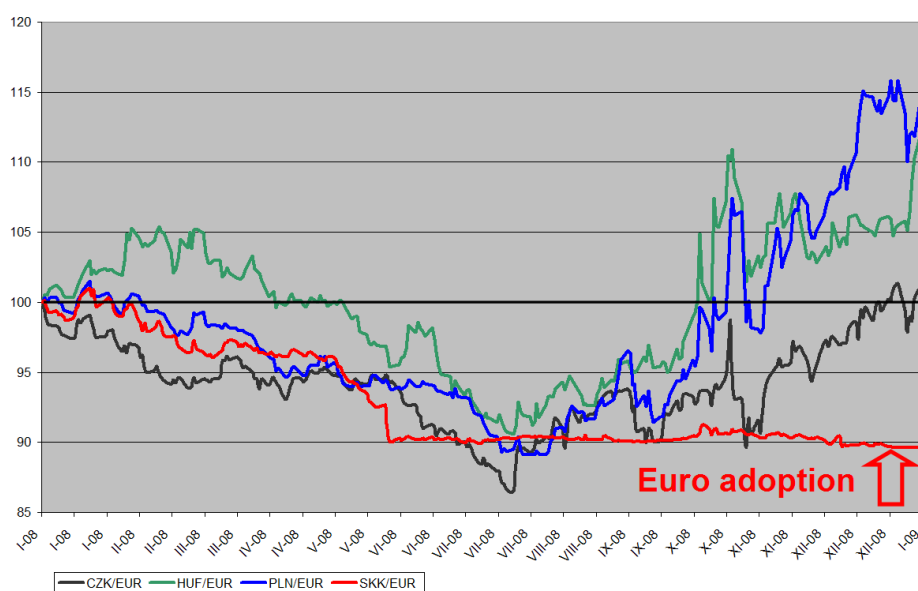
creators of economic policy in countries using national currencies which are preparing for membership in the eurozone. In this paper are used daily data of nominal exchange rates development from XI/2007 to XI/2010, source <http://www.patria.cz/> and www.cnb.cz, system ARAD.

The analysis will also include the conversion rate for the Slovak crown vs. the euro starting in May 2008. From the time the exchange rate between the crown and the euro was set, it suffered only minimal fluctuations, thus protecting the Slovak economy from the exchange rate volatility which affected other currencies of the Eastern European region during the second half of 2008. The Slovak Republic was thus protected against exchange rate volatility even before the actual replacement of the Slovak crown by the single-currency euro.

Evolution of exchange rates

The Slovak crown entered the ERM II currency exchange mechanism in November 2005. Growth in productivity and the potential of the Slovak economy translated to a strengthening of the equilibrium exchange rate, causing the Slovak republic to request a change in central parity. Central parity was revalued for the first time on March 19, 2007 and for the second time on May 29, 2008 from 35.4424 SKK/EUR to 30.1260 SKK/EUR.

On July 8, 2008, the Economic and Financial Affairs Council (ECOFIN) recommended Slovakia be



1: Exchange-rate development for selected Central European countries vis-à-vis the euro during 2008 (01/2008 = 100)

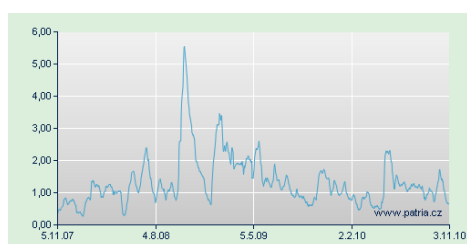
Source: www.patria.cz

1 An example would be the pressure put on currencies in the countries of Central and Eastern Europe in autumn of 2008 and the first half of 2009. The Czech Republic was "thrown into the same bag" by investors with problem countries such as Hungary and the Baltic republics, even though its macro- and microeconomic indicators showed markedly better values. Currency depreciation ceased only after pronounced verbal intervention by the CNB (see, for example, CNB (2008): Vyjádření ČNB k zavádějícím informacím uveřejněným v člancích *Financial Times* a *The Economist*).

admitted to the eurozone. The rate of conversion was designated at 30.1260 Slovak crowns per euro, identical to the most recent parity level. The pegging of the Slovak crown to the euro and the anticipated introduction of the euro on 1/1/2009 markedly aided the Slovak crown to ride out its final months of existence in relatively smooth waters. While other currencies from Central European countries were markedly weakened by the impact of the economic and financial crisis, the Slovak crown held out until the end of 2008 at a level only moderately higher than the conversion rate. As the end of the year approached, its value gradually approximated that rate.



