Journal of Public Policy

ISSN 0143-814X

VOLUME 24 PART 2 May–August 2004

ARTICLES

CAMBRIDGE
UNIVERSITY PRESS

Cambridge Journals Online
journals.cambridge.org

0143-814X(200408)24:2;1-P

Jnl Publ. Pol., **24**, 2, 147–168
DOI: 10.1017/S0143814X0400008X

Is the Euro Working? The Euro and European Labour Markets[1]

STEPHEN J. SILVIA *International Studies, American University, Washington DC*

ABSTRACT

Now that time has passed since the introduction of the euro as a commercial currency, it is possible to assess many arguments made in the abstract during the 1990s about European monetary union. This article shows that the euro zone still falls short as an optimal currency area in most respects. In particular, it undertakes an empirical analysis of the labour market and finds no progress toward flexibility or integration. These results challenge assertions of 'endogenous currency area' proponents that the euro area would become optimal 'after the fact', and that labour markets would serve as the principal avenue of adjustment. Instead, a 'rigidity trap' has developed in the euro area, consisting of relatively tight monetary policy, forced fiscal consolidation, and a risk of deflation in some economies. These conditions have compounded the difficulties of structural adjustment in European labour markets.

The track record of the euro has been varied since its introduction as a commercial currency in 1999. The actual launch of the euro was successful. Despite the daunting logistical challenge of changing the currency of three hundred million people, the twelve countries participating in the European monetary union (EMU) managed to handle the transition to the euro between 1999 and 2002 smoothly and efficiently. The new clearing system of the European Central Bank (ECB) has worked well. The Economic and Financial Committee and the Economic Policy Committee, which the European Commission established to support the monetary union, have been performing effectively.

Although the users of the euro have certainly not become infatuated with it in the way that Germans did with the deutschmark in 1948, opinion polls have shown that it is at least accepted by an overwhelming majority (European Commission, Press Release IP: 03/1724, 15 December 2003). Consumers complained that merchants – particularly service-sector businesses – used the transition to the new

currency as an opportunity to raise prices, but the aggregate data show no sign of a price spike owing to the adoption of the single currency. Central banks and private traders worldwide have been steadily diversifying their currency holdings by adding euros to their portfolios. A large share of the world's bonds is now denominated in euros. There are even anecdotal reports that the euro is already beginning to rival the U.S. dollar as the 'mattress currency' of central and eastern Europe (*Washington Post*, 14 December 2002).

The value of the euro has fluctuated significantly over its short life in foreign exchange markets. The currency was worth just under $1.20 when introduced on 1 January 1999. The euro then fell by almost thirty per cent, bottoming out at 85 US cents in April 2001. Yet by the end of 2003, the euro had reached a record $1.25. To be sure, such developments come as no surprise to economists. They are consistent with exchange-rate theory and three decades of experience with the U.S. dollar and the Japanese yen. The currencies of large economies with relatively little exposure to foreign markets fluctuate far more widely than those of small, open economies. The recovery of the euro did belie critics who had initially derided it as a weak currency.

At a more fundamental level, however, questions have been mounting regarding the performance of European monetary union. The European economy has not been doing well and there are suspicions that monetary policy may be a contributing factor. Germany has been mired in slow growth for some time, dampening prospects for much of the rest of Europe, yet real interest rates remain relatively high there. At the same time, inflation has been accelerating on the periphery of the new currency area. The European Central Bank has been attempting to strike a balance, but the end result has been a one-size monetary policy that fits none. The latter half of 2003 was particularly unkind to European monetary union. In September, Swedish voters decisively rejected adopting the euro. At the November 25 meeting of EU finance ministers, France and Germany engineered a 'suspension' of the enforcement procedure for nations running excessive fiscal deficits as defined by the Stability and Growth Pact (SGP). Are these problems simply transitory growing pains, or are they symptomatic of more systematic shortcomings with European monetary policy?

An essential part of the answer to these questions can be uncovered in an examination of the soundness of the underlying foundation of European monetary union. Specifically, is the euro zone functioning well as a currency area? This article first introduces the topic of the empirical assessment of European monetary union. Second, it reviews the economic literature on currency areas in order to assess the arguments about the viability of the euro and then synthesizes the literature to

develop a set of metrics to assess the euro area's current level of optimality. Fourthly it undertakes an empirical analysis of the impact of the introduction of the single currency on labour costs. Fifth, it engages in an institutional analysis of the impact and prospects of European monetary union. Sixth, the study suggests an agenda for reform.

The analysis finds that the euro area still falls short of being an optimal currency area. Progress can only be seen in the areas of reciprocal trade and price convergence. Low levels of intra-European migration, and the absence of a system for cross-national fiscal transfer, place the burden of adjustment squarely on wage flexibility. The empirical analysis of the paper reveals, however, that no discernable progress has been made toward labour-market convergence. The absence of sufficient economic integration leaves the national economies within the euro area vulnerable to inadequate adjustment to asymmetrical shocks.

1. The economic literature: optimum and endogenous currency areas

The project of European monetary union sparked a renaissance of research in the economics of currency areas, particularly about optimum currency area (OCA) theory. Optimum currency area theory endeavours to determine when it is economically beneficial to use a single currency within a specified area (for the seminal milestones of OCA theory see: Mundell 1961; McKinnon 1963; Kenen 1969; Tower and Willett 1976; Emerson et al. 1992). OCA theory shows that the adoption of a single currency pays off when an area is highly integrated economically and has the capacity to adjust quickly to an asymmetrical demand shock. An asymmetrical shock occurs when one region within a currency area experiences a significantly different economic development than the others. For example, when the Cold War ended in the early 1990s, the U.S. government heavily reduced aerospace and defence purchases. This produced an asymmetrical shock in southern California, where the contracting sectors were heavily concentrated, sending the region into a sharp economic downturn. An asymmetrical shock can also be stimulatory. For example, the German government's economic policy decisions surrounding German unification in 1990 unleashed an expansionary asymmetrical economic shock in the European economy. If a currency domain does not have the capacity to adjust quickly to an asymmetrical shock, then a region experiencing one risks being mired for some time in either depressed or overheated conditions. Regional asymmetries in the capacity to adjust, which resemble an asymmetrical demand shock if structural differences across regions produce varied responses to an aggregate shock or even to just a common monetary policy, can also occur as a result of a monetary union (Dornbusch, Favero and Giavazzi 1998; Franzese 2000).

In practice, most OCA research since the early 1960s has engaged in specifying and testing individual avenues of cross-regional adjustment. This work has produced widespread consensus regarding the relevant properties. These are (Mongelli 2002: 8–10): (1) Extent of reciprocal trade; (2) Diversification in production and consumption; (3) Mobility in the factors of production; (4) Convergent inflation rates; (5) Political integration; (6) Price and wage flexibility; (7) Similarity in business cycles and the absorption of symmetrical shocks; (8) System of fiscal transfers.

