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**Costs and Benefits  
of  
European Monetary Unification**

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Economists like to think that their job is to offer a balanced assessment of policy options. Informed by this analysis, policymakers then select the option with the highest margin of benefits over costs. Europe's rapid progress toward monetary union does not fit this mold. With all due respect to the Delors Report, European monetary union is an example of policy ahead of analysis. The European Community has set its sights on monetary unification -- a common currency and a European central bank -- within the decade. Economists are scrambling to keep up. They are still seeking a framework appropriate for analyzing the costs and benefits of this option.

This paper sketches such a framework. Its first three sections consider the benefits and costs of a common currency. While the framework identifies the issues at stake, the evidence does not deliver a strong presumption in favor of any one alternative. Since European policymakers have concluded nevertheless that a common currency is the way to go, I ask whether the European Community is the relevant region over which to establish one. Here too the evidence is far from clearcut. Once again, however, European policymakers have concluded that the answer to the question is yes. Given that Europe is moving toward immutably fixed exchange rates and, ultimately, a common currency, in the final section of the paper I ask whether additional institutional innovations are needed to support the smooth operation of the currency union.

#### 1. Benefits of Currency Unification

A common currency is only one of several international monetary arrangements that countries may adopt. The others all involve distinct national currencies. These national currencies may trade at prices that fluctuate freely or that are pegged by central banks. Alternatively, the relative prices of

national currencies may be allowed to fluctuate but central banks may intervene to limit their movement. These are the three options of freely floating exchange rates, fixed exchange rates, and managed floating.

There exists remarkably little systematic evidence on the comparative behavior of economic variables under these arrangements. In part this reflects the difficulty of identifying episodes in which exchange rates have really been fixed or have really been permitted to float freely. The period offering the cleanest comparison is the two decades between World Wars I and II. Between 1921 and 1925, exchange rates floated freely. (The U.S. dollar was pegged to gold, but other currencies were permitted to fluctuate against it. There was negligible official intervention in the foreign exchange market.) Between 1927 and 1931, exchange rates were fixed. (In contrast to the European monetary system in the 1980s, there were no "realignments" by industrial countries and few capital controls.) Between 1932 and 1936, exchange rates were once again allowed to float, but governments intervened in the foreign exchange market to limit their fluctuation.

European and American exchange rates were about 50 per cent more variable under free floating in the first half of the 1920s than under managed floating in the first half of the 1930s. They varied negligibly between 1927 and 1931. What is striking is that the variability of real exchange rates increased with the variability of nominal rates. Real exchange rates (domestic wholesale prices relative to foreign wholesale prices converted into domestic currency by the exchange rate) were 20 per cent more variable under free floating in the first half of the 'twenties than under managed floating in the first half of the 'thirties. They were twice as variable under managed floating as during the fixed rate period 1927-31.

Evidently, increasingly the variability of exchange rates also increases the variability of relative prices. This greater variability of prices due to the fluctuation of national currencies is likely to discourage international trade and, more generally, to disrupt the operation of the price mechanism. This supports the assertion that, by fixing their exchange rates, EC members can moderate disruptive real exchange rate swings and promote trade within the Community.

In addition, proponents of the policy argue, fixing exchange rates promotes financial integration. For many years, real interest rates varied enormously across Europe. Capital failed to flow from nations where real interest rates were low to other parts of the EC where real interest rates and the rate of return on investment were high in volumes sufficient to eliminate interest differentials.

The fact of real interest rate differentials is indisputable. The question is whether exchange rate uncertainty is responsible. Here again interwar evidence is illuminating. For 5 European countries and the U.S., real interest differentials were considerably larger during the free float of 1922-26 and the managed float of 1932-36 than during the intervening period of fixed exchange rates. This is consistent with the presumption that fixed rates promote financial integration. But there is an imperfect correspondence between the degree of exchange rate variability and the magnitude of real interest differentials. The absolute value of real interest differentials was nearly three times times as large under managed floating in the 'thirties as under free floating in the 'twenties. It does not follow that movement toward more stable exchange rates automatically increases financial integration.

To understand why, the real interest differential can be decomposed into

three components: the covered interest differential, the exchange risk premium, and expected real depreciation. The covered interest differential measures the extent to which capital controls prevent nominal interest rates at home and abroad, adjusted for the forward discount on foreign exchange, from being equalized, as they would be in a perfectly arbitrated market. (In addition to capital controls, transactions costs, information costs, default risk and risk of future capital controls can have this effect.) The exchange risk premium (the forward discount minus the expected rate of depreciation of the foreign currency) measures the extent to which incomplete commodity-market integration leads investors to demand compensation for the risks of exchange rate changes. Expected real exchange rate depreciation measures the extent to which investors demand compensation for higher inflation not offset by currency depreciation.