2: FX development of HUF/EUR
Source: www.patria.cz



3: 30 days volatility HUF/EUR
Source: www.patria.cz

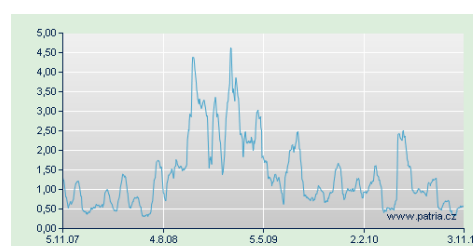
In contrast to Slovakia, many of the other candidate countries for membership in Eurozone in CE region (Czech Republic, Hungary and Poland) began to undergo turbulent development accompanied by pronounced growth in exchange-rate volatility (see graphs 2–8).

In mid-2008, the previous trend toward appreciation was broken by a sharp weakening of forint. Over a nine-month period from June 2008 until March 2009, the Hungarian forint fell from 230 HUF/EUR to 310 HUF/EUR, a drop of 34%. This was followed by a correction which saw the forint strengthen to 270 HUF/EUR by mid-2009. The forint continued to oscillate around this value until mid-2010.

The Polish zloty underwent a similar development as HUF. During the same period, from June 2008 until March 2009, it fell sharply in value from 3.2 PLN/EUR to 4.6 PLN/EUR, a drop of 43%. This was followed by a period of gradual appreciation to the current rate of 4 PLN/EUR.



4: FX development of PLN/EUR
Source: www.patria.cz



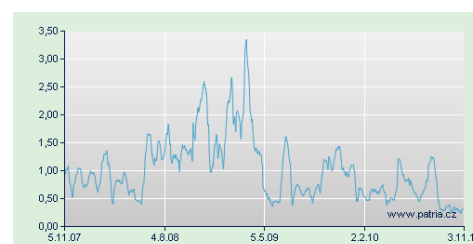
5: 30 days volatility PLN/EUR
Source: www.patria.cz

However the forint and zloty remain depreciated in comparison to their rate at the start of 2008 (see Fig. 8).

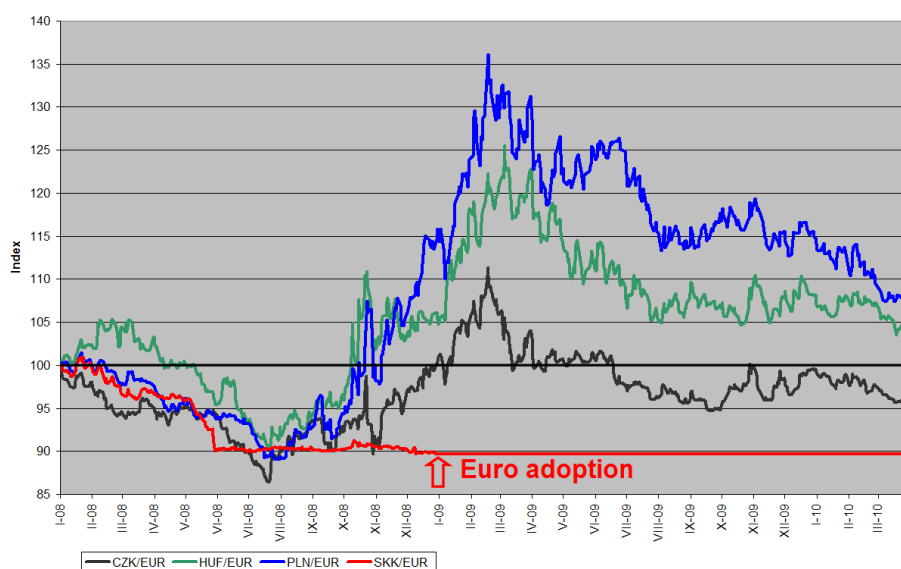
The development of the Czech crown was similar in some respects to that of the zloty and forint. At the beginning of 2008, the rate was 26 CZK/EUR. By mid-2008, the crown had strengthened to 23 CZK/EUR. This was followed by a reversal in the trend leading to a sharp weakening, with the crown reaching a value of 29 CZK/EUR in February of 2009. After this extreme deviation from the previous trend, the crown returned to a long-term appreciation



6: FX development of CZK/EUR
Source: www.patria.cz



7: 30 days volatility CZK/EUR
Source: www.patria.cz



8: FX development for selected Central European countries vis-à-vis the euro during 2008–2010 (01/2008 = 100)

trend and gradually strengthened from 27 CZK/EUR to 24.5 CZK/EUR by midyear 2010.

