



Costs and Benefits of Poland's EMU Accession: a Tentative Assessment

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This paper addresses the balance of costs and benefits arising from the adoption of the euro in Poland. It shows that given the present degree of economic integration between Poland and the euro area, the potential costs of relinquishing the monetary policy autonomy in Poland are likely to be modest. A tentative assessment suggests that the switch to the euro is expected to raise GDP *per capita* in Poland by 4%–7% in the long run. The paper concludes that, on balance, Poland is likely to benefit significantly from the EMU membership.

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INTRODUCTION

Following its accession to the European Union, Poland will be expected to meet the Maastricht convergence criteria and eventually join the euro area.² It seems evident that an irrevocable decision to abandon autonomous monetary policy and substitute domestic currency by the currency of a supranational economic entity should be preceded by a careful examination of the costs and benefits of this process. The purpose of this paper is to provide such a cost-benefit analysis for Poland.

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² Having no 'opt-out' clause, upon the EU accession Poland will become a member of the EMU with a derogation and will be committed to finally adopting the euro. For simplicity, further in the text 'EMU', 'euro area' and 'euro zone' will be treated synonymously.



Opponents of currency unions usually emphasise the costs of relinquishing monetary policy autonomy leading to potentially greater output fluctuations arising from idiosyncratic shocks. Proponents often point to the higher output in the long run as a major benefit stemming from monetary integration. This paper attempts to assess the costs and benefits of the euro adoption in Poland by gauging the potential for rising output volatility after joining the euro area and calibrating the growth effects triggered by monetary integration. The result of this assessment is that – given the advanced process of economic integration between Poland and the euro area – the costs of abandoning autonomous monetary policy are likely to be modest. Furthermore, it is shown that in the long run the adoption of the euro will raise GDP *per capita* in Poland by 4%–7%. This effect is likely to be magnified by the intangible gains from monetary integration. Therefore, the chief finding of the paper is that in the long run Poland is likely to benefit significantly from adopting the euro.

The paper is structured as follows. In the next section, a brief overview of potential costs arising from Poland's EMU accession is given. In this section emphasis is placed on the issue of asymmetric shock exposure of the Polish economy and the attendant risk of rising output variability after the introduction of the euro. Further in this section, the efficiency of the exchange rate adjustment mechanism and the role of a floating exchange rate as a shock-generator rather than a shock-absorber is discussed. In the section following the next, the benefits of joining the euro area are addressed. Here the three most frequently discussed issues, namely the transaction costs, trade and interest rate channels, are analysed. These considerations are accompanied by a tentative assessment of the long-run growth effects arising from the euro adoption in Poland. In the penultimate section an overall balance of potential costs and benefits arising from Poland's EMU accession is presented. The last section concludes the paper.

THE OUTPUT VARIABILITY BEFORE AND AFTER MONETARY UNIFICATION

Once in the euro area, Poland relinquishes the autonomy of its monetary policy. The latter can no longer be used to address idiosyncratic (demand) shocks affecting the Polish economy. In other words, introduction of the euro implies a loss of an important policy instrument, which may be employed to smooth out the cyclical fluctuations of output. The potentially higher variability of output and employment after the EMU accession would exert a negative impact on the welfare of economic agents who prefer stability of their real income through time. Hence, a key question pertaining to Poland's



future EMU accession is whether the monetary integration with the euro area will lead to a higher output variability in Poland.

According to the standard approach to the theory of optimum currency areas (OCA), the abandonment of the floating exchange rate regime can be viewed as costly when other adjustment mechanisms such as labour mobility, wage flexibility or federal (supranational) fiscal policy are not effective or non-existent (Mundell, 1961). There is compelling evidence that due to linguistic, cultural and institutional barriers (some current EU members are likely to retain the labour mobility restrictions for up to seven years), the external mobility of the Polish labour force is likely to remain low for some time after EU accession (Borowski, 2000). The smooth functioning of wage adjustment mechanism in Poland is considerably hindered by the centralised wage bargaining system (Borowski, 2002). The relatively small EU budget, slightly more than 1% of EU GDP, is by design balanced and expenditure programmes are almost fully pre-determined. Thus, the budget has no built-in fiscal stabilisers and cannot be used to mitigate country-specific asymmetric shocks. These arguments highlight the importance of assessing the asymmetric shock exposure in Poland after the euro changeover.

The empirical research suggests that after joining the euro area, Poland is not likely to be exposed to severe asymmetric shocks. This can be argued by pointing to strong trade linkages (Figure 1). They result in a relatively