Real interest rate differentials were so large under managed floating in the 1930s, it turns out, because of the first of these 3 components. Deviations from covered interest parity were considerably larger in the early 'thirties than in the early 'twenties. This reflects the pervasiveness of capital controls in the 1930s. In other words, stabilizing exchange rates does not promote capital market integration if rates are stabilized through the use of capital controls. This is the same lesson derived from the experience with the European Monetary System in the 1980s.

In contrast, the magnitude of the exchange risk premium increased with the variability of nominal exchange rates. That premium was three times as large under the free float of the early 'twenties as under the managed float of the early 'thirties, and nearly four times as large under managed floating as under the fixed rates of 1927-31. This is clear evidence that the compensation investors demand for the risk of exchange rate changes discourages the

integration of national capital markets.

Similarly, the level and variability of expected real depreciation is an increasing function of nominal exchange rate variability. We saw above that real exchange rates are more variable when nominal exchange rates are allowed to float -- in other words, that exchange rate variability discourages commodity market integration. Since the returns on foreign investment are denominated in terms of foreign goods, this also discourages financial integration.

Thus, there is support in the interwar record for the notion that stable exchange rates promote commodity- and financial-market integration. Other historical episodes point to the same conclusion. The 19th century gold standard encouraged a remarkable degree of financial integration. Between 1880 and 1913, international capital flows (measured as the capital account balances of 9 industrial and rapidly industrializing countries, expressed as a per cent of GNP) were more than double the levels of recent decades, and more than triple interwar levels. Similarly, the pegged exchange rates of the Bretton Woods period encouraged a remarkable degree of commodity market integration. Between 1953 and 1973, international trade expanded nearly twice as rapidly as global GNP.

These two trends did not always go hand in hand, however. Before World War I, though financial flows were uncontrolled, international trade was restricted by tariff barriers. After World War II, though tariffs were rapidly reduced, controls on financial flows were retained. The logical inference is that exchange rate stability was a necessary but not sufficient condition for both commodity- and financial-market integration.

If fixed exchange rates have advantages over variable exchange rates, does a common currency have advantages over fixed rates? One way to think about this

is to note that, though real interest differentials diminish with the move to fixed rates, they do not disappear. The covered interest differential fell by more than 75 per cent with the move from free floating to fixed rates in the 1920s. But a significant covered interest differential remained, reflecting fears that governments might have to impose capital controls in the future to defend their pegged exchange rates. While the exchange risk premium fell by 90 per cent, a nonnegligible premium remained, reflecting the possibility that countries might be forced to devalue sometime in the future.

The only way to decisively remove these impediments to financial market integration is by establishing a common currency. This does not mean that a common currency is necessarily desirable, however. The benefits of currency unification should be weighed against the costs.

## 2. Costs of Currency Unification: Loss of Monetary Autonomy

Fixed exchange rates, perfect capital mobility and monetary autonomy cannot be attained simultaneously. To enjoy any two, the third must be sacrificed. EMS members have decided to fix their exchange rates and to eliminate capital controls. The principal cost, therefore, is loss of monetary independence.

Members of a European currency union will no more be able to run an independent monetary policy than can California run a monetary policy independent from that of the rest of the United States. This is not an abstract problem with which Europe will have to grapple sometime in the future. Though it does not yet possess a common currency or a single central bank, Europe has already moved a considerable distance down this path. With the pegged exchange rates of the EMS and the removal of remaining capital controls, individual central banks already have extremely limited room to maneuver.

Some argue that it is still possible for one EMS member to run more expansionary monetary policies than the others; if it has persistently higher inflation than the others, after a time it can simply realign its currency. This argument is incorrect. With the removal of capital controls, nothing prevents speculators from dumping a currency today in anticipation of a realignment tomorrow and forcing that realignment to occur today. (In the past, capital controls added to the cost of such speculative transactions and gave central banks some breathing space.) If an individual central bank attempts to reduce domestic interest rates relative to those prevailing abroad, capital will flow out, forcing an immediate devaluation, unless the policy is reversed.