Compared to the zloty and the forint, the crown gained greater strength and had matched its early 2008 value by the end of 2009 (see Fig. 8). Given the export-oriented nature of the Czech economy,

such a long-term strengthening in the crown has caused significant problems for Czech businesses and threatens to reduce their international competitiveness (cf. the development of the real effective exchange rate² in Fig. 9).

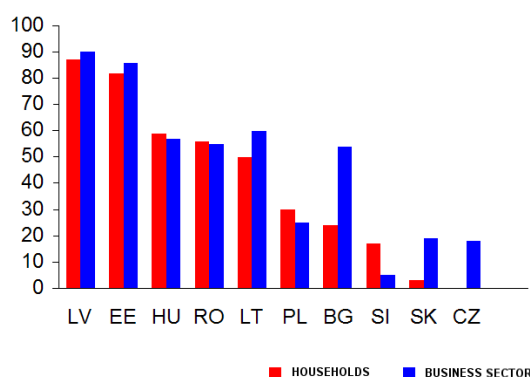


9: Real effective exchange rate CZK (2005 = 100) monthly

Source: <http://www.cnb.cz/>, system ARAD

² The real effective exchange rate (REER) is indicator of the international competitiveness of a country and is generally understood to mean various levels of relative prices or costs expressed in a certain currency. In this respect, REER values above 100 signify a downward trend in the country's competitiveness relative to the base period, whereas an REER below 100 means rising competitiveness of the country relative to the base period.

Of all the candidate countries for entry into the eurozone, the Czech Republic had the lowest exposure to loans in foreign currencies at the outset of the financial and economic crisis³ (See Fig. 10) as well as a relatively healthy banking sector.⁴ In contrast to Hungary with 60% exposure and Poland with 30% exposure, the Czech Republic has zero exposure for household loans denominated in foreign currencies and very low exposure as regards business loans.



10: Loans denominated in foreign currencies (as a percent of all loans in the segment, 2008)

Note: LV – Latvia, EE – Estonia, HU – Hungary, RO – Romania, LI – Lithuania, PL – Poland, BG – Bulgaria, SI – Slovenia, SK – Slovakia, CZ – Czech Republic

Source: CNB (2009)

The fundamental problem of the Czech economy at the start of the financial and economic crisis was instead overly rapid appreciation of the Czech currency vis-à-vis the euro and the dollar with subsequent depreciation over the last third of 2008. The Hungarian forint and the Polish zloty underwent development similar to that of the Czech crown during the course of 2008 (see Fig. 1)

Of all the Central European countries, Hungary has so far been hit hardest by the crisis. The reason is its long-term high level of public budget deficit and the government's high foreign indebtedness. Because of high interest rates in the domestic currency, many households took out mortgage and consumer loans in foreign currencies. After the sudden devaluation of the forint,

Poland had the advantage because GDP growth during recent years has been fueled more by domestic consumption than exports, which moderated the impact on the overall situation. Another important factor differentiating the Polish economy from those of its neighbors was that it is not as dependent

upon individual sectors of the economy, particularly the automobile sector, which is currently one of the most threatened.

Selected exchange-rate volatility problems after the outbreak of the financial and economic crisis

In the remainder of this paper, we shall use two case studies to attempt to identify possible disadvantages connected to the existence of national currencies in a floating exchange rate system during a time of financial and economic crisis. For comparison purposes, two countries in the region were selected – the Czech Republic and Hungary. The negative impact of exchange rate volatility on two different groups – export companies in the CR and holders of mortgage loans denominated in foreign currencies in Hungary – will also be explored.

Case Study No. 1: Is weakening of the currency always beneficial to exporters?

