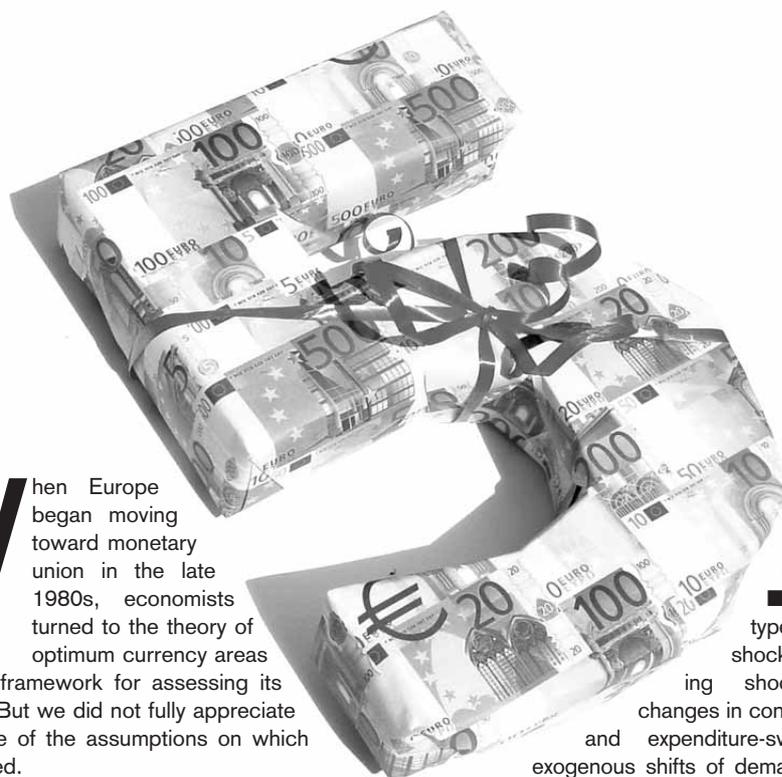


# Five years of the ECB

**Peter Kenen looks back on the lessons to be learned from the early experience of European monetary union and concludes that it is paying too much attention to monetary aggregates.**



**W**hen Europe began moving toward monetary union in the late 1980s, economists turned to the theory of optimum currency areas as the appropriate framework for assessing its costs and benefits. But we did not fully appreciate the restrictive nature of the assumptions on which that theory was based.

These assumptions were those commonly used in the early 1960s, when Robert Mundell wrote the paper that gave optimum currency area (OCA) theory its name. We assumed that

- each country's wages and prices were rigidly fixed in domestic currency terms, so that changes in nominal exchange rates would be fully reflected in real exchange rates;
- there was no capital mobility, so that countries adopting

fixed exchange rates could still pursue independent monetary policies;

■ countries confront two types of long-lasting shocks: expenditure-changing shocks (i.e. exogenous changes in consumption or investment) and expenditure-switching shocks (i.e. exogenous shifts of demand between home and foreign goods).

This framework led directly to a straightforward pairing of exogenous shocks and policy responses. Consider a world comprising two countries, East and West. Let each one begin in *internal balance*, which we can define as the highest output level consistent with long-run price stability. Let both countries begin in external balance, which is necessarily defined in this context as balanced bilateral trade, because there is no capital mobility.



## We did not fully appreciate the theory's restrictive assumptions

Let East then experience an expenditure-raising shock – a long-lasting increase of aggregate demand. As it raises Eastern output and imports and thereby raises Western output, it drives both countries away from both internal and external balance. But a tightening of Eastern monetary policy can offset this shock, restoring internal balance in each country and external balance between them. Hence, national monetary policies can be assigned to combat expenditure-changing shocks – Eastern policy to Eastern shocks and Western policy to Western shocks.

Consider, however, an expenditure-switching shock – a shift of expenditure from Western to Eastern goods. This raises Eastern output, reduces Western output and causes East to run a current account surplus. National monetary policies are not helpful here, but a real appreciation of the Eastern currency can offset the shock by raising the relative price of Eastern output and switching demand back to Western goods. Moreover, a real appreciation can be achieved by a nominal appreciation when, as here, goods prices are rigidly fixed in domestic currency. Hence, exchange rate policy can be assigned to combat expenditure-switching shocks.