EMS members have already sacrificed their monetary autonomy. But is this sacrifice significant? An independent monetary policy serves two purposes. First, printing money is a source of government revenue. Until the mid-1980s, the inflation tax -- also known as seigniorage -- was the source of a significant share of government revenues (at least 5 per cent of the total) in Greece, Italy, Portugal and Spain. But with the subsequent decline of inflation, seigniorage has fallen to lower levels. Indeed, the desire to renounce the inflation tax was one of the central motives for these countries to join the EMS. As the internationalization of European financial services forces governments, in the interest of competitiveness, to eliminate regulations that have compelled their domestic financial institutions to invest in government debt, scope for seigniorage will decline still further.

The second function of an independent monetary policy is macroeconomic stabilization. Monetary expansion and currency depreciation are used to stimulate aggregate demand in response to a cyclical downturn. Individual European countries will no longer be able to respond to recessionary pressures

in this way.

Willingness to sacrifice this instrument may reflect a belief that it has lost its effectiveness. This belief is not grounded in evidence. The rise in British unemployment after 1979 clearly reflects the powerful macroeconomic effects of the reduction in the rate of monetary growth following Margaret Thatcher's accession to power. Recent studies of the United States conclude that decisions by the Federal Reserve System to restrict the availability of money and credit have a powerful and surprisingly long-lived impact on output and employment. Recent work on the Nordic EFTA countries concludes that exchange rate changes still have powerful macroeconomic effects.

Monetary independence may also be valuable when the stability of a nation's financial system is threatened. The Federal Reserve was not prevented from injecting liquidity into the U.S. financial system in the wake of the October 1987 crash by the need to defend a fixed exchange rate. Nor does an exchange rate constraint prevent it from acting as lender of last resort on behalf of savings and loan institutions in distress. If these events had occurred instead in, say, Belgium, one wonders whether the Belgian authorities, committed to stabilizing their currency against the DM, would have had the same freedom of action.

### 3. Costs of Currency Unification: Loss of Fiscal Autonomy

Whether membership in a currency union also eliminates the freedom to pursue an independent fiscal policy is a more controversial question. The removal of capital controls, the growing mobility of labor and the elimination of trade barriers within Europe will intensify pressures for fiscal convergence. It will become increasingly difficult for individual nations to levy taxes

significantly in excess of those prevailing elsewhere in Europe. Footloose factors of production will be increasingly able to flee high tax jurisdictions.

These pressures should not be exaggerated. In the United States, where capital and labor are more mobile than in Europe and where there exist no internal barriers to trade, tax rates still vary considerably across states. They do so for two reasons. First, labor, though mobile, is not perfectly mobile. Massachusetts residents do not all move to New Hampshire in response to the former's higher income taxes. Californians, with a taste for their state's culture and climate, do not all relocate to Nevada in response to tax differentials. Second, states can compensate residents for higher taxes with higher spending on public services for which they have a taste.

This is not to deny that there is pressure for fiscal convergence within the United States. Some Massachusetts residents do in fact move to New Hampshire in response to the latter's absence of a state income tax. This forces neighboring states to limit their taxation of income. Average tax rates vary about half as much across U.S. states as across EC members. Still, some autonomy over tax rates remains. And insofar as labor is less mobile in Europe than in the U.S., due to the existence of distinct European languages and distinct European cultures, the pressure for fiscal convergence is likely to be attenuated.

Joining a currency and customs union may also limit member states' ability to run budget deficits. Countries with their own national currencies can use the central bank's printing press to finance budget deficits. Jurisdictions without them must raise taxes, now or in the future. In the U.S., individual states, which cannot print money, have limited ability to borrow to finance budget deficits. The interest rates they are charged rise rapidly as they

borrow. For example, in response to a projected budget deficit of \$710 million for the fiscal year ending June 30, 1990, Massachusetts general obligation bonds were downgraded by the rating services from AA-plus to Baa. The interest rate Massachusetts is forced to pay has risen accordingly. These rising rates reflect default risk -- worries that mounting fiscal troubles may force the state to temporarily suspend service of its debts or to reschedule interest payments on terms unfavorable to its creditors.

Will the same pressures arise in Europe? Yes, but to an extent that is unclear. Massachusetts finds it difficult to borrow to finance budget deficits now because investors are skeptical of its ability to raise the taxes needed in the future to service the additional debt. If Massachusetts raises tax rates to the extent required, part of its tax base will flee to neighboring states. The same pressures are likely to prevail in Europe, but to a lesser extent. Labor is less mobile in Europe than in the U.S. Owing to the prevalence of distinct cultural heritages, this is likely to remain the case for some time. Since factors of production will remain less mobile and nations will retain more autonomy over the tax rates they levy, EC members will have somewhat more ability than their North American counterparts to vary future taxes and hence more ability to borrow.

