The Breakup of the Euro Area[1]

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1. Introduction

The possibility of the breakup of the euro area was already being mooted even before the single currency existed.[2] These scenarios were then lent new life five or six years on, when appreciation of the euro against the dollar and problems of slow growth in various member states led politicians to blame the European Central Bank for disappointing economic performance.[3] Highly-placed officials, including possibly members of the governing council of the German central bank, reportedly discussed the possibility that one or more participants might withdraw from the monetary union.[4] How seriously should we take these scenarios? And how much should we care – how significant, in other words, would be the economic and political consequences?

The conclusion of the author is that it is unlikely that one or more members of the euro area will leave in the next ten years and that the total disintegration of the euro area is more unlikely still.[5] The technical difficulties of reintroducing a national currency should not be minimized. Nor is it obvious that the economic problems of the participating member states can be significantly ameliorated by abandoning the euro,

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[2] See e.g. Garber (1998) and Scott (1998).
[3] Appreciation of the euro against the dollar (and against Asian currencies pegged to the dollar) first occurred in 2002-4. In June 2005 Italian welfare minister Roberto Maroni declared that "the euro has to go" and called for the reintroduction of the lira. Then-prime minister Silvio Berlusconi followed by calling the euro "a disaster."
[4] Bundesbank president Axel Weber dismissed as "absurd" reports that he had taken part in such a meeting." Expatia (2005), p.1.
[5] Note that I have violated the first rule of forecasting: give them a forecast or give them a date, but never give them both. The point is that over horizons longer than ten years so many things could change that forecasting becomes prohibitively difficult. But I turn to the question of long-term developments below.

although neither can this possibility be dismissed. And even if there are immediate economic benefits, there may be longer-term economic costs, and political costs of an even more serious nature. Still, as Cohen (2000) puts it, "In a world of sovereign states….nothing can be regarded as truly irreversible." Policy analysts should engage in contingency planning, even if the contingency in question has a low probability.

The remainder of this paper considers such scenarios in more detail. While it is widely argued that the technical and legal obstacles to a country unilaterally reintroducing its national currency are surmountable, it will be argued here that the associated difficulties could in fact be quite serious. To be sure, there are multiple historical examples of members of monetary unions introducing a national currency. It has also been suggested that the legal problems associated with the redenomination of contracts can be overcome, as they were when the ruble zone broke up or when Germany replaced the mark with the reichsmark in 1923-4. But changing from an old money to a new one is more complicated today than in Germany in the 1920s or the former Soviet Union in the 1990s. Computer code must be rewritten. Automatic teller machines must be reprogrammed. Advance planning will be required for the process to go smoothly, as was the case with the introduction of the physical euro in 2002. Moreover, abandoning the euro will presumably entail lengthy political debate and passage of a bill by a national parliament or legislature, also over an extended period of time. Meanwhile there will be an incentive for agents anticipating the redenomination of their claims into the national currency, followed by depreciation of the latter, to rush out of domestic banks and financial assets, precipitating a banking and financial collapse. Limiting the negative

repercussions would be a major technical and policy challenge for a government contemplating abandonment of the euro.

The economic obstacles revolve around the question of how debt servicing costs, interest rates spreads, and interest-rate-sensitive forms of economic activity would respond to a country's departure from the euro area.[6] A widespread presumption is that departure from the euro area would be associated with a significant rise in spreads and debt-servicing costs. But further reflection suggests that the consequences will depend on why a country leaves (the defector could conceivably be a Germany concerned with politicization of ECB policy and inflationary bias rather than an Italy facing slow growth and an exploding public debt). They will depend on whether credible alternatives to the ECB and Stability Pact are put in place at the national level (whether national central bank independence is strengthened and credible fiscal reforms are adopted at the same time the exchange rate is reintroduced and depreciated). It seems likely that there would be economic costs but that these could be minimized by appropriate institutional reforms.

The political costs are likely to be particularly serious. The Treaty of European Union makes no provision for exit. Exit by one member would raise doubts about the future of the monetary union and likely precipitate a further shift out of euro-denominated assets, which would not please the remaining members. It might damage the balance sheets of banks in other countries with investments in the one abandoning the euro. Diplomatic tension and political acrimony would follow, and cooperation on non-monetary issues would suffer. The defector would be relegated to second-tier status in intra-European discussions of nonmonetary issues. And, insofar as they attach value to

[6] There is also the question of whether other EU member states would retaliate against a country reintroducing and depreciating its national currency with trade sanctions – considered below.

their participation in this larger process of European integration, incumbents will be reluctant to leave.

The paper starts by describing scenarios, revolving around high unemployment and high inflation, under which euro-area participants may wish to leave. The immediately subsequent sections then evaluate the economic, political, procedural and legal obstacles to doing so. An empirical section provides evidence on the realism of the exit scenarios using survey data from Eurobarometer, and on the economic barriers using data on the impact of euro adoption on commercial credit ratings. The section preceding the conclusion then contemplates reforms that might attenuate dissatisfaction with the operation of the single currency.

2. Scenarios

Different countries could abandon the euro for different reasons. One can imagine a country like Portugal, suffering from high labor costs and chronic slow growth, reintroducing the escudo in the effort to engineer a sharp real depreciation and export its way back to full employment. Alternatively, one can imagine a country like Germany, upset that the ECB has come under pressure from governments to relax its commitment to price stability, reintroducing the deutschemark in order to avoid excessive inflation.

These different scenarios would have different implications for whether defection implies breakup – that is, for whether one country's leaving reduces the incentive for others to remain. In the case of Portuguese defection the residual members might suffer a further loss of export competitiveness, while in the event of German exit they might find their competitiveness enhanced. Specifically, if other countries are similarly experiencing

high unemployment associated with inadequate international competitiveness, then Portugal's leaving will aggravate the pain felt by the others and may lead them to follow suit – but Germany's leaving may have no or even the opposite effect. Similarly, if discomfort with the inflationary stance of ECB policy is shared by other countries, then Germany's leaving, by removing one voice and vote for price stability, may heighten the incentive for others to do likewise.