The current weakening of the crown need not lead to growth in export receipts. As Frolik (2009), a member of the Board of Directors of the Confederation of Industry, notes: *Export firms ordinarily secure 75% of their estimated income during the first year and 40% of income during the second year; thus the current weak crown will provide significant benefits only after a period of two years. Fixed exchange rates, on the other hand, have a negative influence... it is highly probable that with the current sharp drop in industrial production, many companies are "over-protected". As a result, free funds are sucked out of companies who must purchase the more expensive euro, because the business is acting responsibly and investing in security.*

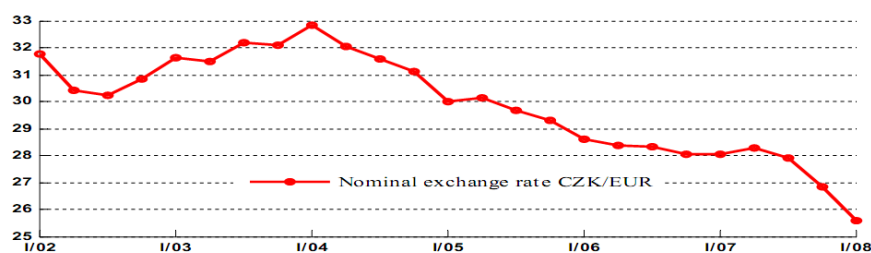
An example of this would be as follows: On April 1, 2008, an exporter decides to secure its anticipated receipts for the year at an estimated value of €1 million. The current exchange rate is CZK 25.2/EUR. In deciding the amount of security, note is made of the most recent April forecast, in which the figures for the subsequent quarter were shown at CZK 25.4/EUR and the actual estimated exchange rate according to the CNB for next year was CZK 25.2/EUR.

The risk-averse exporter thus decides on security using a yearly forward contract at the rate of CZK 25/1 euro. It thus offers to sell the bank €1 million at the rate of CZK 25/EUR on 1/4/2009, thus obtaining CZK 25 million. Its cost of sales is CZK 23 million, locking in a profit of CZK 2 million.

Because of the crisis, however, the exporter is only able to sell €600,000 worth of goods and we presume only 60% of the cost of sales was spent, i.e., CZK 13.8 million.

³ A country's exposure is a function of all loans denominated in currencies other than the home currency, ordinarily expressed as the relative share of GDP for the economy in question.

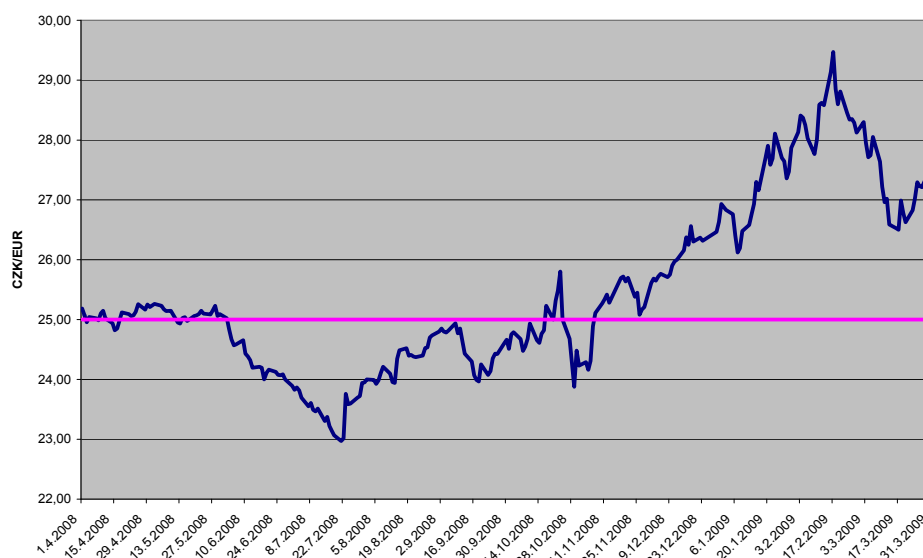
⁴ Société Générale (2nd quarter 2009) – owner KB, net profit €309 million (52% drop) – Komerční Banka (1st half of 2009) net profit 5,762 million crowns (10.1% drop); Erste Bank (1st half of 2009) – owner CS, €492.1 million (22.7% drop) – Ceska Sporitelna (1st half of 2009) net profit 6.3 billion crowns (4.4% drop) (Škopek, P., 2009).



External forecasts of CZK/EUR			
Date of forecast	Next quarter	1Y horizon	
	CF	CNB's survey	CF
4/07	28.0	27.2	27.7
7/07	28.5	27.4	27.9
10/07	27.6	26.9	27.6
1/08	26.2	25.8	26.2
4/08	25.4	25.2	25.5

11: Estimated development in the CZK/EUR exchange-rate from April 2008

Source: CNB, Inflation Report II/2008



12: Development of the CZK/EUR exchange rate from April 2008 until April 2009

Source: www.cnb.cz

On settlement day (April 1, 2009), the crown is of course at 27.15 against the euro, weaker than the prediction. The business must purchase €400,000 at the disadvantageous spot rate of 27.15 CZK/EUR to fulfill the forward contract and sell it to the bank at 25 CZK/EUR. There are thus additional costs of CZK 860,000 ($2.15 \times € 400,000$), so the resulting profit is now 340,000 as opposed to the anticipated CZK 2 million.