Working in the other direction is the fact that several EC members already possess high levels of public debt. Belgium, Denmark, Ireland and Italy all currently possess public debts that approach or exceed 100 per cent of GNP. These are heavy debt burdens by Latin American standards. In a recession, when GNP falls and the budget gap widens, these debt ratios may rise explosively. Investors will have reason to wonder where these governments will find the revenues to service their additional debts. This suggests a scenario in which

countries with small public debts -- France, Germany and the U.K., for example -- will retain considerable fiscal autonomy as a result of Europe's relatively low levels of factor mobility, while countries with high public debts may have very limited ability to borrow.

#### 4. Is Europe an Optimum Currency Area?

The point of this discussion is that currency unification has both costs and benefits. The benefits are the impetus for integration of commodity and financial markets and the associated efficiency gains. The costs are limits on the ability of individual states to use monetary and fiscal policies. It is not obvious a priori that the benefits exceed the costs.

Proponents of European integration respond with two counterarguments. First, monetary and fiscal independence are of value only when macroeconomic disturbances affect one member of the monetary union but not the others. If all EMS members experience a recession simultaneously, all can expand their money supplies simultaneously. None will necessarily experience a deterioration in its exchange rate or its balance of payments. All EMS members can respond to their common recession by simultaneously running budget deficits and by simultaneously increasing taxes at some future date to service the additional debt. None will necessarily suffer capital flight or a brain drain.

Thus, if shocks affect all members of the union symmetrically, they can respond symmetrically, and their loss of policy autonomy is irrelevant. In this case, the benefits of monetary union are certain to exceed the costs. If, on the other hand, shocks are asymmetric, then the loss of policy autonomy matters. The costs of monetary union may exceed the benefits.

One can gauge the symmetry of shocks by looking at real exchange rates. If

two countries are affected symmetrically by a disturbance, the real exchange rate between them (the relative price of the baskets of goods their residents produce and consume) will be stable. If the shock is asymmetrical, this will be reflected in real exchange rate movements.

But how large must a real exchange rate movement be before it indicates that asymmetrical shocks are of sufficient magnitude to justify an independent policy response? One way to think about this question is by comparing real exchange rate movements within Europe with real exchange rate movements in other continental economies that are already currency and customs unions. A recent Bank of Canada study showed that real exchange rates between a number of Canadian provinces were more variable than real exchange rates between Germany, France, and Italy. The implication is that if Canada has concluded after a century of experience that the benefits of currency unification exceed the costs, then so should Europe.

It is not surprising, when one thinks about it, that shocks affecting Alberta and Ontario are less symmetric than the shocks affecting France and Germany. Alberta produces mainly primary products, while Ottawa produces mainly manufactures and services. France and Germany, in contrast, share many of the same industries. A more evenhanded comparison would be between all 10 EC members and all 4 regions of the United States (North Central, North East, South and West). When one undertakes this comparison, one finds that in the 1980s real exchange rates among the 4 U.S. regions were only about one quarter as variable as those among the 10 EC members. Real exchange rate variability is greatest at the "periphery" of the EC, in Greece, Ireland, Italy, Portugal and Spain. (The real exchange rate between the U.K. and Germany has also been highly variable, but that presumably reflects the fact that sterling has

remained outside the EMS.) Thus, asymmetric shocks remain more prevalent in Europe than in the United States.

As the case of the U.K. suggests, part of the explanation for the U.S.-European difference may be the tendency of nominal exchange rate variability to exacerbate real exchange rate variability, as described above. Interwar evidence suggests reducing the variability of European real exchange rates by 50 per cent to take this effect into account. But we would still conclude that asymmetric shocks are more prevalent within Europe than within the U.S. In other words, Europe is less of an optimum currency area than the United States.

These results imply that country-specific shocks are likely to remain a significant problem for the "Southern tier" of the European Community. (For these purposes, Ireland is a member of the "South" along with Portugal, Spain, Italy and Greece.) These are the countries for which the sacrifice of monetary autonomy is likely to involve significant costs. Since these are also countries with relatively high public debts, monetary unification may also involve some sacrifice of fiscal autonomy, exacerbating those costs.