More generally, if the country that leaves is an outlier in terms of its preferences over central bank policy, then its defection might better enable the remaining participants to secure an ECB policy more to their liking, in which case the likelihood of further defection and general breakup would be reduced. Disagreements over the stance of policy being an obvious reason why a participating member state would be disaffected, one might think that the defector would automatically be an outlier in terms of its preferences over central bank policy. But this is by no means certain: countries whose preferences differ insignificantly from those of other members could choose to defect for other reasons, for example in response to an exceptionally severe asymmetric shock, or because of disagreements over non-economic issues.[7]

And if the country that leaves is small, this would be unlikely to much affect the incentives of other members to continue operating a monetary union that is valued primarily for its corollary benefits. The contribution of the euro to enhancing price stability would not be significantly diminished by the defection of one small member.[8] The impetus for financial deepening ascribed to the single currency would not be

[7] These issues were analyzed in an influential early article by Alesina and Grilli (1993).
[8] The literature on price transparency and the euro is reviewed by Martha (2003).

significantly diminished.[9] If Portugal left the euro area, in other words, would the other members notice? Even if it used its monetary autonomy to engineer a substantial real depreciation, would its euro-area neighbors experience a significant loss of competitiveness and feel serious pain?

If, on the other hand, Germany defected, the size of the euro area would decline by more than a quarter. This would imply significant diminution of the scale of the market over which the benefits of the euro were felt in terms of increased price transparency and financial deepening. Countries balancing these benefits against the costs of being denied their optimal national monetary policy might find themselves tipped against membership. Defection by a few could then result in general disintegration.

In practice, a variety of asymmetric shocks could slow growth and raise unemployment in a euro area member state and create pressure for a real depreciation. The shocks that have attracted the most attention are those highlighted in Blanchard's model of rotating slumps (Blanchard 2006). The advent of the euro has brought credibility benefits to members whose commitment to price stability was previously least firm and where interest rates were previously high.[10] Enhanced expectations of price stability have brought down domestic interest rates, bidding up bond, stock and housing prices. Foreign capital has flooded in to take advantage of this convergence play. The cost of capital having declined, investment rises in the short run. Households feeling positive wealth effects, consumption rises as well. The capital inflow has as its counterpart a current account deficit. In the short run the result is an economic boom,

[9] On the stimulus to the development of European financial markets, see Bishop (2000) and Biais et al. (2006). On the corollary benefits of monetary union more generally, see Mongelli and Vega (2006).
[10] Benefits that in some sense reflect the operation of the barriers to exit described below.

driven first and foremost by residential construction, with falling unemployment and rising wages.

But once the capital stock adjusts to the higher levels implied by the lower cost of capital, the boom comes to an end. Unless the increase in capital stock significantly raises labor productivity (which is unlikely insofar as much of the preceding period's investment took the form of residential construction), the result is a loss of cost competitiveness. The country then faces slow growth, chronic high unemployment and grinding deflation, as weak labor market conditions force wages to fall relative to those prevailing elsewhere in the euro area. The temptation, then, is to leave the euro zone so that monetary policy can be used to reverse the erosion of competitiveness with a "healthy" dose of inflation.

This particular scenario has attracted attention because it suggests that the tensions that could eventually result in defections from the euro area are intrinsic to the operation of the monetary union. It suggests that the intra-euro-area divergences that are their source are direct consequences of the monetary union's operation. This story tracks the experience of Portugal since the mid-1990s – first boom, then overvaluation, and finally slump. There are signs of similar problems in Italy, where the difficulties caused by slow growth are compounded by the existence of a heavy public debt, and in Spain, which experienced many of the same dynamics as Portugal. The implication is that Greece and Slovenia (and future EMU members like Estonia and Latvia) will then follow.[11]

[11] One can also argue that Greece and Slovenia will have learned from the problems of Portugal, Spain and Italy, and that they will take preventive measures – aggressively tightening fiscal policy, for example, to prevent capital inflows from fueling an unsustainable construction-led investment boom and leading to a

3. Economic Barriers to Exit

But would reintroducing the national currency and following with a sharp depreciation against the euro in fact help to solve these countries' competitiveness and debt problems? The presumption in much of the literature is negative.[12] A country like Italy where slow growth combined with high inherited debt/GDP ratios to raise the specter of debt unsustainability (that it would become necessary to restructure the debt or for taxpayers and transfer recipients to make inconceivable sacrifices) might be tempted to reintroduce the lira as a way of securing a more inflationary monetary policy and depreciating away the value of the debt; but doing so would result in credit-rating downgrades, higher sovereign spreads and an increase in interest costs, as investors anticipate and react to the government's actions. A country like Portugal where high real wages combine with the absence of exchange rate independence to produce chronic high unemployment might be tempted to reintroduce the escudo as a way of securing a more expansionary monetary policy and pushing down labor costs; but doing so will only result in higher wage inflation, as workers anticipate and react to the government's actions. Estimates in Blanchard (2006) suggest that Portugal would require a 25 per cent real depreciation in order to restore its competitiveness.[13] It is not clear if the government sought to engineer this through a substantial nominal depreciation that workers would look the other way. Observers pointing to these effects conclude that exiting might not be especially beneficial for a country with high debts or high unemployment. To the

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consequent loss of competitiveness. In this view, the negative shocks experienced by the first cohort of convergence economies may not be felt by their successors.

[12] See for example Gros (2007).

[13] Absent further divergences in productivity growth.

contrary, the principal obstacle to exiting the euro area in this view is that doing so may have significant economic costs.

Yet one can also imagine circumstances in which reintroducing the national currency might constitute a useful treatment. Assume that Portuguese workers are prepared to accept a reduction in their real wages but confront a coordination problem: they are willing to accept a reduction only if other workers or unions accept a reduction, perhaps because they care about relative wages.[14] Under these circumstances there will be a reluctance to move first, and wage adjustment will be suboptimally slow. Then a monetary-cum-exchange-rate policy that jumps up the price level, reducing real wages across the board, may be welfare enhancing; this is the so-called "daylight savings time" argument for a flexible exchange rate. Importantly, in the circumstances described here there will be no incentive for individual workers or unions to push for higher wages to offset the increase in prices. The lower real wages obtained as a result of depreciating the newly-reintroduced currency deliver the economy to the same full employment equilibrium that would have resulted from years of grinding deflation, only faster.

Note the assumption here: that whatever caused real wages to get out of line in the first place is not intrinsic to the economy, so that the problem will not recur. Thus, the Portuguese example contemplated here is described under the assumption that real wages have fallen out of line for reasons extrinsic to the operation of the economy – for example, irrational exuberance on the part of workers in the run-up to Stage III of the Maastricht process, something that will not recur. If, on the other hand, real wages are too high because of the existence of domestic distortions, for example the presence of powerful

[14] Or because the aggregate rate of growth, from which everyone benefits, depends on the national average level of costs. One can imagine still other formulations of this coordination problem. A survey is Cooper (1999).

trade unions that exclusively value the welfare of their employed members, then it is implausible that a different monetary-cum-exchange-rate policy will have an enduring impact.