Now suppose that East and West form a currency union by undertaking to fix irrevocably the nominal exchange rate connecting their currencies. Without capital mobility, the countries can still use their monetary policies to offset expenditure-changing shocks, but they have no way to offset expenditure-switching shocks. Mundell pointed out, however, that a switch of expenditure to Eastern goods would create an excess demand for Eastern labour and an excess supply of Western labour. If, then, labour were perfectly mobile between the two countries, unemployed Western workers would move to the East and thus restore internal balance in both countries.

In effect, labour migration would enlarge the Eastern economy and shrink the Western economy to accommodate the switch in demand from Western to Eastern goods. Furthermore, it would eliminate the imbalance in East-West trade, restoring external balance. When workers migrate from West to East, their demand for Western goods is *externalised*; it becomes part of Eastern import demand rather than part of Western domestic demand, raising Eastern imports. Conversely, the migrants' demand for Eastern goods is *internalised*; it becomes part of Eastern domestic demand, rather than part of Western import demand, reducing Western imports.

Accordingly, Mundell concluded that perfect labour mobil-

ity would obviate the need for exchange-rate flexibility and that the domain of labour mobility should, therefore, be used to define an optimum currency area – the set of countries that can safely adopt irrevocably fixed exchange rates connecting their national currencies.

Mundell's analysis had enormous influence on subsequent research, long after economists had ceased to

employ the strong assumptions on which it was based. It also influenced the European debate about the advisability of monetary union. It drew attention, for example, to the equilibrating role of labour mobility and thus the need for more of it within and between EU countries, if they were to forgo exchange-rate flexibility.

Unfortunately, Mundell's analysis led us to pay too much attention to expenditure-switching shocks. For example, in a 1969 paper I argued that industrial diversification would contribute importantly to the optimality of a monetary union, because it would reduce the macroeconomic effects of industry-specific shocks, which are the shocks featured in OCA theory as posing the gravest threat to the viability of a monetary union. In more recent debate, Paul Krugman and others have warned that a monetary union may become less optimal after it is formed, because it may promote inter-industry trade, thus reducing domestic diversification and leaving the members more vulnerable to industry-specific shocks. Others have argued, however, that a monetary union may become more optimal after it is formed, because it may promote intra-industry trade and thereby avoid any reduction in domestic diversification.

We should have paid far more attention to another issue – how a full-fledged monetary union can cope with expenditure-changing shocks. Mundell swept this issue aside by assuming that each country in a currency union can continue to pursue an independent monetary policy. With high capital mobility, however, there can be only one monetary policy in a currency union – whether it is the national monetary policy of a leading country in a simple currency union, or the monetary policy of a supranational institution like the European Central Bank (ECB) in a full-fledged monetary union.

There is, however, a major difference between these two regimes. It derives from the difference between their *policy domains*. Consider a stylised representation of the European Monetary System (EMS), where the monetary policy of the German Bundesbank was mimicked by the central banks of the other EMS countries, and suppose (as was true) that the Bundesbank sought to maintain price

## Mundell's analysis had enormous influence on subsequent research

stability in Germany without concern for the effects on other EMS countries. Under this leader-follower regime, an expenditure-raising shock in Germany would cause the Bundesbank to tighten its monetary policy by an amount that would necessarily depress economic activity in other EMS countries.

The reason for this is simple. An expenditure-raising shock in Germany would raise aggregate demand in Germany by more than it would raise aggregate demand elsewhere in the EMS. Therefore, a tightening of Bundesbank policy strong enough to stabilise aggregate demand in Germany would, through its impact on its partners' monetary policies, actually reduce aggregate demand elsewhere in the EMS. Conversely, an expenditure-raising shock in another EMS country would cause the Bundesbank to tighten its monetary policy by an amount that would not be enough to stabilise aggregate demand in that other country. The reasoning involved is perfectly symmetrical.