Exporter profit calculation

receipts due: 600 000 EUR \times 25 CZK/EUR =
= + CZK 15 mil

cost of sales: – CZK 13.8 million

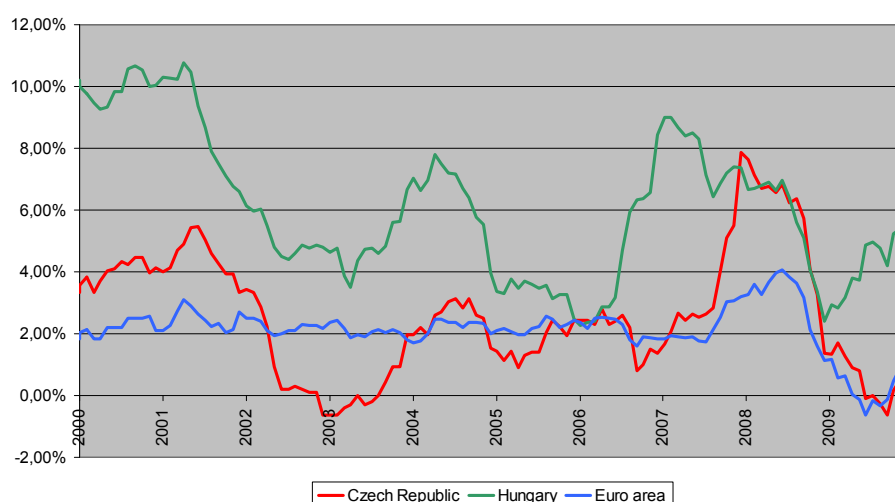
forward contract loss: $2.15 \times € 0.4 \text{ million} =$
= – CZK 0.86 million

total profit: 15 mil. – 13.8 mil. – 0.86 mil. = CZK 0.34 mil

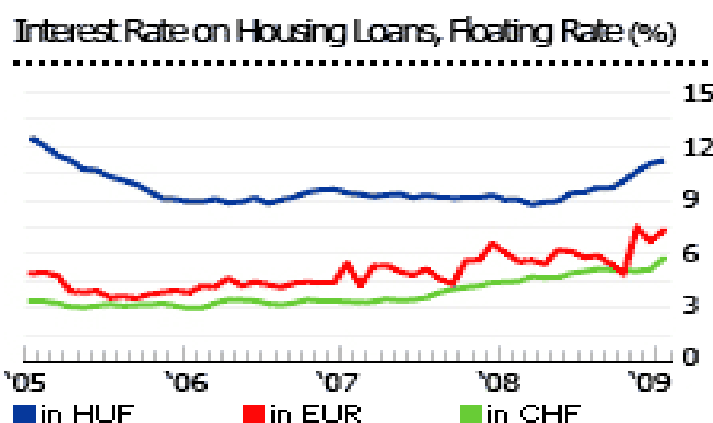
If the exchange rate were to worsen to CZK 28/EUR, the security purchase would result in a total loss.

Case Study No. 2: Why might it be advantageous to take out a loan in a currency other than the national currency? And what might the results be?

In answer to the question posed by the title, we may use the example of residents of Hungary deciding to finance a real estate purchase using a mort-



13: Year-on-year percent change in inflation in the CR, Hungary and the Eurozone
Source: OECD databases



14: Comparison of mortgage interest rates made in Hungarian forints, euros and Swiss francs
Source: Magyar Nemzeti Bank

gage. Throughout the transformation process, Hungary found itself unable to reduce inflation to figures approaching the inflation average for the eurozone (see Fig. 13).

For this reason the nominal exchange rate for loans made in Hungarian forints always remained higher than comparable rates in euros or in Swiss francs.