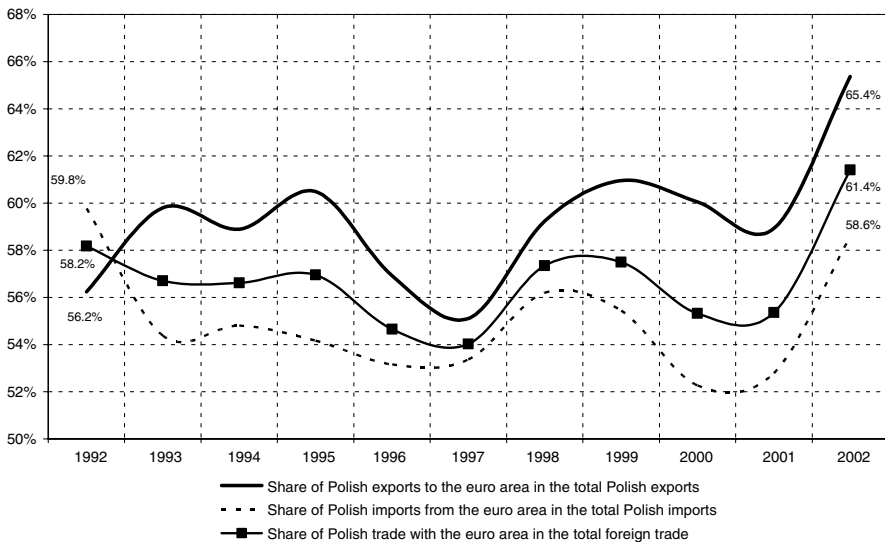


Figure 1: Trade integration between Poland and the euro area. *Source:* Own calculations based on CSO data.



high (moderate) cyclical convergence between Poland and the euro area assessed on the basis of cyclical components of industrial production (GDP) (Borowski, 2001). Using a more sophisticated technique, Fidrmuc and Korhonen (2003a) decompose the real GDP fluctuations into supply and demand shocks and adjustments triggered by these shocks. Their results suggest that the correlation of demand shocks between Poland and the euro area is one of the highest among the EU and candidate countries.³

The aforementioned arguments can be reinforced by empirical studies showing that the OCA criteria are endogenous with respect to the process of monetary integration. The presently observed alignment of the business cycles between Poland and the euro area is likely to be suppressed by the uncoordinated monetary policies (Artis and Zhang; 1995). Moreover, possible trade gains arising from the elimination of exchange rate uncertainty (see the next section) are likely to increase bilateral trade openness between Poland and the euro area, which in turn will strengthen their cyclical convergence (Frankel and Rose, 1996).

It should be noted that trade creation leads to sustainable business cycle alignment when additional trade is intra-industry rather than inter-industry (Fidrmuc, 2001). Whether trade expansion leads to greater intra-industry trade intensity is essentially an empirical question. In a case study, Krugman (1993) argued that trade expansion leads to more specialisation (inter-industry trade) and thus higher susceptibility to idiosyncratic shocks. However, Frankel and Rose (1996) used a panel regression based on a large data set to support their hypothesis on the endogenous character of the cyclical convergence. As a corollary, there is compelling reason to believe that monetary integration is likely to result in higher intra-industry trade intensity and thus more sustainable synchronisation of business cycles between countries making up a monetary union.

The optimistic assessment of cyclical convergence between Poland and the euro area is dwarfed by the fact that despite moderately strong cyclical linkages the variance of output in Poland is significantly higher than in the euro area (Figure 2). Given the long-term nature of the catching-up process, these patterns are expected to extend far beyond the moment of joining the

³ These results are quite sensitive to the period chosen. The revised calculations presented in this volume (Fidrmuc and Korhonen, 2003b) suggest that the 2000–2002 economic slowdown significantly reduced the correlations of demand shocks between some of the accession countries (Hungary, Poland) and the euro area. However, in Poland, as well as in Hungary this effect was magnified by the shift to a more restrictive monetary policy. As a corollary, results of earlier studies (Fidrmuc and Korhonen, 2003a) are likely to reflect better the level of business cycle synchronisation between Poland and the euro area.

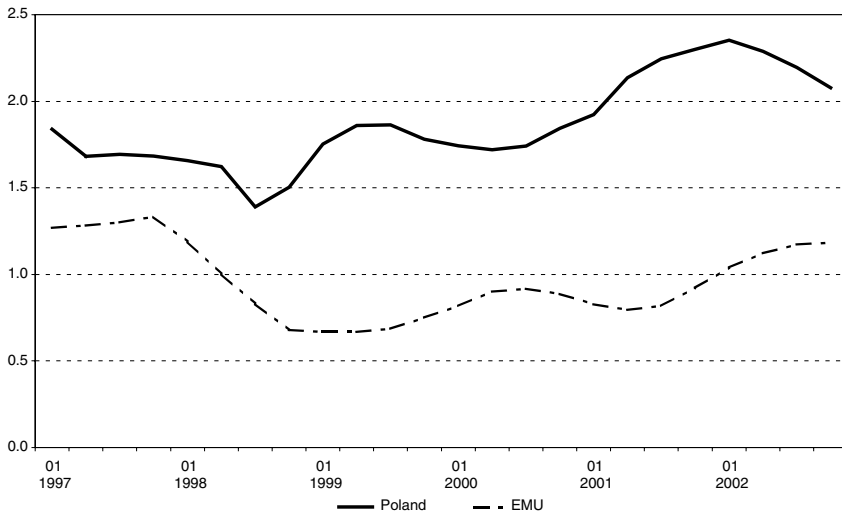


Figure 2: Five-year rolling standard deviation of GDP annual percentage changes in Poland and the euro area. *Source:* Own calculations based on Kelm (1999), ECB and CSO data.