Consider instead a stylised representation of the European monetary union, where the ECB pursues a monetary policy aimed at maintaining price stability in the whole euro zone, and suppose that it does so by trying to stabilise aggregate demand in the whole euro zone. Under this supranational regime, an expenditure-raising shock in any single euro zone country would cause the ECB to tighten its monetary policy by an amount insufficient to stabilise aggregate demand in that single country, but by too much to stabilise aggregate demand elsewhere in the euro zone. The joint effects of the shock and the policy response would thus resemble the effects of an expenditure-switching shock in Mundell's framework – the one that raised Eastern aggregate demand and reduced Western aggregate demand. To put the same point differently, the one-sized monetary policy of a supranational central bank can never fit all of its members' needs perfectly when they experience different expenditure-changing shocks.

Nevertheless, a supranational regime is manifestly superior to a leader-follower regime when viewed from the followers' standpoint, because the followers experience smaller changes in output, employment and prices than those that they would experience under a leader-follower regime. This is not because the supranational regime gives greater weight to the followers' policy preferences; different policy preferences play no role in my story. It is because a supranational central bank has a union-wide policy domain, whereas the Bundesbank, or any other national leader, necessarily has a national policy domain.

What are the chief implications of my story? Let me mention three.

First, the main cost of monetary union may not derive, as we once thought, from forgoing reliance on exchange rate changes to offset expenditure-switching shocks. It may instead derive from forgoing reliance on national monetary

policies to offset expenditure-changing shocks, wherever they originate and partaking instead of a monetary policy that can never be perfectly optimal for any single member.

Second, economists may have been wrong to do what many of us tried to do during the run-up to monetary union – to compare the characteristics of shocks besetting sub-national regions in a country such as the United States with the characteristics of shocks besetting individual European countries. The problem, of course, is that sub-national regions in a single country necessarily partake of their country's single monetary policy. That policy presumably reduces the amplitude of the expenditure change in the region beset by an expenditure-changing shock, but it can be expected to reverse the sign of the induced expenditure change in every other region. If, then, two regions' expenditure-changing shocks were truly uncorrelated, the calculated correlation obtained by conventional methods could be strongly negative. If, instead, the regions' shocks were perfectly correlated, the calculated correlation could be very low.

It follows, then, that comparisons made in the early 1990s, which showed that European countries were further from being an optimum currency area than were US regions, may have been overly generous to those European countries, because the true correlation between the US regional shocks may have been even higher than the calculated correlations. To obtain the true correlations for the US regions, it would have been necessary to disentangle the shocks besetting those regions from the effects of the monetary policy responses of the Federal Reserve System. No one sought to do that, because OCA theory had paid no attention to the change in the domain of monetary policy that occurs when countries form a full-fledged monetary union.

The third implication pertains to the need to use national fiscal policies to cope with the imperfect fit between the single monetary policy of monetary union and the needs of its individual members. At one time, I believed that a monetary union should be accompanied by some sort of fiscal union. Indeed, my 1969 paper on OCA theory said so and made two related points.

First, the income-based federal tax system in the United States cushions the effects of expenditure-switching shocks, because it leads automatically to fiscal transfers from households and firms in prosperous regions to households in firms in depressed regions. Second, this method of cushioning the effects of shocks is clearly superior to either built-in or discretionary stabilisation at the regional level. Interregional transfers via the federal fiscal system are not likely to have large effects on the fiscal stance of the federal government. Therefore, they are not likely to cause significant changes in stocks of government debt. If instead regions or states had to conduct contra-cyclical fiscal policies, those in depressed regions would have to

## The key difference is between monetary domains

borrow and issue debt, **and** they might find it hard to do that when faced with long-lasting shocks.

Today, moreover, the case for a fiscal union would be reinforced by concerns about the expenditure-reducing effects of an increase in government debt. If households believe that an increase of debt today must inevitably lead to an increase of taxes *tomorrow* to service the increase of debt, they may choose to save more today and thus cut back their spending today. If they do that, of course, they will thereby offset some or all of the income-stabilising impact of a state government's deficit spending.

A fiscal union is not essential for the effective functioning of a monetary union. It can be helpful, however, in compensating for the imperfect fit of the union's single monetary policy. It can do that without confronting the constraints faced by the members' national governments when they attempt to use fiscal policy to stabilise aggregate demand.