Scholars have stressed business-cycle convergence, factor mobility (especially labour mobility), fiscal transfers, trade integration, and price and wage flexibility.

Although analysts have made progress in operationalizing most OCA properties, efforts to move beyond a list to produce an articulated model have proven far more difficult. Even one of the most sanguine observers concedes, 'There still is no simple OCA-test with a clear-cut scoring card' (Mongelli 2002: 5) Empirical assessments of past, present and potential OCAs remain patchwork and not always conclusive. Nonetheless, the attributes listed above at least provide a rough-and-ready means to take stock.[2]

When European monetary union began to move from proposal to policy during the 1990s, scholars also began to investigate a second question: How does the actual creation of an OCA affect its subsequent viability? By the latter half of the 1990s, two views had emerged. Paul Krugman developed one perspective that has come to be known as the 'specialization hypothesis'. This argument – based on trade theory and the experience of the United States during the twentieth century – postulates that the introduction of a single currency should result in greater geographical specialization since it promotes greater economics of scale and reduces the transaction costs to trade. The outcome would be greater regional specialization, which tends to produce both a decline in the correlation of cross-regional incomes and an increasing vulnerability to asymmetric shocks, perhaps even to a point at which participation in a single currency area would be economically deleterious for some regions (Bayoumi and Eichengreen 1996; Krugman 1993; Krugman and Venebles 1996; Tenreyro and Barro 2003).

The proponents of the second perspective, which has been dubbed the 'endogenous currency area' (ECA) argument (alternatively, the 'self-validating currency area' argument), regularly invoke the Lucas critique (which has served as a foundation of the rational expectations school) and assert that the creation of a currency area can *itself* induce changes that actually enable the participating countries to achieve a sufficient degree of integration along the OCA properties *ex post* to make a currency area viable, even if they had not been able to cross the threshold of optimality

ex ante (Lucas 1972). ECA proponents argue that greater optimality arises because adopting a single currency typically has expanded trade dramatically with other currency union members (e.g., Alesina, Barro and Tenreyro 2002; Frankel and Rose 2002; Rose 2002). Some go one step further to assert that closer trade links promote more tightly correlated business cycles, which results in additional optimality (Artis, Krolzig and Toro 1999; Corsetti and Pesenti 2002; Frankel and Rose 1997). Other ECA advocates argue that currency unions inevitably produce political commitments and restrictions that also contribute to inducing sufficient optimality after the fact (Issing 2000).

The search for evidence of adjustment within the euro area has taken several forms. Some scholars have assessed the European economy using all or some of the criteria spelled out above. Others have compared Europe to the United States, which until 1999 had been the largest currency area in the world (for the United States as an optimum currency area, see: Kouparitsas 1999). The following sections use both approaches to summarize briefly the latest findings.

2. *An assessment of the euro area using core OCA properties*

Does the euro area now exceed a threshold of adequate integration when assessed using the core properties of an optimal currency area? This section will review recent empirical studies of the euro area using five core OCA properties: trade integration, cyclical convergence, factor mobility, fiscal federalism, and wage and price flexibility. The answer, in brief, is that the euro area still falls short along several dimensions.

2.1. *Trade integration*

Some economists have argued that the act of creating a common currency area produces a substantial deepening of trade among the participants (e.g., Frankel and Rose 2002). Others have pointed out that indirect effects also play a significant role. The formation of a currency union typically prompts the participants to adopt a series of additional supportive measures that further reduce the 'border effect', which stimulates trade (Rogoff 2001). Moreover, in an era of highly mobile capital, it has become harder for participants to capture the benefits of a preferential trade arrangement without adding the 'corner solution' of monetary union (Artis, 2002).

During the 1990s, the euro area countries exported on average roughly one quarter of their output to each other. Intra euro area trade drifted upward slightly over the course of the last decade, moving from 22 per cent of gross domestic product in 1990 to 26 per cent in 1999 (Statistisches Bundesamt 2002). The project to complete the internal

European market by the end of 1992 is a likely explanation for a significant share of the modest deepening of reciprocal trade within the euro area during the 1990s. Still, this proportion of intra euro area trade fell well short of United States interregional trade. In 2000, however, intra euro area trade as a per centage of GDP jumped to 30 per cent. This considerable surge in trade is consistent with the research of Rose and van Wincoop, who have estimated that the creation of a single currency area in Europe would result ultimately in an approximately 50-per cent increase in intra-European trade (2002). It should also be noted that price differences that cannot be explained by geography and other 'natural' factors have also begun to fall by some estimates (see more on this below), but by no means have been completely erased. This trend is consistent with a deepening of reciprocal trade.

A note of caution should be sounded, however. Some scholars have questioned Rose's robust assessment of the impact of a currency union on trade integration (e.g., Persson 2001. For a reply, see: Rose 2001). It is too soon to tell empirically whether the pace and direction of intra euro area trade found in 2000 data represent a secular trend. The worldwide economic boom, which peaked in 2000, also played a role in stimulating trade. Preliminary data show a modest reversal in trade integration within the euro area in subsequent years when the global and European economies softened. Taken as a whole, these observations indicate that at least some exporters are taking advantage of the new opportunities for expanded reciprocal trade within the euro area, but the persistence of price divergences shows that integration remains by no means complete.

2.2. Cyclical convergence

Over the last three decades, the business cycles worldwide have become more synchronized, particularly among the more affluent nations of the world (Kouparitsas 1998). There is some evidence of cyclical convergence above the general trend within the euro area, but convergence remains incomplete. Artis et al. (1999) and Krolzig (2001) report strong evidence of a common European business cycle among eight core participants in the European monetary union, but concede that the cycles have not been perfectly synchronized over the past two decades. A comparison with the United States, however, reveals far more regional integration than is found in Europe. An early analysis by Bayoumi and Eichengreen (1993) shows that the European Union economies are less correlated than the regions of the United States, and Bayoumi and Prasad (1996) show that region-specific shocks predominate in the United States whereas country-specific shocks dominate in the EU. Other studies document a bifurcation within the European Union between a more tightly synchronized

core group around Germany (i.e., Austria, the Benelux countries and, by some measures, France) and the remaining EU members, which are less well integrated (e.g., Funke 2000). Taken together, all of these studies indicate that an integration of business cycles within Europe is underway, but that it remains uneven. Once again, the level of integration according to this criterion does not approach that of the United States.