There are similar counterarguments to the view that a country like Italy that reintroduced the lira in order to pursue a monetary-cum-exchange-rate policy that stepped down the value of the debt would necessarily be penalized with lower credit ratings and higher debt-servicing costs. Sovereign debt is a contingent claim; when debt is rendered unsustainable by shocks not of the government's own making and the source of those shocks can be verified independently, there are theoretical arguments for why investors will see a write-down as excusable.[15] Even when the country's debt problem is of its own making, credible institutional and policy reforms – strict legal or constitutional limits on future budget deficits, stronger independence to insulate the central bank from pressure to help finance future debts – may reassure the markets that past losses will not recur. The fact that the debt burden has been lightened similarly makes it look less likely that prior problems will be repeated. There is ample evidence from history that governments that default, either explicitly by restructuring or implicitly by inflating, are able to regain market access following appropriate institutional and policy reforms. The mixed findings of studies seeking to identify a reputational penalty in the form of higher interest rates are consistent with the view that this penalty can be avoided by countries that follow up with institutional and policy reforms reassuring investors that the experience will not be repeated. The implication is that the cost in terms of reputation may not be a prohibitive barrier to exit.

[15] See e.g. Grossman and van Huyck (1988).

How applicable is this scenario to countries like Italy? It is hard to argue that Italy's heavy debt burden is due to factors not of its own making. Italy does not have a reassuring history of guarding the central bank's independence or of adopting budgetary procedures and institutions that limit free-rider and common-pool problems. Whether exiting the euro area and reintroducing the lira would therefore result in credit-rating downgrades and increases in spreads sufficient to deter any such decision is an empirical question.[16]

The other economic barrier to exit cited in this connection is that a country that abandoned the euro and reintroduced its national currency might be denied the privileges of the single market. A country that reintroduced its national currency at levels that stepped down its labor costs by 20 per cent might be required to pay a 20 per cent compensatory duty when exporting to other members of the EU, reflecting concerns that it was unfairly manipulating its currency and solving its economic problems at the expense of its neighbors. Whatever the compensatory tariff, collecting it would require the reestablishment of customs posts and border controls, adding to transactions costs. Other states might seek to tax foreign investment outflows on the grounds that the defector was using an unfair monetary-cum-exchange-rate policy to attract FDI. In this climate of ill will and recrimination, they might seek to limit the freedom of movement of its citizens.

But it is not clear that other member states could or would respond in this way. Sweden, Denmark, the United Kingdom and all but one of the new member states have their own national currencies, yet they are not denied the privileges of the single market. If Germany, Italy or Portugal decided to join their ranks, it is not clear that it could be

[16] More on which below.

treated any differently under European law. To be sure, the UK, Sweden, the Czech Republic, Hungary and Poland do not presently participate in the ERM-II, and therefore there are no formal restrictions on the currencies' fluctuation. It can be objected that these countries anchor their monetary policies by inflation targeting, which frees them of accusations that they are manipulating their currencies relative to the euro. But a country like Germany that left the euro area out of dissatisfaction with the ECB's inflationary bias would presumably do likewise.[17] Even a country abandoning the euro because it saw a need to step up the price level as a way of addressing debt and unemployment problems might then adopt inflation targeting as a way of avoiding reputational damage. In turn this could insulate it from accusations that it was continuing to manipulate its currency. Countries can remain EU member states in good standing and enjoy all the privileges associated with that status without adopting the euro. To be sure, most of the new members have not adopted the euro because they do not yet meet the preconditions laid down by the Maastricht Treaty, where there is a presumption that this status is purely transitional. The UK, for its part, negotiated a derogation permitting it to remain outside the ERM and to retain sterling indefinitely as a condition for agreeing to the Maastricht Treaty. An Italy or Portugal that abandoned the euro would enjoy no such derogation. Would it then have to joint the ERM-II? But Sweden, alluding to the British precedent, announced unilaterally that it would not enter the ERM or follow a fixed schedule for adopting the euro. Is it clear that a Sweden that never entered the euro area should be treated differently, in terms of its access to the single market, than an Italy that left it?

4. Political Barriers to Exit

[17] Or, who knows, adopt a two-pillar strategy targeting inflation and a monetary aggregate.

More generally, a country that abandoned the euro and reintroduced its national currency because of problems of inadequate international competitiveness, high unemployment and slow growth might suffer political costs by being relegated to second-class status in negotiations over other issues. One interpretation of the process of monetary integration that culminated in the advent of the euro is that monetary integration is a stepping stone to political integration, which is the ultimate goal of the architects of the European Union. As the point was once put by Jacques Delors, "Obsession about budgetary constraints means that the people forget too often about the political objectives of European construction. The argument in favor of the single currency should be based on the desire to live together in peace."[18] Like the EU's blue flag with 12 yellow stars, the single currency is a visible symbol which fosters a sense of Europeanness among the continent's residents. As suggested by the theory of neofunctionalist spillovers (Haas 1958), the existence of the euro and the European Central Bank generates pressure for a more powerful European Parliament to hold the ECB democratically accountable for its actions.[19] A country that unilaterally abandons the euro, something for which there is no provision in the Treaty of European Union, would deal a setback to these larger political ambitions. It would signal that it did not attach high value to the larger process of political integration.

On both grounds such a country would be unlikely to be regarded as a respected interlocutor in discussions of how to push the process forward. An Italy that abandoned the euro would have a diminished role in discussions of how to strengthen the powers of the European Parliament. It would have less sway in discussions of how to revise and

[18] Cited in Prior-Wandesforde (2005), p.23.
[19] See Section 5 below.

ratify the European constitution. Other member states would be less likely to grant it a seat at the table in discussions of whether to formulate a common foreign policy or to create a European army. For better or worse, the common European position on such issues has grown out of discussions among a core of countries centered on France and Germany that first develop a common position and then sell it to the other members. For a country like Italy that has participated in this larger process of European integration from the foundation of the European Economic Community half a century ago, precisely as a way of elevating itself to the status of a "first-tier" European country, these political costs would be substantial. In turn this constitutes a major barrier to exit.

What about Germany? If Germany abandoned the euro out of dissatisfaction with excessively inflationary ECB policies, this would significantly diminish the prospects for political integration. Germany would be indicating that it regarded the experiment with a supra-national institution with real powers, in this case the power to make monetary policy, as a failure. The idea that Germany would then cede to other supra-national institutions at the EU level the power to make its security policy, its foreign policy or its fiscal policy, these being three of the key prerogatives of a sovereign state, would become less plausible. Germany has always been a strong proponent of the larger European project. Reflecting memories of World War II, it continues to feel limits on its ability to formulate an assertive foreign policy, maintain a standing army, and deploy troops abroad; at a basic level its interest in political integration is to regain a foreign policy voice in the context of an EU foreign policy. And without German support, European political integration is unlikely to display the same momentum.