euro area.⁴ There is thus a risk that the magnitude of the countercyclical monetary policy pursued by the European Central Bank might prove insufficient (ie too small) to address the economic developments in Poland appropriately (Alesina *et al.*, 2002). Moreover, Poland-EMU intra-industry trade intensity (measured by the Grubel-Lloyd index) is relatively low both as compared to the GDP (Bratkowski and Rostowski, 2001) and to total foreign trade (Borowski, 2001). To some extent, this may be explained by ‘structurally’ unbalanced trade, a phenomenon observable in virtually all emerging economies.⁵ Nevertheless, further increase in intra-industry trade

⁴ The Russian crisis in 1998 and the unbalanced policy mix in 2000–2002, being in fact one-off factors, contributed in a large part to the widening gap between the volatility of output in Poland and the euro area. As a corollary, the recently observed variance of output in Poland is likely to be biased upwards. However, the relatively high output variability in Poland in the period up to 1998 suggests that the ECB monetary policy may turn out to be not entirely appropriate for the Polish economy.

⁵ Ideally, Grubel-Lloyd index of intra-industry trade should be calculated for countries with balanced trade. If the trade is unbalanced, some trade flows within a particular industry are by definition not matched by the others. This implies a downward bias to the Grubel-Lloyd index (Grubel and Lloyd, 1975). Since the trade deficit in Poland is a natural consequence of the catching-up process (given the low domestic savings and high investment needs), the intra-industry trade intensity calculated on the basis of the standard Grubel-Lloyd index is biased downwards. The levels of adjusted Grubel-Lloyd indices for Poland, accounting for the unbalanced trade, are provided by Borowski (2001).

between Poland and the euro area is desirable in order to increase the sustainability of the cyclical convergence between the two economies.

The foregoing considerations argue that the abandonment of monetary policy in Poland has to be considered a cost of monetary integration. On the other hand, two frequently raised arguments downplay the role of the flexible exchange rate as a 'shock-absorber'. The first draws on the fact that in the world of fully liberalised capital movements, cross-border financial flows tend to be dominated by capital transactions (Figure 3). In such an environment, the Mundellian type of exchange rate adjustment to asymmetric shocks is not practically feasible. This view is supported by empirical findings pointing to exchange rate movements being triggered mainly by shocks stemming from financial sphere rather than real economy (Canzoneri *et al.*, 1997). However, the empirical evidence for Poland (Przystupa, 2003) suggests that the zloty is responsive to economic fundamentals such as trade balance. In other words, the floating exchange rate regime in Poland continues to play the role of a 'shock absorber' indirectly, that is, by accommodating changes in the risk premium rather than reacting directly to foreign trade-driven supply-demand conditions on the foreign exchange market.

The second argument emphasises that the floating exchange rate regime *per se* may have destabilising effects. (Calmfors Commission, 1997). Indeed, high real exchange rate volatility, distorting resource allocation, is generally viewed as a major shortcoming of freely floating exchange rate regimes (Edwards and Savastano, 1999). Several factors may contribute to the real

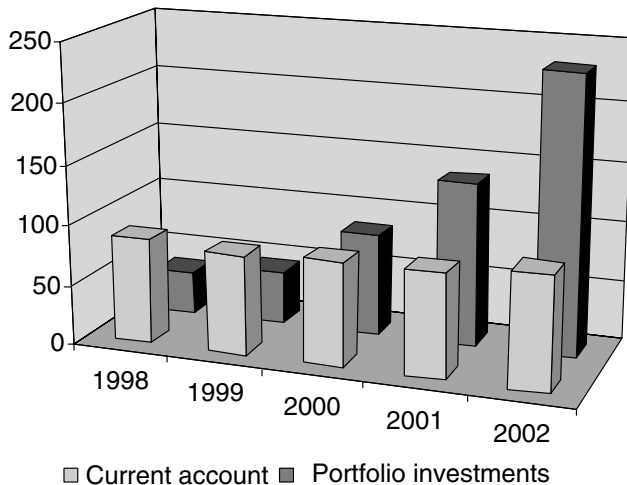


Figure 3: Cross-border flows (inflows+outflows) in Poland in 1998–2002 (bln \$). *Source:* National Bank of Poland.