2.3. Factor mobility

Another potential avenue of adjustment within a currency area is through the mobility of the two principal factors of production: labour and capital. Labour mobility is particularly important because in the European Union labour income is the equivalent of approximately two-thirds of the gross domestic product, and historically, the real wage has been downwardly rigid. European labour mobility unfortunately remains extremely limited, despite persistent differences in regional unemployment, the guarantee of 'the free movement of peoples' under the 1957 Treaty of Rome, and the commitment by a core subset of EU members in the 1985 Schengen agreement to remove all controls on their common borders. The Organization for Economic Cooperation and Development (OECD) reports that only 1.5 per cent of the European Union's citizens reside in a member country of which they are not nationals. Mobility within European countries is also comparatively low. Labour mobility defined as the per centage of the population that moves from one local labour market to another annually is two to three times higher in Japan and the United States than in Europe (OECD 1999). Several factors account for relatively low European labour mobility. These include cultural and language barriers, the non-transportability of welfare-state programmes (e.g., public pensions and unemployment insurance) across national borders, sizeable legal and financial impediments to establishing legal residency, often difficult and expensive housing markets, and citizenship restrictions on public sector employment (Bertola 2000).

Low labour mobility poses a formidable challenge to the successful maintenance of European monetary union. In the United States, interregional migration almost single-handedly eliminates virtually all short-term interregional variations in employment; but in Europe, immigration is at best weakly responsive to regional employment differentials (Blanchard and Katz 1992; Bentolilla 1997).

Let us now turn to the other mobile factor of production, namely, capital. To be sure, European capital markets are substantially more open and integrated than they were twenty-five years ago. As recently as the early 1980s, several European countries maintained formal exchange

controls and cross-national investment was all too often a harrowing experience. Although the barriers across European capital markets have come down since then, it could not be said that either foreign direct investment (FDI) or financial markets in the European Union have become seamless. Intra-European foreign direct investment has accelerated, but serious barriers hinder fuller integration. A 1999 European Commission report found that in sectors comprising roughly half of the European economy, significant impediments impair FDI (European Commission 1999). The repeated failure of the European Union to liberalize the rules for mergers and acquisitions has also held back intra-European investment. As a result, even today, most European mergers and acquisitions – particularly in traditionally sensitive sectors, such as banking – remain national affairs (OECD 2002: 11).

The situation in European financial markets is similar to FDI. The most recent OECD country review of the Euro area, which focused on financial market integration as a special topic, concluded that progress has been made, but 'there is ample evidence that financial markets have some way to go before national demarcation lines will effectively disappear' (OECD 2002: 11). Technological and managerial advances have been the 'main drivers' of financial market integration, 'while national policies often acted as an impediment' (OECD 2002: 10). Other studies, such as the 2001 and 2003 reports of the European Union's Giovannini Committee, confirm a persistence of national barriers to European clearing and settlement. 'Barriers include mismatches in corporate law, taxes and information-technology platforms, as well as straight protectionism' (*Economist*, 12 April 2003). Gaspar and Mongelli show that the ratio between European current account balances and GDP per capita has risen recently, indicating a rise in the significance of net financial flows (as cited in Mongelli 2002: 20). Shrinking interest rate gaps and a decline in arbitrage opportunities in the EU also indicate an increase in financial integration (Issing 2000a). Yet, a 'home bias' in equity holdings and relatively low levels of cross-national ownership of assets remain the rule (Obstfeld and Rogoff 2000; Tesar and Werner 1995). A shift from reliance on local banks to securities markets for raising investment capital is underway, but progress is slow. Cross-border clearance and the settlement of commercial transactions are still 'cumbersome and costly', mortgage markets remain 'heterogeneous and domestically oriented', and 'entry barriers in local insurance and pension markets are considerable' (OECD 2002: 11).

To recapitulate, European labour mobility is quite low, which greatly complicates the smooth functioning of the euro area's economy. European capital markets have become more integrated over the past two decades, but remain far from unified. In the absence of major reform, the

capacity of either factor to serve as an adequate conduit for quick adjustment in response to an asymmetrical demand shock is minimal.

It is worth noting the observation of Krugman and Obstfeld that if the current uneven trends in the factor-market integration persist, the cost of adjusting to a demand shock for some parts of the euro area could actually be higher than it was before monetary union (2003: 629). The combination of an immobile labour force and a decline in local demand within an integrated euro-area financial market could produce local capital flight that would result in regional pockets of persistent unemployment that would be even greater than job losses resulting from lost efficiency had the national government in question resorted to capital controls.

2.4. Fiscal transfers

Cross-regional fiscal transfers play an important role in promoting quick adjustment to asymmetrical shocks in the United States economy. Citizens in states with relatively weak economies pay relatively less in federal taxes and receive relatively more federal transfer payments in the form of social benefits and unemployment insurance than they would if their economies had been performing better. Ultimately, the citizens from states with stronger economies pick up the tab through the greater volume of taxes they pay and fewer benefits they receive from the federal government as a result of a strong economy. Besides speeding adjustment, fiscal transfers play an important role in the United States and other economies in keeping regions from diverging too far from each other economically (Obstfeld and Peri 1998; Sala-i-Martin and Sachs 1991).

The European Union is presently unable to construct a similar system of cross-member fiscal transfers for two reasons. First, each EU member runs its own independent set of transfer payment programmes that do not permit fiscal transfers across borders. In other words, if the German economy stagnates, German officials cannot tap into bulging Irish state coffers to cover mounting unemployment and welfare claims. Widely diverse rules regarding the structure of payroll taxes, eligibility and payments all but precluded an easy merger of national entitlement systems. Second, the member nations have severely restricted the size and the uses of the EU budget. The size of the total EU budget has been capped at less than 2 per cent of the EU's GDP, which is wholly inadequate for the purpose of cross-regional stabilization. Besides, the largest expenditures in the EU budget – agricultural subsidies and structural funds – are ill-suited to play the role of counter cyclical stabilizers. The absence of any means to undertake large-scale cross-member counter-cyclical fiscal transfers leaves euro area policymakers

without anything equivalent to this second major mechanism for cross-regional equilibration relied upon by their American counterparts to preserve balance within the U.S. currency area.

Mongelli has argued that supranational transfers may not be necessary so long as national fiscal stabilizers prove up to the task of speeding adjustment to adverse shocks (Mongelli 2002: 23). This, however, presupposes that shocks never manifest asymmetries larger that what could be handled via transfers at a national level. This assumption could well be problematic, in particular for the smaller EMU participants.

2.5. Price and wage flexibility

Flexibility in nominal wages and prices promotes relatively speedy adjustment to an asymmetrical demand shock because it permits the transmission of the new information regarding relative scarcity.

There is general consensus that cross-national price segmentation has declined in Europe over the last twenty years as a result of the single market reforms. Still, deviation from the law of one price remains. Incomplete implementation of the single market programme, continued use of subsidies and the persistence of residual non-tariff barriers (e.g., infringement on mutual recognition, excessive fees for cross-border money transfers and domestic bias in public procurement) have preserved price differentials. Krueger and Pischke (1997) have argued that restrictions on product market are a far greater source of Europe's employment problems than labour market rigidity. In a few sectors, such as automobiles, price distortions are particularly severe. The pre-tax price differential on some models exceeds 80 per cent and even in the most open and competitive of sectors, such as consumer electronics, price distortions persist. A recent study by Beck and Weber (2001), however, finds that European monetary union has reduced inter-European price dispersion significantly, but national practices are still 'important determinants of price volatility'.