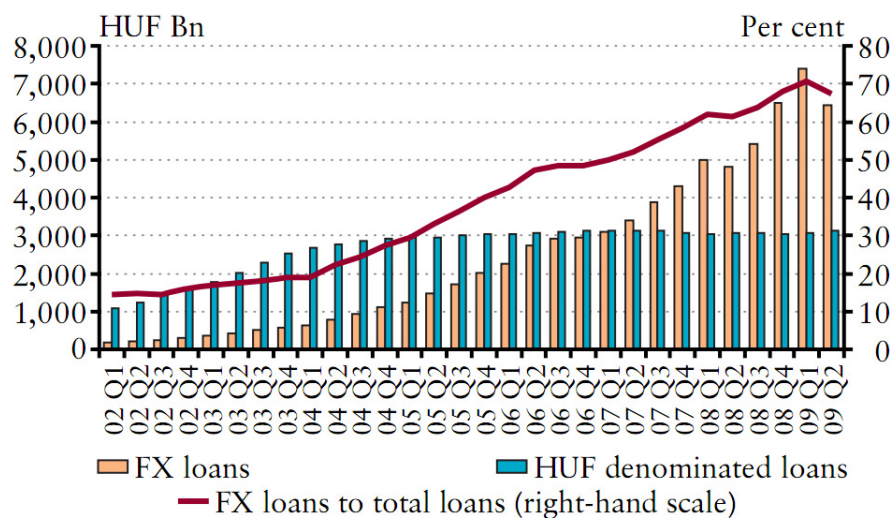
In 2006, for example, the interest rate for mortgage loans denominated in Swiss francs was 3.29%, 9.13% for those denominated in Hungarian forints and 4.3% for those in euros (see Fig. 7). For this rea-

son, it may be beneficial for Hungarians to take out mortgage loans in Swiss francs or euros, thus availing themselves of the lower interest rates.⁵ The volume of mortgages in Swiss francs grew during the years between 2005 and 2008 from 133 billion forints to 2.3 billion forints. The share of mortgage loans denominated in Swiss francs grew from 6% in 2004 to 57% in 2008 (MNB 2009a).

In actuality, however, the decision isn't that easy. Hungarians are very likely to obtain property from a Hungarian developer who will require payment in Hungarian forints⁶. Hungarians must then take

5 Hungarians need not, however, drive to Austria or Switzerland to find a bank where they can take out a loan in euros or Swiss francs. Foreign bank branches right in Hungary will make loans denominated in nondomestic currencies at conditions similar to those available from banks directly in the country in question.

6 Let us presume that most developers in Hungary finance their projects from loans denominated in forints and that the great majority of their costs are also in forints (wages, purchase of materials, etc.). In such a case, the developer will demand payment from buyers, as well, in forints. If the developer accepts payment in Euros or Swiss francs, he will incur a currency risk. He would have to insure himself against this, which would increase investment costs. Therefore he will demand payment in forints.



15: Loans to households in Hungary by currency

Source: Magyar Nemzeti Bank, Report on Financial Stability April 2009



16: Development of the forint vs. the euro and the Swiss franc

Source: Magyar Nemzeti Bank

into account a further variable in deciding whether to apply for a loan in forints versus foreign currency, i.e., the future development of the exchange rate. Let us further presume that our model Hungarian has most of his income (wages, return on investments, etc.) in Hungarian forints, as well⁷. In this case, when deciding which currency his mortgage loan should be denominated in, he must take into consideration the development of the forint/euro or forint/Swiss

franc exchange rate up to the time the entire loan is paid off⁸. In addition, let us suppose that Hungary is a so-called “catching-up” economy (growing on average more quickly than the countries of the eurozone) and that therefore over the long term, the forint will appreciate relative to the euro and other currencies (for more on the issue of currency appreciation in the so-called “catching-up” countries, see Kučerová, 2010). In this case, the advantage of lower

7 The calculation would be completely different for a Hungarian citizen working in some eurozone countries (e.g., Austria) or directly in Switzerland, making a wage denominated in euros or Swiss francs.

8 The normal term for a mortgage loan may be as much as 30 years. But the Hungarian may count upon Hungary having entered the eurozone much earlier, thus shortening the timeframe during which a loan in euros will be subject to risk from negative exchange rate developments (currency risk). Prior development likewise leads to the expectation that the euro/Swiss franc exchange rate will be much more stable than the forint/Swiss franc exchange rate.

interest rates for loans denominated in foreign currencies is further strengthened by the appreciation of the forint. Our Hungarian citizen knows that the foreign currency needed for each future payment of his loan will be available for purchase at a lower price (e.g., he will pay fewer forints for the purchase of a Swiss franc) than for the previous month's payment. This tempting offer significantly reduces costs for obtaining the mortgage loan, but only until the trend in the forint/Swiss Franc exchange rate changes⁹. This may come about, for instance, as a consequence of a financial and economic crisis in which the financial markets evaluate the Hungarian economy as more problematic than others and the exchange rate for the forint substantially weakens against the euro. (See Fig. 16).