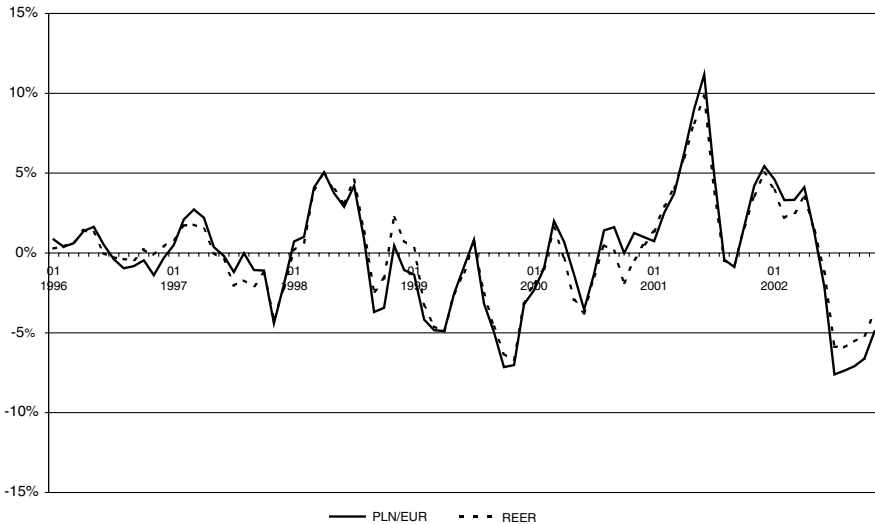


Figure 4: Real PLN/EUR^a exchange rate^b and REER: deviations from the Hodrick–Prescott trend (%) in 1996–2002. *Source:* Own calculations based on ECB, NBP and OECD data: ^aECU up to end-1998. ^bProducer prices in the manufacturing sector is used as a deflator.

exchange rate deviating from its long-term equilibrium over the medium horizon. One is susceptibility to contagion. It can be expected to be entirely eliminated only if Poland joins the EMU (National Bank of Hungary, 2002). The second reason is uncertainty over the future course of monetary policy and macroeconomic policy in general. Since decades rather than years are needed to establish the fully-fledged credibility of the monetary policy in Poland, accession to the EMU offers a ‘short-cut’ in this respect (Alesina *et al.*, 2002). Finally, portfolio investors’ speculation may magnify the short-term exchange rate overshooting that is necessary to counteract inflationary shocks if prices are sticky. In Poland, such misalignments are likely to be reinforced by the shallowness of the Polish foreign exchange market (Sławiński, 2001).

The short history of the floating exchange rate regime in Poland⁶ seems to provide the evidence for destabilising effects of a freely floating exchange rate. Indeed, over the last three years deviations of the real effective exchange rate (REER) of the zloty from its long-term trend have increased considerably (Figure 4).⁷ The fact that REER fluctuations mirrored the real PLN/EUR

⁶ The floating exchange rate regime was introduced in April 2000.

⁷ A more sophisticated analysis of the zloty misalignments, based on the concept of fundamental equilibrium exchange rate (FEER), is provided by Rubaszek (2003). This study reveals substantial overvaluation of the zloty over 2001 and in the first half of 2002.



changes points to domestic volatility of the zloty basket exchange rate rather than external volatility of the euro/dollar cross rate as a source of these fluctuations. Should the recently observed patterns of real exchange rate fluctuations persist in the future, one could plausibly claim that floating exchange regime *per se* contributes to the output volatility in Poland.

One can plausibly argue that the far-from-optimum policy mix in 2000–2002 biased the observed REER volatility in Poland upwards. However, the picture emerging from empirical studies focusing on trade effects of real exchange rate volatility shows that shifts from rigid (flexible) exchange rate regimes towards more (less) flexible arrangements tend to be accompanied by greater (lower) real exchange rate variability (International Monetary Fund, 1984; De Grauwe, 1987). This reinforces the argument that the ‘flexibility loss’ arising from the EMU accession is likely to be somewhat overstated.

The foregoing analysis leads to the following conclusions. First, the asymmetric shock exposure of the Polish economy can be considered as relatively low and – once in the euro area – is likely to fall further driven by harmonisation of monetary policies in Poland and the euro area, deepened trade integration between the two economies and the attendant evolution of trade structure. Second, despite the rising alignment of business cycles, the fluctuations of output in Poland are wider than in the euro area. Consequently, the smoothing effects of the ECB single monetary policy might turn out to be insufficient to stabilise output in the extent to which it may be done by independent monetary policy prior to EMU accession. Third, the loss related to the relinquishment of the monetary policy autonomy in Poland is mitigated by the possibly destabilising effects of the floating exchange rate regime that are likely to persist should Poland stay outside the EMU for long time.

While the first and the third arguments suggest that output variability in Poland should decrease after the EMU accession, the second argument leads to the opposite conclusion. Since the net effect of the three analysed factors cannot be precisely quantified, it remains a matter of judgement as to whether the EMU accession would lead to wider fluctuations of output in Poland. However, it should also be recognised that there are limitations to the pursuit of successful countercyclical monetary policy in a small open economy. An independent monetary authority cannot always act effectively to reduce potentially higher cyclical movements of output and employment. Indeed, factors such as instability of monetary transmission channels and the insufficient accuracy of the inflation forecasts employed in the decision-making process reduce the effectiveness of the anti-cyclical monetary policy. Therefore, it can be plausibly argued that in Poland the potential loss due to



the transfer of the monetary policy autonomy to a supranational institution will be very limited.

LONG-TERM GROWTH BONUS: THE REAL CASE FOR JOINING THE EURO AREA

The theory of monetary integration postulates a wide array of channels through which the impact of the monetary union on the economies sharing a common currency may be exerted. In this study only three, namely potential transaction savings, effects on interest rates and bilateral trade expansion, are considered.⁸ The purpose of this analysis is to provide a tentative assessment of the long-run growth effects triggered by these channels.