Turning to labour costs, analysts concur that within the euro area, real wages have traditionally been rigid (Blanchard and Wolfers 2000; Nickell 1997; OECD 1994). Wage setting has been predominantly a national matter, often taking place at the sectoral level. Patterns of wage determination and adjustment can differ considerably from country to country (Cadiou et al. 1999). For many years, wage flexibility has been a focus of much of the debate over the viability and the impact of European monetary union (Eichengreen 1993; Dornbusch, Favero and Giavazzi 1998; Feldstein 1997; Viñals and Jimeno 1996). Given the absence of adequate migration and fiscal transfers – which are the two principal elements that sustain balance within the U.S. currency area – and

less-than-full integration of intra-European trade, business-cycles and capital markets, wages stand out as the pivotal vector of adjustment for sustaining stability in the euro area. Conventional wisdom has it that without increased flexibility in labour markets, the euro zone cannot avoid plunging into a 'Mundellian nightmare' of asymmetric growth with simultaneous pockets of overheating and stagnation (Dohse and Krieger-Boden 1998).

Lars Calmfors (2001: 8) spells out the causal mechanism through which, at least in theory, EMU could induce an endogenous increase in wage flexibility. To the extent that European monetary unification leads to product-market integration, product-market competition will intensify. Once a single currency is introduced, firms in countries with relatively high costs for a given sector within the currency area, which had previously been shielded by the transaction costs resulting from separate currencies, would come under unprecedented pressure to restructure. One substantial area for economies would be the wage bill.

Sceptics, such as Krueger, counter that one should not underestimate the willingness of societies to accept higher unemployment to preserve generous compensation arrangements and welfare states. This certainly has proved to be the case through much of Europe over the last thirty years. Krueger points out that demand for the protection of workers from market swings is even likely to increase, since monetary union raises the level of economic volatility. The greater demand for security, Krueger argues, is likely to cancel out rising calls for deregulation from other quarters of the economy, leaving things at the *status quo* (Krueger 2000).

Krueger sees a relaxation of product market restrictions and limits on entrepreneurship as a more politically popular means to induce greater flexibility to the euro area than labour market liberalization. Yet Krueger never explains how labour costs could be largely insulated from the pressures of increased product market competition. Evidence from a recent series of OECD studies demonstrates a tight connection between the product and labour markets. Consequently, product market deregulation would most likely produce a second avenue of pressure for labour market flexibility rather than a substitute for it. Still, Krueger's observation regarding the exceptional stickiness of European labour markets and his explanation for it, which is rooted in voter and interest group preferences, remains worth considering (Krueger 2000; Jean and Nicoletti 2002).

In the end, the most obvious way to determine whether the arguments of the proponents of the endogenous currency area argument or the sceptics have merit is to undertake an empirical analysis. Since the debate surrounding the efficacy of EMU focused most heavily on the flexibility

of labour costs as the fulcrum of adjustment, the following section focuses there.

3. Empirical investigation of labour-cost trends in the euro area

Now that more than five years have passed since the exchange rates of the national currencies of the countries participating in European monetary union were irrevocably frozen *vis-à-vis* each other, we have enough data to start analysing the impact of this momentous step in European economic integration.

If the endogenous currency argument were correct, one would expect to find labour market adjustment to have started already, given the politico-economic structure of the euro area discussed above and the preliminary evidence of some deepening of reciprocal trade and price convergence. The logic of ECA theory suggests that adjustment would unfold in two phases. First, national labour costs would go through a one-time adjustment to find a new equilibrium reflecting the elimination of the transaction costs and other *de facto* barriers that were a product of the old multiple currency regime. Calmfors (2001) among others argues that this short-run transitional period would produce labour cost convergence at the sectoral level because price competition would intensify, but there would be insufficient time to respond with productivity enhancements. Convergence would aggregate up to the national level, since it is unlikely that countries would intensify a Europeanwide division of labour over the short run by shedding whole sectors. Convergence, in essence, would be the short-run manifestation of greater labour market flexibility. Full labour-cost convergence would not be expected, however, since national productivity rates still vary significantly. A convergence toward a common unit labour cost (ULC), which does take productivity into account, could be expected.

Once short-run convergence had been achieved, one would expect a new equilibrium within which there would be considerable stability in the relative wage rates among euro partners. In this second phase, wage ratios would only vary in response to shifts in relative productivity among the euro area members and to any asymmetrical shocks that arise.

Since an initial convergence phase, if it is taking place, would undoubtedly take several years to run its course, an empirical investigation should look for evidence of movement toward greater cross-national compression in labour costs. This can be done by employing a t-test to ascertain whether there is a statistically significant difference in the standard deviations of dispersion before and after the introduction of the euro. This analysis uses two measures of labour cost to conduct the test: nominal hourly labour costs and unit labour costs.

Raw standard deviations using nominal data pose an especially rigorous test for the null hypothesis (that is, the introduction of the euro has had no significant impact on relative national wage determination) because national inflation rates in the euro area converged around a relatively low level over the course of the 1990s. Convergence of national inflation rates at a lower mean rate would, all other things being equal, itself produces a smaller standard deviation in the nominal change in labour costs between the two time periods under examination. Hence empirical results using nominal data that fail to reject the null hypothesis would be particularly persuasive.

The available data series covers ten of twelve euro area countries from the first quarter of 1995 to the fourth quarter of 2002, and provides partial data thereafter. This sample is deemed sufficient, since the two countries with missing data – Greece and Luxembourg – have relatively small economies. T-tests were performed on standard deviations from the period beginning with the first quarter of 1995 and ending with the fourth quarter of 1998, and the period beginning with the first quarter of 1999 and ending with the fourth quarter of 2002. An initial t-test included all ten euro participants for which there are data. Portugal was dropped because it was acting as an outlier.[3] The result of the nine-country test does not permit a rejection of the null hypothesis, namely, that there is no statistically significant difference in the standard deviations of nominal hourly labour costs in the periods before and after the introduction of the euro.[4] Figure 1 illustrates the pattern of the statistical results.

European compensation developments exhibit considerable consistency. Although individual countries do trade places (e.g., Ireland rises and Italy slips), the spread stays stable throughout the nearly eight years for which we have data for most of the countries. The notorious 'stickiness' of nominal labour costs has persisted despite the introduction of the euro.