Gradually, the Hungarian buys the foreign currency necessary to repay the loan at a higher price which, over time, may substantially exceed the initial benefit of the lower interest rate for a loan denominated in euros/Swiss francs. At the start of 2009, the interbank rate was 317 forints to the euro, while in July of 2008, it was 230 forints to the euro. Most consumer loans and mortgages taken out by Hungarians were in Swiss francs because of the better interest rates. These people got into debt at an exchange rate of 159 forints per Swiss franc – today the Alpine currency is worth 250 forints to the franc. The average monthly payment thus climbed from 40,000 to 60–70,000 forints. As the above example shows, with a longterm, pronounced weakening of the forint, costs for “servicing” the mortgage loan substantially increased, to the point where they threatened the borrower's ability to pay back the loan. Negative development in the forint exchange rate combines with postponement of the date for potential acceptance of the euro to complicate the entire market situation. A solution to this problematic situation for economies similarly troubled as Hungary's (e.g., the Baltic republics) would be rapid acceptance of the euro (see the recommendations for creators of monetary policy).

The two case studies detailed above call attention to some of the risks connected to floating currencies in economies postponing entry into the eurozone. In this discussion, we attempt to formulate recommendations for businesses entering into foreign trade relationships, as well as creators of economic policy in individual countries which have not so far introduced the single-currency euro.

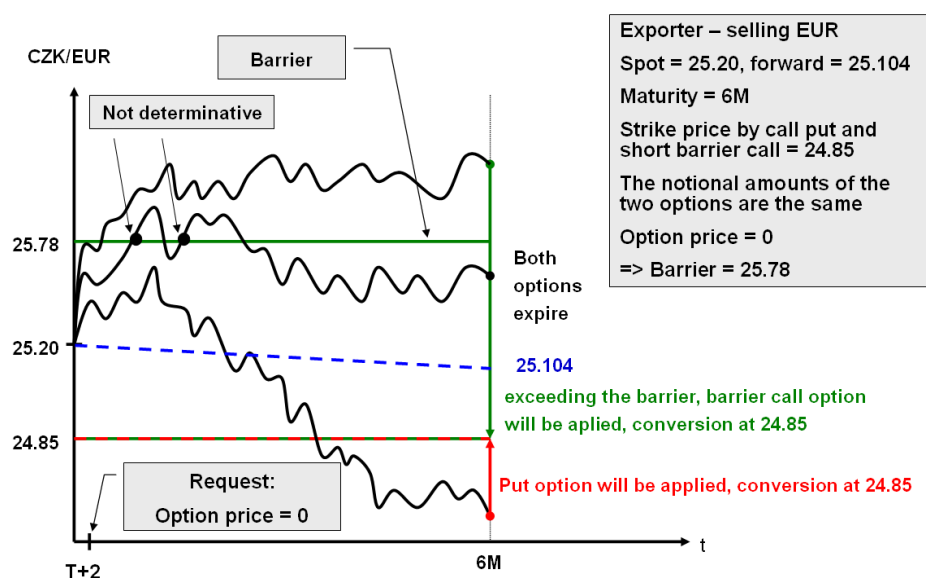
Recommendations for businesses involved in export and creators of economic policy

The two case studies detailed above call attention to some of the disadvantages (risks) connected

to floating currencies in economies postponing entry into the eurozone. The advantages of a floating currency (flexible exchange rate) may outweigh the disadvantages (a highly volatile exchange rate). In this discussion, we attempt to formulate recommendations for businesses entering into foreign trade relationships, as well as creators of economic policy in countries which have not yet introduced the single-currency euro. Export businesses currently use fixed forward contracts as their primary means of security. The potential risks connected to fixed security during the current high volatility and the economic crisis have been discussed in Case Study 1. Under the current conditions of short-term and midterm trends in the development of the exchange rate and the risk of unplanned drops in order volume for exporters, we recommend weighing the use of some types of conditional option contracts instead. Exporters may find it advantageous to purchase put options (plain-vanilla) with the right (but not the obligation) to sell foreign currency anytime before expiry at a strike price agreed today. By contrast to a forward contract, of course, an option premium must be paid. The disadvantage of using options lies in its higher cost vis-à-vis a forward contract because of the option premium (normally 1.5–2.5%, depending upon the strike price chosen). On the other hand, the option owner (exporter) retains the possibility of participating in any advantageous (CZK devaluation) movement of the exchange rate. An important factor affecting the option premium is the volatility of the exchange rate, which is currently more expensive than the total cost of using a net option. We normally use option contracts when it is uncertain beforehand whether the partner will fulfill its obligations. Exporters may allow their options to expire if the partner fails to come through. Even if it is a cash option, the cost is, of course, the option premium paid.