Once in the euro area, the bilateral PLN/EUR exchange rate ceases to exist and the related costs such as commissions, spreads between buying and selling rates, fees for hedging against exchange rate risk and in-house costs⁹ are eliminated. Assuming that resources released as a result of elimination of transaction costs find an alternative use, transaction cost savings represent a one-off rise in overall efficiency with which capital and labour are matched to produce a unit of output. Further, this static efficiency gain induces capital formation (dynamic efficiency gain) that eventually magnifies the initial rise in output *per capita* (Baldwin, 1991). The transaction cost savings arising from euro adoption in Poland has been estimated to be around 0.2% of GDP (Borowski, 2003).

One important ramification of euro adoption in Poland will be the elimination of the currency risk premium (compensating for unexpected changes of the zloty exchange rate) required by risk-averse investors investing into zloty denominated assets. The attendant rise of the risk-adjusted rate of return (equivalent to the fall of the risk-adjusted discount rate) is likely to boost domestic investment in Poland, which, in turn, will foster capital formation and output *per capita* (Baldwin, 1991)¹⁰. The scale of

⁸ Other gains, such as possible seigniorage increase, welfare gains from low inflation, higher competition arising from greater price transparency and efficiency gains from capital market integration are either of little relevance to the long-term growth potential (seigniorage) or hardly quantifiable (Baldwin, 1991; Calmfors Commission, 1997).

⁹ The in-house costs embrace, *inter alia*, resources tied up in managing foreign exchange operations, exchange rate risk exposure, maintaining additional accounting activities and losses due to less efficient cash management (EC Commission, 1990).

¹⁰ Elimination of exchange rate uncertainty may also provide a potential stimulus to foreign direct investments. However, due to the ambiguity of empirical results (Brzozowski, 2003) this channel can hardly be considered as a potential engine of growth brought into play by the EMU accession.



the growth bonus, achieved due to falling interest rates, depends on the magnitude of the risk premium that would be observed if Poland decided to stay outside the euro area for a longer run. According to Borowski (2003), the currency risk premium in Poland can be conservatively estimated at 150–200 basis points.¹¹

It should be noted that the estimated size of currency risk premium in Poland is much higher than the presently observed spread between the 10-year bond denominated in zloty and a similar German bond corrected for the liquidity and default premium. Under the assumption of constant exchange rate expectations, the long-term interest differential equals 80 basis points. This difference can be explained by the ‘convergence play’ phenomenon, that is, suppression of the long-term interest rate differential between Poland and the euro area arising from the downward revision of the long-term exchange rate risk. This revision is prompted by the expectation of an early euro adoption in Poland, which, in turn, should discipline the fiscal and monetary policies and eventually lead to the entire elimination of exchange rate uncertainty. In other words, the relatively low interest rate differential between Poland and Germany is a credit extended to Poland against the commitment to an early euro adoption.

The switch to the euro is expected to provide a stimulus for bilateral trade between Poland and the euro area. One factor behind the bilateral trade expansion is the elimination of transaction costs that constitute a non-tariff barrier to foreign trade. The importance of this factor will largely depend on the extent to which these savings translate into lower prices of tradable goods. Moreover, once in the euro area, the uncertainty about the future level of exchange rate and profits generated by firms participating in the foreign exchange is eliminated. It can be shown that this uncertainty has a deleterious influence on foreign trade (Hooper and Kohlhagen, 1978). It must be noted that empirical evidence on the linkage between exchange rate uncertainty and foreign trade is ambiguous.¹² Nevertheless, recent studies prompted by the seminal papers of McCallum (1995) and Rose (2000), focusing on trade effects of currency unions rather than merely eliminating the bilateral exchange rate uncertainty, suggest that these effects may be large. The examination of available empirical findings leads to the conclusion that the euro changeover is likely to yield an increase of bilateral Poland-euro

¹¹ Using the similar methodology, based on uncovered (short-term) interest rate parity, National Bank of Hungary (2002) reckons the currency risk premium to be around 100–300 basis points.

¹² Borowski (2003) provides a literature survey and uses the measure of exchange rate uncertainty originally constructed by Rose (2000) to assess the Poland-euro area trade effects arising from elimination of the zloty/euro exchange rate volatility.



trade by around 40%–60% in the long run (Borowski, 2003). However, the extent to which this trade creation effect of the common currency is offset by trade diversion needs to be further investigated.

The potential growth bonus arising from the trade expansion is likely to be a combination of two factors. The first are the traditional gains from specialisation driven by exploitation of the economies of scale. The second growth component is postulated by the new trade theory based on models with endogenous technological change (Grossman and Helpman, 1991; Edwards, 1997). In these models, foreign trade acts as an important carrier for knowledge spillovers and absorption of technological progress achieved by other countries. As a corollary, the total factor productivity in more open economies should grow faster than in countries less open to foreign trade. Poland, with its initially low stock of knowledge as compared with leading economies, should benefit from euro adoption and concomitant trade effects. (Edwards, 1997; Frankel and Romer, 1999; Frankel and Rose, 2000).