A t-test on unit labour cost data was also performed to assess the robustness of the results above. Since unit labour cost (ULC) data reflect the full tradeoff of producing in one location versus another, they are an excellent measure of convergence. The Organization for Economic Cooperation and Development has sufficient quarterly ULC data for the business sectors of six of the twelve euro participants: Austria, Finland, France, Germany, Italy and Spain. Together, these six states comprise 86 per cent of the euro area's gross domestic product. The ULC series begins earlier than the eurostat data on hourly labour costs. This permits a t-test on data not only before and after the introduction of the euro in 1999, but also 'stage two' in the process of European monetary union, which began in 1994. There is an argument for doing so, since this is the point at which potential participants in European monetary union were

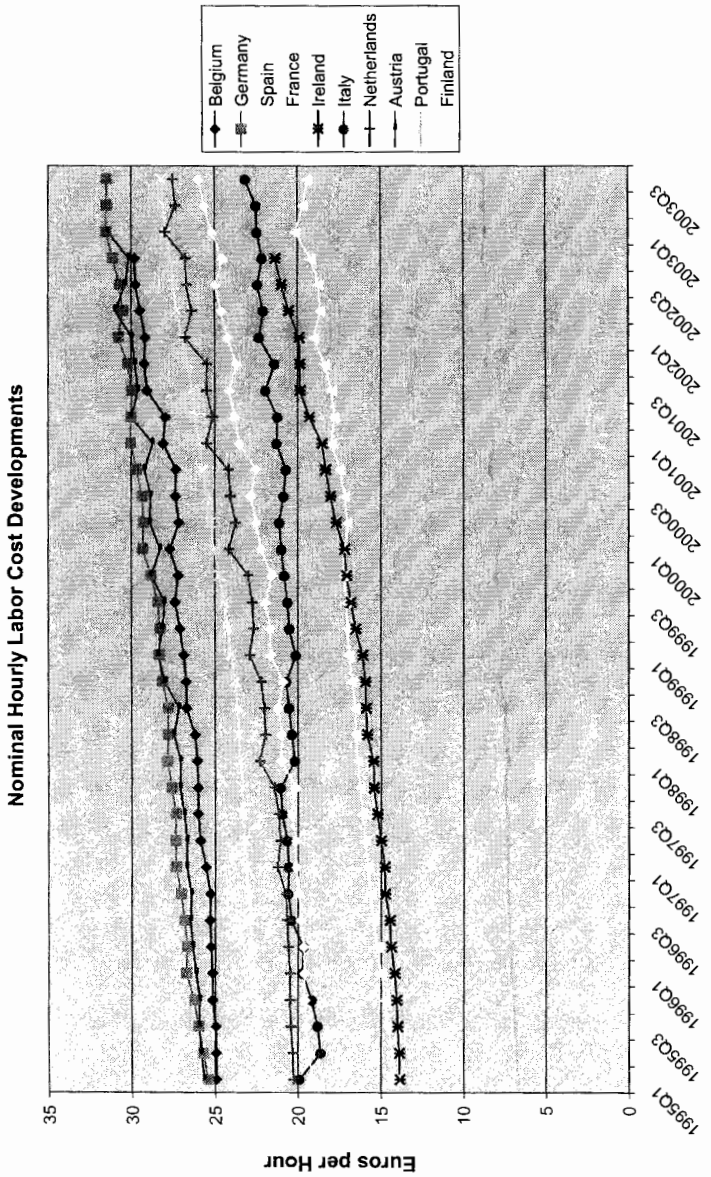

FIGURE 1: *Nominal hourly labour cost developments*

obliged for the first time to pursue policies that would increase the convergence and coordination of their economies.

The null hypothesis is that the introduction of the euro has had no significant impact on the relative distribution of unit labour costs. Two t-tests were done on the standard deviations of the OECD's data on unit labour costs from the first quarter of 1991 to the fourth quarter of 2000. The first test separates the quarterly standard deviations in ULC into two populations, one covering 1991 to 1993, and the other 1994 to 2000. The second t-test sets the dividing point before and after 1999, as in the earlier t-test of hourly labour costs. Both tests do not allow a rejection of the null hypothesis, which for this data set is that there is no statistically significant difference in the standard deviations of unit labour cost in either the periods before and after the start of phase two in 1994, or the periods before and after the introduction of the euro in 1999.[5]

A visual inspection of Figure 2 is consistent with the statistical findings. The ULC data are more fluid than those for nominal labour costs. Spain, for example, rises disproportionately during the period under review, while Finland falls. Still, the standard deviation remains relatively consistent throughout.

Why are labour costs not converging in the euro area? Two potential explanations come to mind. First, five years may simply be too short a time for the impact of EMU to have worked its way through to the labour markets. As reciprocal trade increases and product markets converge, mounting price pressures may ultimately force policymakers and collective bargaining parties to institute labour market liberalization, but this all takes time. It is worth pointing out that since the introduction of the euro, Europe has not experienced an asymmetrical demand shock. Perhaps only the impact of this sort of shock will be powerful enough to break the *status quo* of wage determination, which is as much a product of politics as of markets. This may be the harsh reality of endogeneity when applied to labour markets. Still, after five years, waiting for change in the labour markets has become all too reminiscent of waiting for Godot. The case could also be made for a second scenario, namely, that we have already entered a Mundellian nightmare. While Germany teeters on the verge of deflation and a recession, inflation has been accelerating in Belgium, Ireland and Spain. By sticking to the middle course, ECB monetary policy has thus far proved inadequate to the task of resolving either problem.

The best way ultimately to sort out which scenario we are facing currently is to undertake a brief analysis of the institutional structure for national economic policymaking within the euro area. This architecture frames the universe and the relative advantages of the options available