##### 5. The Need for Institutional Innovation

What do these considerations imply for Stage 2 of the Delors Plan, the world of fixed exchange rates and perfect capital mobility but without a Euro-Fed or a common currency? They imply the need for arrangements to compensate for undesirable effects of the loss of monetary and fiscal autonomy. They imply, for example, the need for fiscal federalism. In the United States, when one state suffers a recession, resources are transferred to it from other states automatically via the federal budget. The typical state's tax payments to Washington, D.C. decline by 30 cents for every dollar fall in state income.

Transfers from the federal government, mainly in the form of unemployment insurance, rise by 10 cents for every dollar fall in state income. In effect, the state government is relieved of the need to borrow 40 per cent of the fall in state GNP. Domestic spending is stabilized. The decline in domestic living standards is attenuated.

The EC budget currently amounts to only a couple of percentage points of European GNP. Hence there do not exist the institutions necessary to redistribute resources from one European nation to another on the scale at which this occurs in the United States.

Some observers object that fiscal federalism is unnecessary or undesirable. Given Europe's limited factor mobility, individual European nations retain more ability to borrow than do American states. But we have seen that this argument is unlikely to apply to those European nations in which debt burdens are already high. Moreover, factor mobility is a two-edged sword. The inability of footloose factors of production to flee in anticipation of higher future taxes may provide more scope for borrowing. But it also increases the amount of borrowing required. When a U.S. state or Canadian province suffers a recession, workers pack up their belongings and move to another state or province. Unemployed Michigan autoworkers move to the oil fields of Texas when energy prices rise. Unemployed Texans move to Massachusetts when energy prices fall and the New England construction industry booms. This is one way that regional pockets of unemployment are dealt with in the United States. It minimizes the need for changes in regional fiscal policies in response to asymmetric shocks. This source of relief is sure to operate less powerfully in Europe.

Other observers warn that fiscal federalism is subject to manipulation by domestic interest groups. It creates what economists refer to as a "moral

hazard" problem. If Germany and France were to agree to a federal fiscal system in which Germany transfers budgetary resources to France when French unemployment is high, and vice versa, French unions, realizing that some of the costs of unemployment maintenance now fall on foreigners, will increase their wage demands. Government may have an incentive to go along.

This is not an argument against fiscal federalism per se. It is an argument for the rational design of fiscal institutions. Fiscal federalism does not appear to give rise to serious problems of moral hazard in the United States. Unemployment insurance is experience rated. Most of the transfer among states takes place on the tax side, automatically without the need for a Congressional decision. Thought must be given to the design of federal institutions in Europe that minimize the politicization of budgetary transfers and prevent economic distortions from arising.

In this connection, it is important to distinguish the need for fiscal federalism from the rationale for existing regional programs. Such programs are intended as a response to the development problems of particular regions within the EC. These programs continuously transfer resources into low-income regions to accelerate their economic development. This function is distinct from the need for temporary fiscal transfers as insurance against cyclical disturbances. It is not appropriate to respond to the call for fiscal federalism by proposing to expand the Community's regional programs.

The other institutional innovation needed to support Stage 2 of the Delors Plan is expanded swap facilities for central banks. Faced with a fixed exchange rate and absent the insulation offered by capital controls, individual central banks retain limited ability to respond to domestic banking panics. If the central bank injects liquidity into the banking system, it will rapidly lose

reserves, destabilizing its fixed exchange rate. The central bank may be forced to stand idly by and allow the banking panic run its course. Other European central banks can relax this constraint by providing it ample credit. The EMS already incorporates limited lines of credit through the Very Short Term Financing Facility and the Short Term Monetary Support. And one can imagine that additional credit might be provided on an ad hoc basis, perhaps through the Medium Term Financial Assistance program administered by the EC Council of Ministers. But observers would be more confident that the necessary resources would be made available with dispatch were existing credit lines greatly expanded.

The quid pro quo likely to be demanded by those who contribute the resources is greater Community oversight of national banking regulation, to minimize the danger that any one EMS member will fritter away the members' collective reserves. So far, Community members have resisted turning over to Brussels responsibility for domestic banking regulation. As the Community moves into Stage 2 of the Delors Plan, the time has come to rethink this position.

Are these institutional changes necessary preconditions for a successful transition to Stage 2? Perhaps not. If Europe is lucky, there will be no recession until the transition is complete, or else its incidence will be felt evenly across Europe. Better still, the countries with especially high debt burdens and fragile banking systems will be spared. Then the need for fiscal federalism and extensive financing facilities will be minimized. But there would be less need to cross our fingers and hope for the best if fiscal and regulatory reform better kept pace with monetary integration.

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