Given this, Germany will presumably attempt to fix the problems it perceives with the ECB in order to salvage its vision of political integration rather than concluding that further integration is infeasible and abandoning the euro – or at least that it will invest more in seeking to fix perceived problems than another member state with a weaker commitment to the larger European process. It will choose voice and loyalty over exit, complaining publicly about the inflationary stance of ECB policy and lobbying to change it, precisely in order to demonstrate that supra-national European institutions can work and that its integrationist vision is still viable. This is not to deny that there could come a point where the German government and its constituents conclude that voice and loyalty have failed. But this argument does suggest that Germany may be prepared to suffer with a monetary policy not to its liking, and that it will work to change that policy rather than abandoning the euro, for longer than other member states less committed to the larger process.

Not everyone will agree that a monetary union process that adds to momentum for political integration is desirable on these grounds. Some would argue that the EU should concentrate on economic integration while shunning aspirations of political integration. For them, if a failure of monetary union means a failure of political union, then the latter is not a cost.[20] But for influential political elites, political integration remains a valued goal. For them, exits from the euro area that set back its progress would be a significant cost.

[20] This is not to say that the opponents of political union necessarily see the failure of monetary union as desirable, since the latter may have other benefits, including the impetus it provides to economic integration.

5. Procedural Barriers to Exit

A final set of barriers to exit are the technical and legal obstacles to reintroducing the national currency. Take the case where a country suffering from inadequate competitiveness and high unemployment reintroduces its national currency in order to depreciate it against the euro. It would be straightforward for it to pass a law stating that the state and other employers will henceforth pay workers and pensioners in, say, lira. With wages and other incomes redenominated into the national currency, it would become politically necessary to redenominate the mortgages and credit-card debts of residents into the national currency as well; otherwise currency depreciation would have adverse balance-sheet effects for households, leading to financial distress and bankruptcies. But with mortgages and other bank assets redenominated, bank deposits and other bank balance sheet items would have to be redenominated as well in order to avoid destabilizing the financial sector. With government revenues redenominated into the national currency, not just public-sector wages and pensions but also other government liabilities, notably the public debt, would have to be redenominated to prevent balance-sheet effects from damaging the government's financial position.

The idea that redenomination has to be comprehensive to limit financial distress is a lesson of Argentina's exit from convertibility in 2001.[21] It is also an implication of the literature on dollarization, where it is argued that partial dollarization creates scope for destabilizing balance-sheet effects. Better to be either fully dollarized (or euroized in the

[21] Note that across-the-board redenomination, while insulating domestic banks from destabilizing balance sheet effects, might create problems for foreign banks, which saw their euro-denominated investments in, say, Italian government bonds redenominated into lira and then saw this currency depreciate against the euro. This is another reason why other euro area countries would not welcome exit by an incumbent seeking to restore competitiveness by reintroducing and depreciating its national currency.

present example) or to de-dollarize (or de-euroize) by redenominating claims in the national currency (see e.g. Levy Yeyati (2005, 2006).[22]

Technically, nothing prevents the legislature from passing a law requiring banks, firms, households and governments to redenominate their contracts in this manner. But in a democracy this decision will require discussion. And for it to be executed smoothly, it will have to be accompanied by planning. Computers will have to be reprogrammed. Vending machines will have to be modified. Payment machines will have to be serviced to prevent motorists from being trapped in subterranean parking garages. Notes and coins will have to be positioned around the country. One need only recall the planning that preceded the introduction of the physical euro in 2002.

The difference between the transition to the euro and the transition back to national currencies is that in the first instance there was little reason to expect subsequent changes in exchange rates and thus little incentive for currency speculation, while in the second case such changes would be viewed as virtually inevitable. In 1998 the founding members of the euro area agreed to lock their exchange rates at the then-prevailing levels as of the beginning of 1999. This precommitment effectively ruled out efforts to depress national currencies designed to steal a competitive advantage prior to the locking of

[22] Argentina's experience also sheds light on another approach to exiting the euro area that has occasionally been proposed, namely reintroducing the national unit as a parallel currency. Italy would not have to leave the euro area or eliminate its euro circulation in order to reintroduce the lira, according to this scheme; it could simply reissue the lira and allow it to circulate side by side, along with the euro. The Argentine provinces did something similar in 2001 when they experienced serious difficulties in financing their current expenditures: they issued very short-term notes that circulated as quasi currency ("Patacones" in the case of the Province of Buenos Aires). The problem with this approach is that, absent trade restrictions, it will have no effect on the prices of goods and services on local markets; it will simply drive out a corresponding number of euros, via trade deficits. (This is what happened in Argentina: the more Patacones were issued, the more peso-denominated bank deposits were liquidated. Similarly, the more lira are issued, the greater the extent to which they will dominate the domestic circulation, until the point comes where only lira circulate domestically, and the parallel currency approach dissolves into the simple substitution of the domestic unit for the euro, after which exchange rate depreciation presumably follows. And seeing this outcome coming, holders of euro-denominated claims will flee Italian banks and markets in advance, precipitating the same kind of financial crisis.

parities in 1999. In contrast, if a participating member state now decided to leave the euro area, no such precommitment would be possible. Pressure from other member states would be ineffective, by definition. And the very motivation for leaving would presumably be to change the parity.

Market participants would be well aware of this fact. Households and firms anticipating that domestic deposits would be redenominated into lira, which would then lose value against the euro, would shift their deposits to other euro-area banks. In the worst case a system-wide bank run could follow. Investors anticipating that their claims on the Italian government would be redenominated into lira would presumably shift into claims on other euro-area governments, leading to a bond-market crisis. If the precipitating factor was parliamentary debate over abandoning the lira, it would be unlikely that the ECB would provide extensive lender-of-last-resort support. And if the government was already in a tenuous fiscal position, it would not be able to borrow to bail out the banks and buy back its debt. This would be the mother of all financial crises.

Presumably the government would respond with a "corralito," Argentine style, limiting bank withdrawals. It would suspend the operation of the bond market, although this might be of limited effectiveness insofar as the same bonds and derivative instruments based on them are also traded on other national markets. But all this would almost certainly be costly in terms of output and employment. It would be hard to keep production going while the financial system was halted in its tracks; this is a clear lesson of Argentina's 2001-2 crisis.