In the euro zone, of course, the responsibility for fiscal policy will reside with the national governments for the foreseeable future, but they must conform to the fiscal constraints built into the Maastricht Treaty – the 3% limit on public deficits and the 60% limit on government debt that trigger the excessive deficit procedure. I have never been strongly impressed with the arguments made on behalf of those fiscal constraints – that they are required to underpin the integrity of the euro and the operational independence of the ECB. In fact, I have come to believe that the rigidity of those constraints may have the perverse effect of undermining political support for the euro.

The political and economic rationale for the Stability and Growth Pact is understandable, *given* the fiscal constraints contained in the Maastricht Treaty. At times like these, when governments face large expenditure-reducing shocks, they need the latitude to run budget deficits. The Stability and Growth Pact is aimed at giving them that latitude by committing them to run “near to balance” budgets over the long run. But this is surely the wrong time for them to pursue that goal even if granted additional time in which to reach it.

Governments that have already adhered to the original timetable are understandably annoyed by those that have fallen behind. They have nevertheless to ask themselves how their own countries' economies would be affected if the laggards were forced to catch up under present circumstances. Continuing stagnation or outright deflation in one or more of the three big countries could have very large adverse effects on the smaller countries.

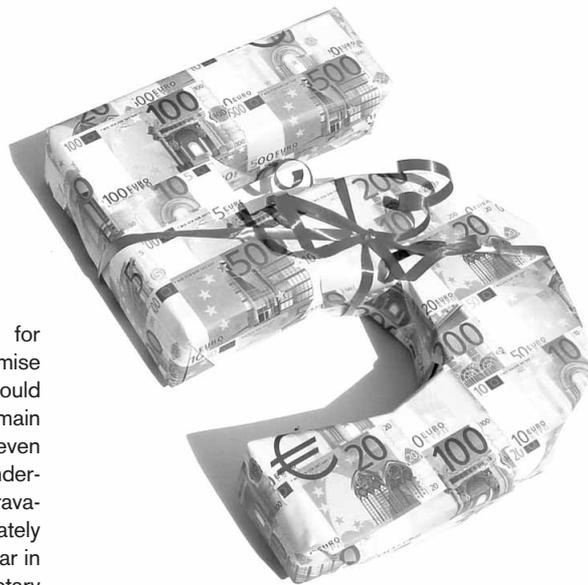
We come now to the impact of monetary union on economic integration in the euro zone. It was widely and rightly agreed that monetary union would foster the integration of European financial markets. By banishing exchange rate risk completely, it would enhance the substitutability of

the securities issued by the governments and firms of the individual euro zone countries. It would also relax conventional and prudential restrictions on cross-border holdings of financial assets. Investors that have to limit their holdings of foreign-currency assets can now invest freely in euro-denominated assets, regardless of the country in which they originate. The results have been impressive, especially in bond markets. The broadening and deepening of those markets has led to a large increase in bond issues, not only by euro zone borrowers but also by foreign borrowers.

The initial depreciation of the euro, however, suggested that the increase in the supply of euro-denominated debt exceeded the increase in demand resulting from the introduction of the euro. Portfolio balance models predict that a change in relative supplies of financial assets denominated in different currencies is offset endogenously by a change in the exchange rate connecting the relevant currencies. An excess supply of euro-denominated debt would induce a depreciation of the euro, which would serve to reduce the dollar value of the stock of euro-denominated debt relative to the dollar values of all other stocks of debt. It would thereby eliminate the excess supply of euro-denominated debt. This is indeed the most plausible explanation of the events that followed the introduction of the euro.

Expectations regarding the impact of monetary union on the integration of goods markets were somewhat more modest. Some economists, especially Barry Eichengreen, argued that monetary union would shield the single market from pressures for covert protection – pressures like those that emerged after the EMS crisis of 1992-93, when there was a large increase of exports from countries such as Italy, whose currencies had depreciated sharply. Furthermore, many economists argued that the introduction of the euro would promote price transparency and thereby reduce cross-country differences in various goods prices. But no one expected monetary union to lead to a very large increase in trade inside the euro zone, because few economists believed that exchange rate risk is a significant barrier to trade.