In order to assess the EMU-related growth effects for Poland, some remarks on the relative importance of the three aforementioned channels are necessary. As to the transaction costs savings, it can be argued that they merely amplify the macroeconomic impact of the trade and interest rate channels. Once separated from trade effects and induced capital formation, lower transaction costs are likely to bring benefits that constitute only a small fraction of those activated by trade expansion and lower interest rates. This picture is confirmed by empirical findings (Baker *et al.*, 1996; Baldwin, 1991; National Bank of Hungary, 2002).

Empirical research lacks any consensus as to which of the remaining two channels should be considered as the leading one. Until recently, conventional wisdom was that interest rates were the major conduit through which monetary unions affected output. (Baker *et al.*, 1996; Pereira, 1999). This has changed since the revival of the research aimed at quantifying the trade effects of currency unions. An example is the paper by Frankel and Rose (2000). They used panel regressions performed on a large data set to estimate the long-run impact of currency unions on trade and, *via* greater economic openness, on output in various countries. Within this framework, capital formation, induced by trade expansion and lower interest rates, does not appear explicitly in the model. This approach is noteworthy, for it captures the knowledge-based growth effects postulated by the new trade theory. On the other hand, given the inconclusive debate on trade effects of currency unions, an approach focusing entirely on the interest rate channel is likely to produce more robust results. Therefore, it seems natural to apply a twin-track approach to assess the growth effects of the euro adoption in Poland.



If the benefits arising from the euro in Poland come chiefly through the promotion of trade rather than lower interest rates, the magnitude of the related growth bonus is assessed by Frankel and Rose (2000). They applied a two-stage approach to estimate the impact of currency unions on output. In the first stage, which draws heavily on Rose (2000), they used a gravity model of trade to assess the effects of currency unions on trade. Their chief finding is that participation in the common currency area more than triples trade between the countries sharing a common currency. Interestingly, they have found no evidence for trade diversion. The estimates performed in the second stage indicate that every one percent increase in economic openness (foreign trade as % of GDP) boosts the GDP *per capita* by 0.33% over 20 years. Combining these two estimates allows for assessment of the long-run growth bonus arising from the adoption of the euro in Poland. If Poland-euro zone trade triples as a result of the euro changeover, the GDP *per capita* is likely to rise by 20% over the long run (Frankel and Rose, 2000).

The foregoing estimate merits three comments. First, it assumes no trade diversion from non-euro area countries to other EMU participants. This assumption, however, is not unanimously shared by alternative gravity models of trade used to calibrate the trade effects of EMU (Anderson, 1979; Rose and van Wincoop, 2001). Second, it is an open question as to how much time would be needed for trade to triple as a result of EMU accession. Even a rough assessment of the time span is necessary to know how the euro would translate into the growth rates of the Polish economy. Thirdly, Frankel and Rose's results have been criticised because of the sample of countries that they use in their study (Bun and Klaasen, 2002; Persson, 2001).¹³ It is unlikely that bilateral trade will rise by anything close to 200%.

Applying a more plausible 50% increase in the Poland-euro zone trade arising from the euro adoption (the middle of the aforementioned range) and assuming no trade diversion, the long-run level of GDP *per capita* in Poland is expected to increase by 5%. This estimate is derived as follows. Given the 60% share of the Poland-EMU trade in the total Poland's foreign trade, the 50% increase of the bilateral trade between Poland and the euro area should yield a 30% increase in total foreign trade, assuming no trade diversion. Given that the present level of openness (trade/GDP) is 50%, this implies an increase of 15%. Using the multiplier provided by Frankel and Rose (2000), Polish GDP *per capita* should rise 5% in the long run (15×0.33). Although

¹³ Countries sharing a common currency were relatively poor, small, geographically closer and frequently shared a common language, borders and colonial relationship. Further, the country pairings with a common currency constituted a small part of the whole sample and countries participating in the EMU were excluded from the sample.



appreciably smaller, this outcome still renders the introduction of the euro an attractive policy option for Poland.

The estimated magnitude of the growth effects through trade should be compared to the impact of euro-driven growth through the transaction cost and interest rate channels. Baldwin (1991) proposes a neoclassical model with inter-temporal optimisation (and thus varying-saving-rate specification) for calibrating these effects. For simplicity, he uses a standard Cobb–Douglas production function with a productivity parameter (A), capital (K) and labour (L):

$$F(A, K, L) = AK^\alpha L^{1-\alpha}$$

where α is the elasticity of output with respect to capital. This functional form can be written in *per worker* terms:

$$F(k) = Ak^\alpha$$

where k is capital *per worker*. Since one has to consume less in order to invest more, costs of investments are the cost of foregoing consumption. This cost is expressed by the discount rate. The long-run (steady state) level of output is attained when the marginal product of capital is equal to the discount rate, ρ :¹⁴

$$F'(k) = \alpha Ak^{\alpha-1} = \rho$$

Further, the steady-state capital stock (k_{ss}) can be determined as

$$k_{ss} = \left(\frac{\rho_{ss}}{A\alpha}\right)^{1/(\alpha-1)}$$

Finally, the long-run level of output can be expressed as a function of the steady-state level of capital:

$$F(k_{ss}) = A \left(\frac{\rho_{ss}}{A\alpha}\right)^{\alpha/(\alpha-1)} = A^{1/(1-\alpha)} \rho_{ss}^{\alpha/(\alpha-1)} \alpha^{\alpha/(1-\alpha)}$$