When the ruble zone broke up in the 1990s and new national currencies were introduced, the successor states of the former Soviet Union were able to limit the

destabilizing financial consequences because their banking and financial systems were not well articulated, so that limits on deposit withdrawals and other forms of arbitrage were relatively effective. They could limit the substitution of foreign for domestic assets by imposing or simply retaining exchange controls, an option that is not available to EU members with commitments to the single market. They could seal their borders to provide time to stamp old currencies or swap old currencies for new ones. Firms did not have computerized financial accounts and inventory-management systems. Europe today is a more complicated place. All this means that the technical obstacles to exit may be greater than in the past. While these technical obstacles may be surmountable, they pose greater challenges than in earlier instances where monetary unions broke up.

The same lesson is evident in the break-up of the Czechoslovak monetary union in 1993.[23] The Czechs and Slovaks agreed to political separation as of January 1st, 1993 but initially kept their monetary union in place in order to minimize dislocations to trade and economic activity. It was clear from the start, however, that politicians in both countries were actively contemplating exit. The monetary arrangement signed in October 1992 establishing the Czech-Slovak currency union in fact made provision for exit (unlike the Treaty of European Union). The union could be abandoned (equivalent to exit, given that there were only two participants) if a member ran an excessive budget deficit, if it suffered excessive reserve losses, if there were excessive capital flows from one republic to the other, or if the monetary policy committee was deadlocked.[24] Although the Czech and Slovak Republics initially agreed to maintain a common

[23] See Fidrmuc, Horvath and Fidrmuc (1999).
[24] Under the provisions of the agreement, the Czechoslovak central bank was dissolved and replaced by a Czech National Bank and a National Bank of Slovakia. The common monetary policy was made by simple majority vote of a six-member committee made up of the governors and two senior officials from the two banks.

currency for a minimum of six months, the markets did not find this agreement credible; they expected the Slovak authorities to push for a much looser monetary policy and that their Czech counterparts would not accept the consequent high inflation. The result was a flight of currency and deposits from Slovakia to the Czech Republic. Given their divergent preferences and the market's lack of confidence in the monetary union, the authorities decided in favor of monetary separation. The demise of the monetary union was announced on February 2nd, just five weeks after it had commenced operation, and separate national currencies were quickly introduced. Czechoslovak banknotes were stamped and then replaced with new national banknotes. During this period, no currency was allowed to be transferred or exported abroad.[25]

This case suggests that monetary separation is technically feasible under some circumstances. Some of the technical problems of introducing a national currency were solved by stretching out this process over time. Old Czechoslovak bank notes were stamped during the second week of February, but the process of introducing the new Czech and Slovak banknotes was only finally completed in August. The problem of adjusting vending machines and parking garages was addressed by allowing old Czechoslovak coins to continue to circulate in both countries for up to six months.

But the circumstances that made this possible were quite different from those in the euro area today. The commercial banking system was only just getting up and running in the Czech Republic and Slovakia. The authorities adopted elaborate clearing mechanisms to limit withdrawals from and strains on their respective banking systems. Trading of shares in then-Czechoslovak companies acquired as a result of the voucher

[25] Although there was apparently some movement some of unstamped banknotes from Slovakia to the Czech Republic during the period when stamping took place, since borders were not sealed to individual foreign travel.

privatization got underway only in May 1993 – that is, three months after exit from the monetary union. Thus, there was limited scope for arbitrage between national banking systems and securities markets. There were few institutional investors in a position to shift large financial balances from one successor state to the other.

Moreover, in the period leading up to the monetary separation, extensive capital controls were already in place. These slowed capital flight from the Slovak Republic in particular, where the new currency was expected to weaken, although they did not halt them. Payments between the two republics were halted completely at the beginning of February while the details of the separation were ironed out. This protected the banking system, especially in the Slovak Republic, from capital flight.

Finally, the fact that the old Czechoslovak currency disappeared at the end of the six month transition eased the process of dissolving the currency union. In the case of an individual member exiting from the euro area, in contrast, the euro would continue to circulate in the rump euro zone (whose size would presumably be considerable). Were Italy for example to exit the euro area, stamp the euro area bank notes of residents or replace them with new Italian banknotes, and impose restrictions on capital flows for the period of the currency exchange, Italian residents would be able to simply hold onto their euro cash and coins and then export them once the restrictions were lifted. This would make operations designed to exchange Italian residents' euro banknotes for the new national currency – as opposed to injecting new national currency notes in addition to existing euro banknotes – considerably more difficult.

The need for extraordinary measures is also the clear lesson of the break-up of earlier monetary unions like that of the successor states to the Austro-Hungarian

Empire.[26] Austria, Hungary and the other ethnic regions of the empire all successfully introduced national currencies following World War I. Previously they had operated a formal monetary union, with control of the circulation vested in the Austro-Hungarian bank in Vienna. The component parts of the empire constituted a free trade zone, and both real and financial integration were extensive. At the same time, like EMU today, constituent states (Austria and Hungary) decided on separate budgets while contributing to some of the expenditures of the union.

Ethnic demands for autonomy boiled up during World War I. Vienna, occupied elsewhere, lost the capacity to assert its control over non-Austrian parts of the empire. Other regions held back food supplies, disrupting the operation of the internal market. Czechs and other ethnic groups withdrew from the military alliance, siding with the Allies. With the armistice, the Czechs, Poles and Hungarians declared their political independence and sought to establish and defend their national borders. They also abandoned prior restraints on their fiscal policies, partly owing to postwar exigencies, partly in reflection of the value they now attached to political sovereignty. Importantly, however, the Austrian crown remained the basis for the monetary circulation throughout the former empire. This was awkward for separate sovereign nations that did not share in the seignorage, experienced asymmetric shocks, and suffered from chronic fiscal and financial imbalances.

Starting with Czechoslovakia and the Kingdom of Serbs, Croats and Slovenes (Yugoslavia), one successor state after another left the monetary union and introduced a national currency. Typically, this involved first announcing that only stamped Austrian banknotes would be acceptable in transactions. Stamping (either overprinting with an ink

[26] See also Dornbusch (2002) and Eichengreen (2007).

stamp or adding a physical stamp) had to be conducted carefully, with a high level of uniformity, to discourage forgery. At the same time the currency was stamped, a portion was withheld as a capital levy (as a way of transferring desperately needed resources to the government). In Hungary, for example, 50 per cent of tendered notes were withheld as a forced loan. In Czechoslovakia, the 50 per cent tax was applied to current accounts and treasury bills when these were redenominated in stamped crowns. In turn this created an incentive to withhold currency from circulation if there were prospects of using it in other countries where stamping had not yet taken place. Thus, there was an incentive for capital flight not unlike that which might afflict an inflation-prone country today that chose to opt out of Europe's monetary union.