Three years ago, however, Andrew Rose published a paper showing that the members of a currency union trade much more with each other than do other country pairs, and his results have been confirmed by others. Like many economists, I was at first critical of Rose's results, partly because they pertained mainly to currency unions involving very small developing countries. Rose himself warned that the euro zone countries might not experience a comparable increase in their bilateral trade. But subsequent research suggests that monetary union has substantially increased trade within the euro zone. All of these results, moreover, are thoroughly consistent with another finding – that international trade tends to be much smaller than inter-regional trade. In other words, national borders matter; and the existence of national currencies may be an important reason for that.



The most extravagant claim for monetary union was the promise – or threat – that the euro would come to rival the dollar, the main international currency, and even displace it eventually. To understand why this claim was extravagant, we have to look separately at the various roles of the dollar in the international monetary system. It is especially important to distinguish between those roles that can change incrementally, as the result of actions taken individually by governments or private participants in international financial markets, and those roles that can only change discretely, as a result of actions taken collectively or, at least, simultaneously.

There is nothing to prevent an individual central bank from investing some of its foreign exchange reserves in euro-denominated assets. Some Asian central banks appear to have done that recently. They have not been switching massively from dollars to euros, but they have apparently been buying euros with some of their newly acquired reserves. Nevertheless, the most recently available data from the International Monetary Fund show little change in the currency composition of total reserve holdings.

In 1998, industrial countries held 67% of their foreign exchange reserves in dollar assets and 17% in deutschemark and other euro zone currencies (the so-called legacy currencies). Three years later, the dollar holdings of those countries had risen to 75% of their foreign exchange reserves, and their euro holdings were actually smaller than their previous holdings of the legacy currencies, amounting to only 10% of their foreign exchange reserves.

It can be objected, however, that this shift was a simple arithmetic side effect of monetary union. The introduction of the euro did not merely involve the conversion of deutschemark holdings into euro holdings; it also involved the exclusion thereafter of those euro holdings from the currency reserves of the central banks of the euro system. The Bank of France treated its deutschemark holdings as reserve assets, but it cannot now count its euro holdings as reserve assets. No central bank can hold its own currency as a reserve asset.

It is more useful to look at the currency composition of the developing countries' reserves, as they can count their euro holdings as reserves and are indeed freer to optimise the composition of their currency reserves than are the major industrial countries.

In 1998, developing countries held 65% of their foreign exchange reserves in dollar assets and 13% in

## **The US federal tax system cushions the effects of expenditure-switching shocks**

deutschemarks and other legacy currencies. By 2001, their dollar holdings had fallen by only one percentage point, and their euro holdings exceeded their previous holdings of legacy currencies by only two percentage points. Although there were additional changes in 2002, I have been told that they were not large enough to alter the figures significantly.

It is equally easy for individual investors to buy euro-denominated assets and for individual borrowers, including governments, to issue euro-denominated debt. Some economists, like Richard Portes and H el ene Rey, have suggested that this increase in bond market activity could induce a major change in the functioning of foreign exchange markets. By causing a large increase of trading in euros, it could reduce the cost of that trading and lead to much wider use of the euro in the foreign exchange market. It might even lead to the use of the euro as a so-called vehicle currency.

What is a vehicle currency? Holders of small countries' currencies cannot readily move directly from one such currency to another – from, say, Mexican pesos to Korean won. As those countries' foreign exchange markets deal primarily in one foreign currency, usually the dollar, someone seeking to sell pesos for won does that by selling pesos for dollars and then selling dollars for won. That is the way in which the dollar serves as a vehicle currency. The euro could therefore replace it if greater use of the euro, due to an increase of trading in euro-denominated assets, made trading in euros much cheaper. Thus far, however, the introduction of the euro has not led to any significant fall in the cost of foreign exchange trading. In fact, the cost of dollar-euro trading rose initially, compared with the previous cost of dollar-deutschemark trading.