This simple framework can now be used to calibrate the growth effects of the euro adoption in Poland. As noted above, transaction cost savings

¹⁴ This is the profit maximisation condition. It should be noted that in this simplified set-up it is a composite unit (a household/producer) that decides which fraction of output is saved. Therefore, it is implicitly assumed that a decision to invest more and consume less, triggered by a fall of the risk-adjusted discount rate, is made only when additional capital accumulation leads to a permanently higher level of consumption.



estimated for Poland (0.2% of GDP) are equivalent to a one-off rise in overall productivity (A). According to Gradzewicz and Kolasa (2003), the elasticity of output with respect to capital can be estimated at 0.4. Hence, elimination of transaction costs is expected to raise output by around 0.33% in the long run [$0.2(1/(1-0.4))$]. Hardly an impressive improvement.

However, the growth bonus triggered by interest rate changes is much larger. To assess the interest rate effects, the risk-adjusted discount rate and the risk premium have to be assessed. Baldwin (1991), attempting to calibrate the growth effects for current euro zone members, assumed the discount rate to range from 5% to 10%. To estimate the risk premium, we need to compare a pre-EMU steady state to a steady state attained after adopting the euro. Given the presently observed magnitude of the income gap between Poland and most advanced euro zone economies, Poland is undoubtedly far away from the pre-EMU steady state. If Poland opted to stay outside the euro zone for a long time, as the economy approached the pre-EMU steady state the credibility of macroeconomic (monetary) policy would steadily increase and the currency risk premium would gradually fall. Hence, the aforementioned estimates of the currency risk premium for Poland are likely to be somewhat overstated and can be reduced to 50 basis points.

Applying the aforementioned premium to the range of discount rates used by Baldwin, the expected fall of the risk-adjusted discount rate would be between 5% and 10% of its initial level. This would yield the long-run growth effects ranging from 3.33% [$(-5\%) (0.4/(0.4-1))$] to 6.66% [$(-10\%) (0.4/(0.4-1))$]. Combining these estimates with the growth bonus delivered by transaction cost savings, one could expect the euro adoption to raise the output in Poland by 4%–7% in the long run.

Owing to the simplicity of this framework the results should be considered illustrative rather than precise. Nevertheless, one can find it reassuring that the growth effects induced by transaction costs and interest rate channels are of comparable magnitude to those triggered by trade effects. Moreover, both effects are large. This finding certainly contradicts the hypothesis postulated by Feldstein (1991), who views the monetary union in Europe as a project motivated purely by political factors.¹⁵

¹⁵ This argument was originally used with reference to the countries that became the founding members of the EMU. However, the results of empirical research suggest that some of the accession countries (eg Latvia), are much less likely to constitute the OCA with the euro area than some of the current EMU members (eg France) (Fidrmuc and Korhonen; 2003a). Hence, drawing on the Feldstein's argument, one can conclude that the economic rationale behind the eastward euro area enlargement may be even more questionable.

BALANCING COSTS AND BENEFITS OF THE EURO ADOPTION

The foregoing paves the way to an analysis of the costs and benefits of euro adoption for Poland. The costs are potentially higher output variability; the benefit is higher long-run output. (Grubel, 1970). More formally, both costs and benefits can be related to the bilateral openness (ie the openness towards the country whose currency is going to be adopted) measured as a share of bilateral trade in the total output (Figure 5). Within this framework, benefits are increasing in the trade/GDP ratio because transaction cost savings and trade expansion (both relative to GDP) are higher, the stronger the initial trade linkages between the future currency union members. This relationship is consistent with the empirical findings of Frankel and Rose (2000), who showed that a currency union with a major trading partner rather than currency union *per se* delivers the expected growth bonus.

The costs of monetary integration are expected to fall as the degree of bilateral economic openness increases. First, greater openness amplifies the pass through from the exchange rate to prices and wages, thus limiting the effectiveness of the exchange rate adjustment mechanism as a means to correct for asymmetric shocks. Second, stronger trade linkages accompanied by a rising share of intra-industry trade make business cycles more synchronised and more sustainable. The point at which two curves intersect (T^*) determines the level of openness at which the costs of monetary integration are completely offset by the benefits from this process. If openness

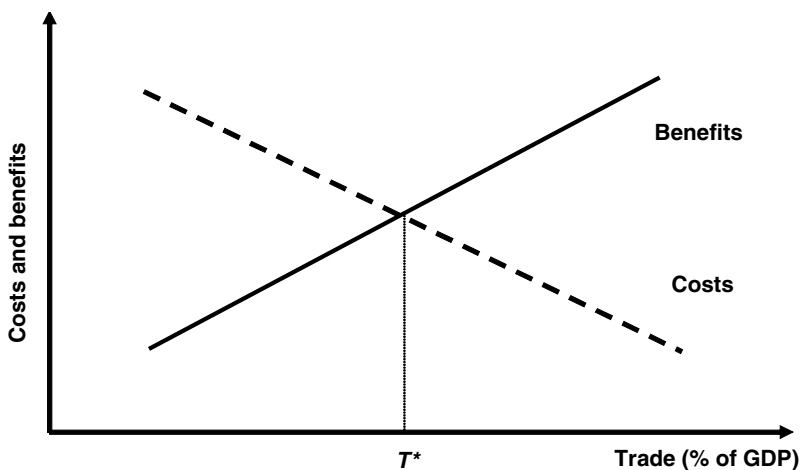


Figure 5: Costs and benefits of monetary integration. Source: De Grauwe (1997).