Stamping was therefore accompanied by the physical closing of the country's borders and the imposition of comprehensive exchange controls. Individuals were prohibited from traveling abroad, and merchandise trade was halted. The capital levy, equivalent to depreciation of the new currency against the old one, could also precipitate a run on the banks, as it did in Czechoslovakia. In Austria, which could observe Czechoslovakia's earlier experience, bank securities and deposits were frozen at the outset of the transition. Again, avoiding serious financial dislocations required closing the borders, banning foreign travel, halting merchandise trade, and imposing draconian exchange controls while the conversion was underway. The feasibility of similar measures today is dubious.

Finally, what about a country, say Germany, that might wish to leave the euro area because other governments had successfully pressured the ECB to run inflationary policies? The procedural difficulties in this case would be less. Here the expectation

would be that the deutschemark, once reintroduced, would appreciate against the euro. There would be no incentive to flee German banks and financial markets but rather an incentive to rush in, given this one-way bet on appreciation. The challenge for Germany would thus be massive capital inflows in the period when exit from the euro area was being discussed. The result would be inflation, a booming stock market, and soaring housing prices.[27] Soaring asset valuations are less uncomfortable than collapsing ones, but the financial dislocations would still be considerable.

These uncomfortable financial consequences would in turn constitute a disincentive to contemplate exiting. Germany faced similar problems in the 1960s, when it was widely anticipated that the deutschemark would be revalued against the dollar. But at that point in time it was able to impose capital controls to limit inflows. Germany reimposed controls in 1960-61, in the period prior to the first revaluation of its currency. In mid-1970, the country then imposed discriminatory minimum reserve requirements against nonresident bank deposits and from May 1971 required prior authorization for the sale of money-market paper and certain fixed-interest securities to foreigners. Similar responses would be difficult in the context of the single market (assuming, as seems plausible, that Germany would still wish to preserve its single market obligations).[28]

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[27] The symmetry between buying and selling attacks on currencies is the subject of Grilli (1986).

[28] The closest precedent for exit by a strong-currency country of which I am aware was the possibility that Luxembourg might exit from its monetary union with Belgium in 1993. The EMS crisis of that year had led to currency devaluation by a number of participating countries, and in the summer Germany and the Netherlands considered the possibility of unilaterally exiting from the ERM rather than facing pressure to inflate along with Belgium, France and the others. At this point the authorities in Luxembourg evidently contemplated following the deutchemark and the guilder rather than the two francs, which would have required them to break their monetary union with Belgium. In fact, Luxembourg had established a proto-central bank (the Luxembourg Monetary Institute) a decade earlier, in 1983, when the Belgians had unilaterally realigned with engaging in prior consultations with their monetary union partner. (Ironically, the prime minister of the Luxembourg at the time was Pierre Werner, commonly regarded as one of the fathers of the euro.) From the early 1980s Luxembourg also evidently maintained a stock of coins and banknotes for the contingency that it might have to exit from its monetary union with Belgium. (See former prime minister Juncker's enterview with Agence Presse France, summarized at

This case can, in fact, be argued both ways on procedural grounds. It can be argued that Germany could insulate its economy from the impact of the capital inflows loosed by its reintroduction of the deutschemark because German interest rates would be lower than foreign interest rates and the risk premia associated with investing in Germany would be lower as well. Thus, the Bundesbank would be able to sterilize the inflows associated with its reintroduction of the national currency.

Goodhart (2008) – in a note written partly in response to the present paper – questions the relevance of this German-exit scenario. He observes that the ECB enjoys statutory independence. It has a mandate to pursue price stability. Its board is made up of professional central bankers who have internalized arguments for the value of low inflation. Changing the status quo and exposing the ECB to effective political pressure would requite amending the international treaty that established the ECB and the euro – something that Germany could veto. European politicians can posture all they want. They can take whatever measures they wish to elevate the visibility of the Euro-Group of finance ministers. But their statements and actions are unlikely to weaken the ECB's commitment to price stability. And, if Goodhart is right, the German exit scenario has a vanishingly small probability.

6. Legal Barriers to Exit

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http://news.bbc.co.uk/2/hi/business/1677037.stm. The implications for the present argument are unclear because Belgium ultimately did not devalue against the guilder and the deutschemark in 1993. Whether Luxembourg, with its open capital markets and highly developed financial system in fact could have smoothly broken its monetary link with Belgium is, at a minimum, an open question. What is revealing, however, is that Luxembourg chose to destroy its stock of national notes and coins in 2002 when the physical euro came into existence.

Even if there is agreement that the transition would be smoothed by redenominating all Italian debt contracts into lira, there is the question of what exactly constitutes an Italian debt contract. Not all such contracts are between Italian debtors and Italian creditors, are issued in Italy, and specify Italian courts for adjudicating disputes. Italian companies issue bonds abroad and borrow from foreign banks. Foreign multinationals sell bonds in Italy. Foreigners hold the bonds of Italian governments. A further complication is that contracts are not simply being redenominated from one Italian currency to another; rather, they are being redenominated from a European currency to an Italian currency. Foreign courts might therefore take EU law as the law of the currency issuer (Italy) and invalidate the redenomination of certain contracts.

Mann (1960) argues when a case involves two competing currencies the courts should apply the law specified in the contract. For instruments like Italian government bonds issued domestically, this is Italian law. But foreign laws govern a variety of other Italian financial instruments, such as corporate bonds issued abroad. And in some cases no explicit choice of law is specified in the contract. This is the case, for example, of loans by German banks to Italian corporations or purchases of parts in Germany by Italian manufacturing firms. Italian courts would presumably rule in favor of the redenomination of all loans to Italian borrowers, including those from German banks, but German courts might rule against redenomination. And there are few precedents to guide the courts' decision in such circumstances.[29] This opens the door to litigation and to an extended period of uncertainty.

[29] Technically, the country in which delivery is physically taken (where the transaction is physically completed) should be the one whose law governs international contracts. In the present instance, this would be German law if the Italian company's truck drives to Stuttgart to pick up parts at the German factory but Italy if the German company's truck is used to transport the parts to the Italian assembly plant.

Still, Argentina's dealings with its creditors suggest that the government of a country altering its currency arrangements is in a relatively strong position. While that case also gave rise to litigation in a variety of venues, it did not force the re-dollarization of previously pesified contracts or force other compensation to aggrieved creditors. But cases involving suits against Italian debtors in the courts of other European countries and in the European Court of Justice could be messier. And the Italian government would be loath to disregard their judgments insofar as it attached value to the country's other links with the European Union.