Banks attempt to offer advanced modifications on option contracts. Their goal is to offer a combination of option products at minimal or zero cost to allow partial participation in positive movements of the exchange rate (the attraction is the zero acquisition cost). An example of such a product is the so-called Forward Extra with European Barrier option. This is a combination of a plain-vanilla currency option and a currency barrier option (European knock-in). This is a cost-free option strategy in which one side buys the right to sell the currency in question at the same time as it sells the right to purchase the same currency. The activation of the barrier option may take place only on the date of expiration of the currency barrier option.

⁹ Our model citizen should definitely insure himself against negative currency developments by, for example, taking out a futures contract to minimize the risk of loss if the currency trend reverses course. Any insurance, however, bears additional costs which partially eliminate the bandages of the interest rate differential between a loan in forints and Swiss francs.



17: Example Forward Extra with European Barrier Option
Source: UniCredit Bank

The exporter is protected against devaluation of the currency up to the strike price of the option, and then participates in positive movement between the strike price of the option and the barrier defined. Of course, if the spot rate exceeds the designated barrier during the lifetime of the option, participation ends and the resultant secured exchange rate returns to the level designated by the option's strike price. In exchange for partial participation in any positive development of the exchange rate, of course, the exporter "pays" by getting a less advantageous secured exchange-rate as opposed to a forward contract with the same expiry date.

An optimal solution to the problems described in the above indicated case studies would be rapid introduction of the euro. This would solve the problem for exporters and for households and countries burdened by debt (Lacina, Toman, 2009). On the other hand those countries will immediately lose autonomy above monetary and FX policy.

Countries like Hungary, Latvia and Estonia¹⁰ are having substantial difficulty fulfilling their foreign debt obligations because of the financial and economic crisis. The cause, on the one hand, is the high foreign currency exposure of these countries and, on the other, the great pressure for devaluation of their currencies. As a result of the growing risk of problems in paying debt obligations, risk premiums for these countries have also grown, along with substantial growth in debt servicing costs. For these countries, rapid adoption of the euro, with the accompanying fixing of foreign obligations in the domestic currency, would be a solution. The advantage of membership in the eurozone would be a reduc-

tion in interest rates and subsequent reduction in debt servicing costs. However, the situation of some "old" eurozone members (Greece, Portugal, Ireland) should warn the candidate countries with unsolved fiscal problems against fast introduction of euro. The membership in eurozone did not provide automatic protection against economic problems. On the other hand the countries like Estonia and Iceland see its membership in eurozone as a kind of the protection of domestic economy against future crises.

CONCLUSION

Exchange-rate theory says that during periods of economic crisis, the ability to devalue the currency should be an advantage which contributes to strengthening the competitiveness of the country. In this paper, case studies identified potential negative impacts of volatility on national currencies for export firms, as well as for loans held by citizens in foreign currencies. These case studies detailed above call attention to some of the disadvantages (risks) connected to floating currencies in economies postponing entry into the eurozone. The advantages of a floating currency (flexible exchange rate) may outweigh the disadvantages (a highly volatile exchange rate). However, at the end 2010 is still too early answer our question. We will have to wait until the end of business cycle to receive ultimate answer if it is more advantageous during the global economic crisis to keep own currency in the flexible regime or to be part of monetary union as eurozone is.

¹⁰ Even EMU project is now under heavy critics and some countries are under attack of financial market Estonia was able to fulfil Maastricht criteria and became the 17th member of EMU since January 1st, 2011.

SUMMARY

The paper deals with the identification of potential disadvantages associated with the existence of national currencies with the floating exchange rate regime during the current financial and economic crisis in countries postponing their entry into the eurozone. The hypothesis is that the advantages of a floating exchange rate may be outweighed by their disadvantages (high volatility of exchange rates). Case studies were used to identify possible negative impacts from volatility in national currencies on export firms and household loans denominated in foreign currencies. In this paper, case studies identified potential negative impacts of volatility on national currencies for export firms, as well as for loans held by citizens in foreign currencies.

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