It is important to note, moreover, that something more must happen before the euro can become a widely used vehicle currency. Foreign exchange dealers must be induced to establish new currency markets – markets in which the peso and won and traded directly for euros – and that cannot be done unless there is a sufficient volume of euro zone trade with Mexico and Korea. Otherwise, it will be cheaper to use the dollar, not merely when moving between the peso and won, but also when moving between the peso or won and the euro. Bear in mind, moreover, that no single foreign exchange dealer can create a new currency market. Several dealers must decide simultaneously that it makes sense to do so. That is because each dealer relies on other dealers to engage in the “wholesale” currency trading required for each dealer individually to manage exchange rate exposure.

## Central banks have not been switching massively from dollars to euros

There have been some interesting changes in foreign exchange markets. In Hungary, for example, bilateral forint-euro trading appears to account for a larger fraction of total currency trading than did bilateral forint-deutschemark trading before the advent of the euro; and it also accounts for a larger share than does forint-dollar trading. In the Czech Republic, the share of the euro in foreign exchange trading is not much larger than the previous share of the deutschemark, but it is much larger than the share of the dollar. In the Russian market, however, the dollar remains by far the most important currency, due in part to the dominant role of oil in Russia's foreign trade. Like many other primary products traded on organised commodity markets, oil is priced in dollars. In Asia, including Japan, the dollar is still dominant; and that is also true in Latin America, although the market share of the euro is somewhat larger than the previous share of the deutschemark.

In short, there is little evidence thus far of a significant change in the functioning of foreign exchange markets or, for that matter, the functioning of international commodity markets.

I cannot conclude, however, without a more general comment.

The European Central Bank has been heavily criticised for paying too much attention to monetary aggregates, for adopting an unduly tough definition of price stability and for being too slow to make interest rate changes. I agree with the critics. I am especially worried about the definition of price stability adopted by the ECB – an inflation rate no higher than 2% a year. It does not allow sufficiently for the strong probability that the fast-growing euro zone economies will experience more inflation than the more mature economies.

At one time, most economists believed that the adoption of a single currency and single monetary policy would greatly reduce and even eliminate persistent differences in national inflation rates. We were wrong. And the differences will get bigger when the accession countries join the euro zone.

Nevertheless, the ECB deserves admiration. In five short years, it has created an institutional culture and has made the euro zone into an operational concept, not a mere statistical construct. Those achievements have exceeded expectation.

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This article is an edited version of his Queen's Anniversary Prize Lecture delivered at the LSE on 18 February.

### References & further reading

- R.A. Mundell, "A Theory of Optimum Currency Areas", *American Economic Review* 51, 1961.
- P.B. Kenen, "The Theory of Optimum Currency Areas: An Eclectic View", in Mundell and Swoboda (eds), *Monetary Problems of the International Economy*, Chicago University Press, 1969.
- P.B. Kenen, "Currency Unions and Policy Domains", in Andrews, Henning and Pauly (eds), *Governing the World's Money*, Cornell University Press, 2002.
- P. Krugman, "Lessons of Massachusetts", in Torres and Giavazzi (eds), *Adjustment and Growth in the European Monetary Union*, Cambridge University Press, 1993.
- J.A. Frankel and A.K. Rose, "The Endogeneity of the Optimum Currency Area Criteria", *Economic Journal* 108, 1998.
- T. Bayoumi and B. Eichengreen, "Shocking Aspects of European Monetary Integration", in Torres and Giavazzi (eds), *Adjustment and Growth in the European Monetary Union*.
- R.N. McCauley, "The Euro and the Dollar", *Essays in International Finance* 205, International Finance Section, Princeton University, 1997.
- B. Eichengreen, "Does Mercosur Need a Single Currency?", Working Paper 6821, National Bureau of Economic Research, 1998.
- A.K. Rose, "One Money, One Market: The Effect of Common Currencies on Trade", *Economic Policy* 30, 2000.
- A. Micco, E. Stein and G. Ordoñez, "The Currency Union Effect on Trade: Early Evidence from the European Union", Discussion Paper, Inter-American Development Bank.
- R. Portes and H. Rey, "The Emergence of the Euro as an International Currency", *Economic Policy* 26, 1998.