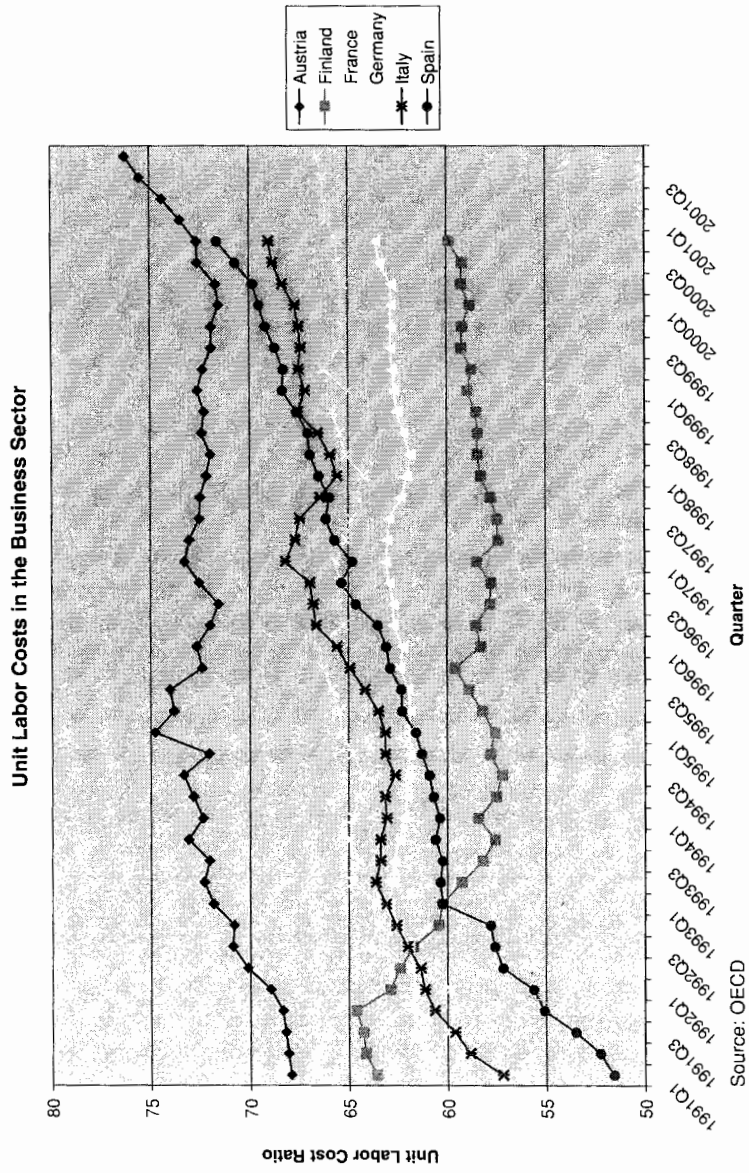

FIGURE 2: *Unit labour costs in the business sector*

to policymakers regarding European labour markets. The next section proceeds with that task.

4. An institutional analysis of European monetary union and impact on labour markets

Economic and political flaws within the institutional architecture of European monetary union have hindered the transformation of the euro zone into a single currency era. The Stability and Growth Pact, which was adopted at the EU Amsterdam summit in June 1997, is particularly problematic. The purpose of the SGP is to preserve the stability of the euro by establishing a means to dissuade participating countries from adopting inflationary fiscal practices. Specifically, the Stability and Growth Pact commits all EMU members to maintain a public budget 'close to balance or in surplus', and establishes an annual budget-deficit ceiling for each EMU member at 3 per cent of its gross domestic product. Violators of the deficit cap are to be subjected to a lengthy, multi-step process undertaken by the European Commission's Directorate General for Economic and Financial Affairs that could culminate in a fine ranging from 0.2 to 0.5 per cent of GDP, depending on the circumstances. Only a significant economic recession (i.e., a GDP decline of at least 0.75 per cent) or a declaration of exceptional circumstances by EU finance ministers can forestall the penalty procedure (European Council 1997: 17–18; and Oudenaren 2000: 189).

The logic behind the Stability and Growth Pact rests on the assumption that poor fiscal policy choices and structural rigidities are the most likely root causes of an expansion of a public deficit (Barro and Gordon 1983). The SGP would then strengthen the incentive for violators to undertake structural reforms rather than simply attempting to spend out of an economic downturn. Ironically, however, the creation of the SGP may have made structural adjustment even more difficult. Chasing fiscal balance through tax increases and budget cuts in the midst of a weak economy, if pursued *in extremis*, can result in a 'rigidity trap'. George Ackerlof and colleagues (1996) have observed that a low inflation rate (i.e., less than 3 per cent) limits the capacity for structural adjustment because it reduces the gap between the real and the nominal wage. Hence, if uncompromising fealty to fiscal probity results in a reduction of inflation to an extremely low rate, structural adjustment in labour markets becomes far more difficult because of the enduring stickiness of nominal wages (Walsh 1995).

There is considerable evidence that the euro area has landed in a rigidity trap. First, it is important to note that the European Central Bank has set 2 per cent as a ceiling for European inflation, which is well beyond

the rigidity threshold observed by Ackerlof et al. Second, virtually every current participant in EMU had a structural budget deficit when they adopted the Stability and Growth Pact. Putting it into practice meant that they simultaneously had to cut their budget deficits to reach a balance, as required. When the world economy was booming, this was less of a problem. The onset of poor economic conditions in 2000 changed circumstances considerably. The downturn and the bursting of equity bubbles worldwide cut deeply into tax receipts. Accelerating unemployment increased government expenditures. These two trends combined to drive budget deficits above the 3 per cent ceiling in several EMU countries. Since the economic downturn was not sharp enough to trigger an automatic waiver of the penalty process spelled out in the SGP, the Directorate General for Economics and Finance has put several EMU participants under pressure to adopt pro-cyclical budget cuts and tax increases in the midst of a deteriorating economy and rising unemployment.

Circumstances could be worse. The decision of the EU finance ministers to suspend the application of the SGP penalty procedures to France and Germany has staved off an exacerbation of the rigidity trap and perhaps even a slide of Germany into deflation. Nonetheless, the November 2003 EU finance ministers' decision underscored the 'legitimacy trap' in the political architecture of European monetary union.

Chang (2002) argues that the independence of the ECB from elected policymakers leaves economic success as its sole criterion of legitimacy. This structural arrangement changes the relationship between the nation states and the ECB from one of principal and agent to collective responsibility. Unfortunately, the ECB's independence also means that the institutional arrangement needed to support a successful collective effort for delivering economic growth and price stability does not exist. Rose (2002) points out that the ECB's insulated position from national pressures and 'fixed commitment to price stability in all circumstances' is a 'weakness' because it is not readily compatible with the preference of elected officials with multiple goals and shifting priorities. The result is an adversarial relationship that has no constructive means of mediation. Attempts by national leaders to deal with immediate difficulties, such as a languishing economy, through concrete action can only be interpreted as a challenge to the legitimacy of European monetary union. Suspending the Stability and Growth Pact is not without its costs. This step puts into question the architecture of European monetary union, portending a rise in the risk premium of holding euros, which would force the ECB to increase interest rates. High rates would in turn dampen economic growth. In other words, incremental efforts to escape the legitimacy trap may only exacerbate it.

5. *Implications*

More than five years into the monetary union, Europe is still not an optimal currency area. Although some progress has been made in terms of intra-European trade, business cycle convergence and price harmonization, the euro area remains far from integrated; its level of integration falls well short of that in the United States. As a result, Europe remains acutely vulnerable to an asymmetrical economic shock. European labour markets show no signs of becoming more flexible in the wake of the introduction of the euro. While most economists see increasing flexibility in European labour markets as the principal means to transform Europe into an optimal currency area, the patterns of relative unit labour costs and hourly wages have not changed. What are the implications for policymakers of this failure of the euro area to 'self validate'? What can be done to address the problems of a 'suboptimal' European currency area? The best first step would be to extend and maintain the suspension of the Stability and Growth Pact indefinitely. Its impetus and logic were always far more political than economic. The German finance minister, Theo Waigel, pressed for it to shore up political support for the euro at home. Yet, even without the Stability and Growth Pact, public and private dynamics already exist. Bond markets would discipline a profligate state through higher interest rates on their debt far more effectively than any political construction like the SGP well before any threat to the overall stability of the euro arises. Although the narrow spread on bond yields across the euro area may reflect at least in part a belief within private markets that the European Central Bank would monetarize the debt of any EMU participant that ran into serious structural difficulties, it is inconceivable that the ECB would monetarize debt without extracting a credible commitment to structural adjustment in exchange.