is greater than T^* , the benefits of currency union exceed the costs. The break-even point is also determined by the distance between the cost curve and the origin. Higher labour market rigidities (more rigid wages and (or) less mobile labour) shift the cost curve away from the origin, thus requiring greater economic openness before the costs are outweighed by the benefits. By the same token, a more volatile exchange rate (with attendant destabilising effects for the real economy) shifts the cost line towards the origin and, *ceteris paribus*, makes the currency union more beneficial.

Despite its transparency, the framework sketched above can only be used to gauge whether some countries are economically more likely to benefit from joining a currency union. In other words, one can judge various candidates for a monetary union by their openness with respect to the existing (eg euro area) or would-be currency areas. (see Figure 6) Assuming the identical break-even point for all candidates, one can easily find which of them are more likely to achieve the net gain from monetary integration. Accordingly, Czech Republic and Hungary are likely to benefit much more from the euro than Poland and Spain. However, whether a particular currency union is good

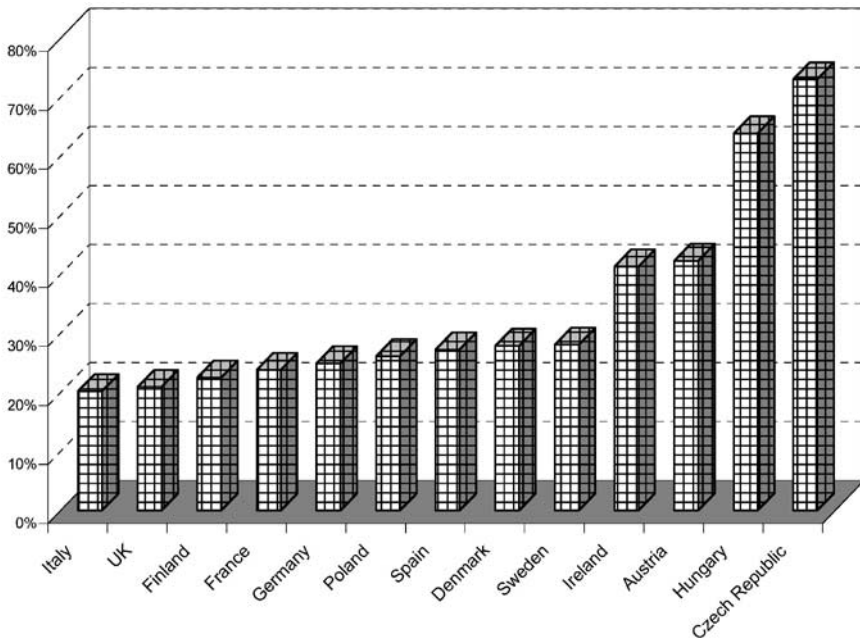


Figure 6: Trade with the euro area as % of GDP in selected EU and accession countries. *Source:* Own calculations based on OECD and Eurostat data.



for a country, depends on the location of the T^* point. The latter is essentially a matter of judgment.

The foregoing discussion suggests that a rule of thumb should be used to assess the net benefit arising from the adoption of the euro in Poland. While there is little risk of rising output fluctuations after the switch to the euro, the EMU accession offers a unique opportunity to reap a tangible gain in the form of much greater long-run output. Thus, on balance, Poland should benefit from adopting the euro. This conclusion is reinforced by the fact that the intangible benefits, such as stronger competition arising from greater transparency, are expected to magnify the potential gain stemming from the switch to the euro.

It must be kept in mind, however, that the potential costs of the euro adoption in Poland may be incurred shortly after the EMU accession, whereas it would take decades for the benefits to accrue fully. Hence, the euro is a project that seems appealing to long-distance runners, rather than those for whom the choice between waiting or being impatient rarely tilts towards the former.

CONCLUSIONS

Monetary unions are about trading lower output fluctuations against higher output in the long run. Given the present stage of economic integration between Poland and the euro area, it can be expected that Poland will not be exposed to significant idiosyncratic shocks after the EMU accession. Hence, the cost of relinquishing the monetary policy autonomy in Poland, in the form of potentially wider fluctuations of output and employment, are expected to be modest. These costs should be set against significantly higher output *per capita* in the long run, resulting from reduced transaction costs, lower interest rates and bilateral trade expansion between Poland and the euro zone. A tentative assessment suggests that the switch to the euro is expected to boost the GDP in Poland by 4%–7% in the long run. Further, these growth effects are likely to be amplified by the unquantified benefits arising from the EMU accession. Thus, on balance, Poland is likely to benefit from the EMU membership in the long run, and for this reason, the early euro adoption should remain the ultimate target of the macroeconomic policy in Poland.

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