7. Evidence

Since 2002, Eurobarometer has conducted annual surveys of public opinion regarding the euro in the participating member states. Here I analyze answers to the question: "In your opinion, for [COUNTRY], is the adoption of the euro advantageous overall and will it strengthen us for the future, or rather the opposite, disadvantageous overall and will it weaken us?" Figure 1 shows the pattern of responses from the most recent survey at the time of writing. Evidently, the euro is least popular, as measured here, in low-income euro-area member states (Greece, Portugal) and slowing growing economies (Italy and again Portugal), but also in the Netherlands (where concerns are disproportionately over inflation – see Figure 2).

Table 1 shows regressions of the share of the population, by country and year, that views the euro as disadvantageous. The dependent variable, a logit transformation of this share, is regressed on inflation and growth in the current year.[30] The results are

[30] One can imagine more sophisticated specifications, but the limited amount of data available do not really permit their estimation.

consistent with the notion that higher inflation raises dissatisfaction with the euro, while higher growth reduces dissatisfaction. In the basic regression on pooled data, in column 1, the growth term is statistically significant at conventional levels, while the inflation term is not quite significant. When year effects are added in column 2, the coefficients on both the inflation and growth terms differ significantly from zero at standard confidence levels. When we estimate the same equation with random country effects in column 3, it is the inflation term but not the growth term that is statistically significant.

Thus, while there are not enough data to obtain precise point estimates, there are consistent indications that slow growth and high inflation could fan dissatisfaction with membership in the euro area.[31]

The second empirical exercise has in fact been undertaken by Hallerberg and Wolff (2006), although they do not draw out the implications for exit from the euro area. They test whether both membership in the monetary union and fiscal reforms that reduce deficit bias have a negative impact on sovereign borrowing costs. Thus, they speak at least obliquely to the hypothesis that a country could minimize any adverse impact on debt-servicing costs of abandoning the euro by strengthening its fiscal institutions. They estimate panel regressions with country fixed effects for ten EU member states, where the dependent variable is the yield on ten year government bond rates relative to the corresponding German yield and the period covered is 1993-2005. This spread is regressed on the difference in the budget deficit between country i and Germany, and the difference in the public debt/GDP ratio between country i and Germany. Control variables include a measure of market liquidity and a measure of global risk aversion.

[31] It is also possible to analyze the individual survey responses in order to see how sentiment toward the euro varies with education, gender, urbanization etc. See Jonung and Conflitti (2008).

The key explanatory variables are then a dummy variable for membership in the euro area and the strength of fiscal institutions, which are entered by themselves and interacted with the deficit measure.[32]

The authors follow von Hagen (1992) in arguing that deficit bias reflects a common pool problem: that special interests benefiting from additional public spending fail to internalize the implications for the deficit and therefore for the government's borrowing costs. They argue that this bias can be minimized by assigning authority over the budget to a single individual, the finance minister, who will have a greater tendency to internalize such effects. They operationalize this idea by constructing an index measuring the ability of the finance minister to affect the budget. They also consider a survey-based measure of the structure of the budget process and a synthetic measure that relies not on delegation but on fiscal targets for countries where the ideological distance between coalition partners is large and therefore delegation is unlikely to be effective.[33] Results are similar for the alternative measures, so I discuss the most straightforward ones, those for delegation of authority to the finance minister, here.

Higher debts and deficits increase spreads, although the effects are small. The effect of EMU is also evident: an increase in the deficit by 1 per cent of GDP raises the spread by 4 basis points for a non-euro-area country but only by 1.5 per cent for a euro-area member. An increase in the finance minister's powers from Portuguese to Austrian levels reduces the spread by 2 to 4 basis points; it also reduces the impact of an increase in the deficit by one per cent of GDP by 2 basis points. These results are consistent with

[32] In addition, the EMU variable is interacted with the measure of market liquidity and with the debt ratio.
[33] In addition they consider a measure of the degree of the legislature or parliament over the budget (Lienert's (2005) parliamentary index). However, it is possible to raise questions about the relevance of this particular measure to the issues at hand. Hence I do not consider it further in what follows.

the hypothesis that EMU and strengthened budgetary procedures are alternative ways of strengthening fiscal discipline.[34] They suggest that countries exiting the monetary union can avoid higher interest costs if they put in place efficient budgetary procedures that mitigate common-pool problems. At the same time, the size of the effects is small. Just 4 ½ additional basis points for a euro area country whose deficit grows from zero to 3 per cent of GDP makes one wonder whether these estimates are picking up the full effect or if something else is going on. One explanation for why economic policies and institutions do not have a larger impact on spreads is that the ECB carries out open market operations in the bonds of all its members, regardless of the strength of their policies and institutions; this does not force spreads to equality but may limit differentials.[35]

I further investigated the robustness of these results by analyzing the impact of EMU and fiscal institutions on sovereign credit ratings. This involved analyzing their impact on three credit-rating measures: Fitch's, Standard and Poor's, and an average of the two rating agencies. In the interest of space, here I report the results using the average of the two ratings as the dependent variable.[36] The country sample and period are essentially the same as in the Hallerberg and Wolff study, since the analysis is constrained by the availability of their indices of fiscal measures. One difference here is

[34] The assumption underlying this interpretation is that the smaller impact of deficits on spreads in euro area countries reflect the disciplining effect of the monetary union – that deficits will not persist, or that larger deficit now will be followed by smaller deficits later – rather than myopia on the part of governments or that the latter will receive a debt bailout from their partners in the event of fiscal difficulties.

[35] More precisely, the ECB assigns the short-term sovereign debt instruments of all euro-area member governments to the same (highest) liquidity category, implying the lowest haircut when accepting them as collateral. Since the ECB mainly accepts short-term instruments in its market operations, it is these on which spreads should show the strongest tendency to converge. Spreads on the longer-term instruments considered by Hallerberg and Wolff are then freer to vary, although they will still be affected by the term structure relationship. See Buiter and Sibert (2005).