Secondly policymakers should simply concede that even under the most optimistic of scenarios, labour markets in the euro area are never going to become flexible enough to serve as the principal vector of adjustment for the currency area. To do so, the euro area labour markets would have to become even more flexible than those of the United Kingdom and the United States. The chances of such a dramatic transformation are at best slight.

The euro area remains vulnerable to asymmetrical shocks and varied national responses to aggregate economic disturbances. Using the euro as a battering ram to force through labour-market deregulation to create an optimal currency area has failed so far and is unlikely to work in the future. No other large currency area relies on wage flexibility as its principal vector of adjustment. Premising European monetary union on wage flexibility has proved to be little more than a pipe dream.

NOTES

1. The research and first drafts of this article were produced as part of the author's DaimlerChrysler Senior Fellowship at the American Institute for Contemporary German Studies, Washington, D.C. The author would also like to thank Jeffery Anderson, Xavier Debrun, Cathleen Fisher, Véronique Genre, Randy Henning, Gerd Jan, Jackson Janes, Geoff Kenny, Francesco Paolo Mongelli, Ilonka Oszwald, Jennifer Paxton, Richard Rose, Caleb Rossiter and the anonymous reviewers for their comments and assistance.
2. Bayoumi and Eichengreen (1996) take a different approach in an effort to get around this problem. They use real and nominal exchange-rate variability as a proxy for the underlying economic determinants of optimality. Unfortunately, this method cannot be employed in the current investigation, since it can only be used to assess potential rather than existing currency areas.
3. When Portugal is included, the results of a two-sample, two-tail t-test assuming unequal variances are: t Stat = − 9.580; P(T< = t) = 4.08E-08. In other words, the results show strong significance and indicate an *increase* in the standard deviation after the introduction of the euro in 1999. The t-test is not robust, however. It turns insignificant when Portugal is excluded, indicating that Portugal is an outlier.
4. On a two-sample, two-tail t-test assuming unequal variances, the results are: t Stat = 1.697; P(T< = t) = 0.102.
5. On a two-sample, two-tail t-test assuming unequal variances, the results when the first quarter of 1994 is the dividing point are: t Stat = − 0.809; P(T< = t) = 0.431. The results when the first quarter of 1999 is the dividing point are: t Stat = 1.476; P(T< = t) = 0.151.

REFERENCES

Ackerlof, G.A., Dickens, W.T. and Perry, G.L. (1996) 'The Macroeconomics of Low Inflation', *Brookings Papers on Economic Activity*, 1, 1–59.

Alesina, A., Barro, R.J. and Tenreyro, S. (2002) 'Optimal Currency Areas', NBER Working Paper, no. w9072.

Artis, M. (2002) 'Currency Interdependence: What Economics has to Say', *Journal of Public Policy*, 22, 2, 111–118.

Artis, M., Krolzig, H.-M. and Toro, J. (1999) 'The European Business Cycle', Centre for Economic Policy Research, Discussion Paper 2242.

Barro, R.J. and Gordon, D.B. (1983) 'Rules, Discretion and Reputation in a Model of Monetary Policy', *Journal of Monetary Economics*, 12, 1, 101–121.

Bayoumi, T. and Eichengreen, B. (1993) 'Shocking Aspects of European Monetary Integration', in F. Torres and F. Giavazzi (eds.), *Adjustment and Growth in the European Monetary Union*. Cambridge: Cambridge University Press.

Bayoumi, T. and Eichengreen, B. (1996) 'Optimum Currency Areas and Exchange Rate Volatility: Theory and Evidence Compared', in B.J. Cohen (ed.), *International Trade and Finance New Frontiers for Research: Essays in Honor of Peter Kenen*. Cambridge: Cambridge University Press.

Bayoumi, T. and Eichengreen, B. (1997) 'Ever Closer to Heaven? An Optimum-Currency-Area Index for European Countries', *European Economic Review*, 41, 761–770.

Bayoumi, T. and Prasad, E. (1996) 'Currency Unions, Economic Fluctuations, and Adjustment – Some New Empirical Evidence', IMF Working Papers, WP/96/81.

Beck, G.W. and Weber, A.A. (2001) 'How Wide are European Borders? New Evidence on the Integration Effects of Monetary Unions', 56th European Meeting of the Econometric Society Lausanne, Switzerland, 25–29 August.

Bentolilla, S. (1997) 'Sticky Labor in Spanish Regions', *European Economic Review* 41, 3–5, 591–598.

Bertola, G. (2000) 'Labor Markets in the European Union', *ifo-Studien* 46, 1, 99–122.

Blanchard, O.J. and Katz, L.F. (1992) 'Regional Evolutions', *Brookings Papers on Economic Activity* 1, 1–75.

Blanchard, O. and Wolfers, J. (2000) 'The Role of Shocks and Institutions in the Rise of European Unemployment', *Economic Journal* 110, 1–33.

Braunerhjelm, P. et al. (2000) 'Integration and the Regions of Europe: How the Right Policies can Prevent Polarization', Centre For Economic Policy Research, Monitoring European Integration 10.

Cadiou, L., Guichard, S. and Mauel, M. (1999) 'Wage Flexibility and EMU', *La Lettre du CEPII*, no. 180.

Calmfors, L. (2001) 'Wages and Wage-Bargaining Institutions in the EMU – A Survey of the Issues', CESifo Working Paper, no. 520, Center for Economic Studies and ifo Institute for Economic Research, Munich.

Chang, M. (2002) 'The Logic of Collective Responsibility in European Monetary Integration', *Journal of Public Policy* 22, 2, 239–255.

Corsetti, G. and Pesenti, P. (2002) 'Self-Validating Optimum Currency Areas', Centre for Economic Policy Research, Discussion Paper 3220.

Dornbusch, R., Favero, C. and Giavazzi, F. (1998) 'Immediate Challenges for the European Central Bank', *Economic Policy* 26.

Dohse, D. and Krieger-Boden, C. (1998) *Währungsunion und Arbeitsmarkt. Auftakt zu unabdingbaren Reformen*. Tübingen: Mohr Siebeck.

Eichengreen, B. (1993) 'European Monetary Unification and Regional Unemployment', in L. Ulman, B. Eichengreen and W.T. Dickens (eds.), *Labor in an Integrated Europe*. Washington, DC: Brookings.

Emerson, M. et al. (1992) *One Market, One Money: An Evaluation of the Potential, Benefits and Costs of Forming an Economic and Monetary Union*. Oxford: Oxford University Press.

European Commission, Directorate General Enterprise (1999) *The Competitiveness of European Industry: 1999 Report*. Working document of the services of the European Commission. Brussels: European Commission.

European Council (1997) 'Resolution of the European Council on the Stability and Growth Pact', Bulletin EU, 6.

Feldstein, M. (1997) 'The Political Economy of the European Economic and Monetary Union', *Journal of Economic Perspectives* 11, 4, 23–42.

Frankel, J.A. and Rose, A. (1997) 'Is EMU more Justifiable *ex post* than *ex ante*?' *European Economic Review* 41, 3–5, 761–770.

Frankel, J.A. and Rose, A. (2002) 'An Estimate of the Effect of Common Currencies on Trade and Income', *Quarterly Journal of Economics* 117, 2, 437–466.

Franzese, R.J., Jr. (2000) 'Credibility, Conservative Monetary Policy and Wage/Price-Bargaining Organization: A Review with Implications for Monetary Policy in the European Common Currency Area', Center for Political Studies, Institute for Social Research, University of Michigan.

Funke, M. (2000) 'Macroeconomic Shocks in Euroland vs. The UK: Supply, Demand, or Nominal?' European Institute, Robert Schuman Centre, Working Paper no. 00-37.

Issing, O. (2000a) 'Europe: Common Money – Political Union?' *Economic Affairs* 20, 1, 33–39.

Issing, O. (2000b) 'The Globalisation of Financial Markets', Ottobeuren: (http://www.ecb.int/key/00/sp000912_2.pdf).

Jean, S. and Nicoletti, G. (2002) 'Product Market Regulation and Wage Premia in Europe and North America: An Empirical Investigation', Economics Department Working Paper, No. 318. Paris: OECD.

Kenen, P.B. (1969) 'The Theory of Optimum Currency Areas: An Eclectic View', in R.A. Mundell and A.K. Swoboda (eds.), *Monetary Problems of the International Economy*. Chicago: University of Chicago Press.

Kouparitsas, M.A. (1998) 'Are International Business Cycles Different under Fixed and Flexible Exchange Rate Regimes?' *Economic Perspectives* 22, 1, 46–64.

Kouparitsas, M.A. (1999) 'Is the United States an Optimal Currency Area?' *Chicago Fed Letter*, no. 146.

Krolzig, H.-M. (2001) 'Markov-Switching Procedures for Dating the Euro-Zone Business Cycle', *Vierteljahrshefte zur Wirtschaftsforschung* 70, 3, 339–351.

Krueger, A.B. (2000) 'From Bismarck to Maastricht: The March to European Union and the Labor Compact', NBER Working Paper, no. w7456, 18–20.

Krueger, A.B. and Pischke, J.-S. (1997) 'Observations and Conjectures on the U.S. Employment Miracle', Princeton, University Industrial Relations Section, Working Paper no. 390.

Krugman, P. (1993) 'Lessons of Massachusetts for EMU', in F. Torres and F. Giavazzi (eds.), *Adjustment and Growth in the European Monetary Union*. Cambridge: Cambridge University Press, 241–269.

Krugman, P.R. and Obstfeld, M. (2003) *International Economics: Theory and Practice*, 6th edn. Boston: Addison Wesley.

Krugman, P. and Venebles, A.J. (1996) 'Integration, Specialization, and Adjustment', *European Economic Review* 40, 959–967.

Lucas, R.E. (1972) 'Econometric Testing of the Natural Rate Hypothesis', in O. Eckstein (ed.), *Econometrics of Price Determination*. Washington, DC: Board of Governors of the Federal Reserve System, 50–59.

McKinnon, R.I. (1963) 'Optimum Currency Areas', *American Economic Review* 53, 4, 717–725.
Mongelli, F.P. (2002) '"New" Views on the Optimum Currency Area Theory: What is EMU Telling Us?' *European Central Bank, Working Paper Series*, 8–10.
Mundell, R.A. (1961) 'A Theory of Optimum Currency Areas', *American Economic Review* 51, 4, 657–665.
Nickell, S. (1997) 'Unemployment and Labor Market Rigidities: Europe versus North America', *Journal of Economic Perspectives* 11, 3, 55–74.
Obstfeld, M. and Peri, G. (1998) 'Regional Nonadjustment and Fiscal Policy: Lessons for EMU', NBER Working Paper, no. w6431.
Obstfeld, M. and Rogoff, K. (2000) 'Do We Really Need a New International Monetary Compact?' NBER Working Paper no. 7864.
Organization for Economic Cooperation and Development (1994) *The OECD Jobs Study: Facts, Analysis, Strategies*. Paris: OECD.
Organization for Economic Cooperation and Development (1999) *EMU: Facts, Challenges and Policies*. Paris: OECD.
Organization for Economic Cooperation and Development (2001) *OECD Economic Surveys: Euro Area*. Paris: OECD.
Organization for Economic Cooperation and Development (2002) *Euro Area*, Country Reviews, OECD Economic Surveys. Paris: OECD.
Oudenaren, J. van (2000) *Uniting Europe: European Integration and the Post-Cold War World*. Lanham: Rowen & Littlefield.
Persson, T. (2001) 'Currency Unions and Trade: How Large is the Treatment Effect?' *Economic Policy* 33, 435–448.
Rogoff, K. (2001) 'Why not a Global Currency?' *American Economic Review* 91, May, 243–247.
Rose, A. (2001) 'Currency Unions and Trade: The Effect is Large', *Economic Policy* 33, 449–461.
Rose, A. (2002) 'The Effect of Common Currencies on International Trade: Where do We Stand?' Economics Department, Monetary Authority of Singapore, Occasional Paper no. 22.
Rose, A.K. and Wincoop, E. van (2001) 'National Money as a Barrier to International Trade: The Real Case for Currency Union', *American Economic Review* 91, 386–390.
Rose, R. (2002) 'Putting Monetary Politics in its Political Place', *Journal of Public Policy* 22, 2, 257–269.
Sala-i-Martin, X. and Sachs, J. (1991) 'Fiscal Federalism and Optimum Currency Areas: Evidence for Europe from the United States', NBER Working Paper, no. 3855.
Statistisches Bundesamt (2002) *Statistisches Jahrbuch 2002. Für die Bundesrepublik Deutschland*. Wiesbaden: Metlzer-Poeschel.
Teureyro, S. and Barro, R. (2003) 'Economic Effects of Currency Unions', NBER Working Paper, no. w9435.
Tesar, L.T. and Werner, I.M. (1995) 'Home Bias and High Turnover', *Journal of International Money and Finance* 14, 4, 467–492.
Tower, E. and Willett, T.D. (1976) 'The Theory of Optimal Currency Areas and Exchange Rate Flexibility', Princeton Special Papers in International Economics, 11.
Viñals, J. and Jimeno, J.F. (1996) 'Monetary Union and European Unemployment', Discussion Paper, no. 1485, Centre for Economic Policy Research, London.
Walsh. C.E. (1995) 'Central Bank Independence and the Short-Run Output-Inflation Trade-off in the European Community', in B. Eichengreen, J. Frieden and J. von Hagen (eds.), *Monetary and Fiscal Policy in an Integrated Europe*. Berlin: Springer: 12–37.

STEPHEN J. SILVIA
School of International Service
American University
4400 Massachusetts Ave., NW
Washington, DC 20016–8071
email: ssilvia@american.edu