[36] The additional results for Fitch and S&P separately are available on request. The Fitch and S&P letter scores are both converted to a numerical score ranging from 1 to 21.

the use of quarterly data: the fiscal measures are available at a quarterly frequency, and the credit ratings can be sampled at the end of each quarter. Another difference is that I look at the absolute level of credit ratings, not ratings (or spreads) relative to Germany (and not the strength of fiscal institutions relative to Germany).[37]

I start with a simple panel regression of the credit rating(s) on the measure of fiscal institutions (in column 1 of each table). Year fixed effects are then added (column 2), and if these are jointly significant they are then included in the remaining regressions. Column 3 adds country effects (using the Hausman test to choose between fixed and random effects). Column 4 adds the entire vector of macroeconomic and financial variables. The empirical specification follows Christensen and Solomonsen (2007), who estimate empirical models of credit ratings; the main difference here is the addition of interaction effects for euro area countries, plus the use of total debt rather than public debt (following Hallerberg and Wolff). Finally, I incorporate improvements in the measures of fiscal arrangements developed by the authors since the appearance of their earlier working paper.[38] Specifically, I employ three measures of fiscal arrangements: "Strong Finance Minister" (a measure of the power of the finance minister during budget negotiations in the cabinet and with parliament), and "Index S2" (the authors' synthetic measure that relies not on delegation to a strong finance minister but on fiscal targets for countries where the ideological distance between coalition partners is large), "Fiscgov" (the authors' survey-based measure of the degree of centralization of the budgetary process). All three measures are scaled so as to vary from zero to one, with larger values indicating arrangements better suited for resolving common pool problems.

[37] As a result, I have an additional set of country observations for Germany itself.
[38] And kindly made available by Mark Hallerberg.

The results, in Tables 2 through 4, are broadly consistent with those using spreads as the dependent variable, although there are some anomalies.[39] All three measures of the centralization of fiscal policy making are positively associated with the rating agencies' measures of credit quality. This remains the case, except for Index S2, when a wide range of controls are included in the estimating equation. Macroeconomic and financial conditions generally affect ratings in the expected direction, although their effects are not always significant at conventional confidence levels. Inflation, unemployment, large current account deficits, and high debts lower ratings. So far, so good.

Evidence on whether adopting the euro attenuates the impact of macroeconomic and financial imbalances on credit ratings is mixed. Consistent with the hypothesis, the negative effects of inflation and unemployment on credit ratings are attenuated by participation in the monetary union. Countries with large current account deficits suffer less in terms of credit rating if they are members of the monetary union. The one uncomfortable result is that the interaction of the EMU dummy with the debt ratio (general government consolidated gross debt as a percentage of GDP) is negative, not positive as anticipated under the maintained hypothesis. This coefficient is zero in the final column, where the lagged dependent variable is included (as seems to be preferred by the data), which makes the result somewhat less perplexing. Sensitivity analysis – dropping countries one by one – reveals that these anomalous results are driven by Belgium. Without the observations for this one country, one obtains a negative and significant coefficient on the debt/GDP ratio and a smaller positive and significant coefficient on the debt/GDP ratio interacted with EMU. This is not entirely surprising in

[39] I adopt the same variable names as Hallerberg and Wolff for ease of comparison, except that I refer to the squared deviation of real GDP per capita from trend as "Trend Deviation" (or simply "Deviation") as opposed to "Sustainability" to avoid confusion with debt sustainability.

that Belgium has long had a relatively high credit rating despite its very high government debt, for reasons that are not entirely clear.

One interpretation of these results is that any increase in debt-servicing costs experienced by a country like Portugal abandoning the euro can be neutralized by reforming fiscal institutions to delegate more authority to the prime minister, addressing concerns over the common-pool problem and reassuring investors that exit will not result in a loss of fiscal discipline. The financial disincentive may not, therefore, be an insurmountable obstacle to abandoning the euro.

One reason for questioning these results is that the impact of debts and deficits – euro adoption and fiscal institutions notwithstanding – are suspiciously small in these regressions, as in the earlier work of Hallerberg and Wolff on interest rate spreads.[40] One worries that, for whatever reason, these results are not picking up the entire effect of fiscal conditions, current and prospective, on credit ratings. But the fact that the rating agencies do not dramatically differentiate between fiscally messy Belgium and Italy and fiscally responsible Finland and Ireland is widely commented upon – just as it is noted that markets differentiate between them relatively little in terms of interest rate spreads. If there is an anomaly, in other words, it would appear to be in the behavior of investors and rating agencies rather than in the econometrics.

In addition, one worries that ratings fail to reflect differences in current fiscal conditions among euro area countries not because the euro represents a commitment to get one's fiscal house together in the not too distant future but rather because fiscally

[40] Thus, an increase in the debt ratio from 50 to 100 per cent of GDP is expected to lower a country's credit rating by just one notch, from say A to A-. This small effect is a widely commented upon phenomenon (see e.g. Buiter and Sibert 2005), although here it applies not just to euro area but also non-euro area countries.

profligate governments can expect a debt bailout from their euro area partners. At the same time, the prospects for a bailout can be questioned. And even if the mechanism making for rosier future prospects is a bailout rather than fiscal reform, this does not change the argument that a potential benefit of euro area membership is an easier fiscal ride. One worries that in a more turbulent environment (out of sample) the results might differ – although it is not entirely clear why the Lucas Critique would apply in this context. Finally, to the extent that fiscal rules are endogenous (to the extent that they reflect the same political pressures that lead to large observed deficits), it may be naïve to think that a country abandoning the euro because of chronic deficit problems will then be able to turn around and strengthen its policy-making institutions. That said, it is interesting to observe that Italy succeeded in significantly strengthening the ability of the finance minister to affect the budget following the 1992 crisis that ejected it from the Exchange Rate Mechanism of the European Monetary System and presumably weakened the disciplining effect of EMU on its budget.[41]

Finally, it is possible to compare these results with Standard & Poor's own exercise (S&P 2005). S&P considered the impact of a country leaving the euro area in 2006 using its own proprietary model (which similarly regresses ratings on a range of indicators intended to capture political, economic and financial conditions). It was assumed that a country leaving the euro area was able to successfully depreciate the real exchange rate, restoring it to the average level prevailing in the 1990s, something that had the effect of improving ratings, other things equal. But it was also assumed that interest rates on government debt rose by 100 basis points. Thus, the conclusion was that leaving

[41] The same was true of, inter alia, Spain and Finland according to the indices of Hallerberg and Wolff (2006).

the euro area would have relatively little effect on ratings for lightly indebted countries that had suffered significant deteriorations in their competitiveness, but a significant negative effect on heavily indebted members whose competitiveness losses had been limited (Greece, Italy, Portugal, Spain and Belgium). The main difference from the exercise in this paper is that S&P assumed no further change in current or expected future fiscal policies and procedures. Its analysis does not contradict the point that significant fiscal reform could offset the impact on ratings of abandoning the euro; it simply does not consider the possibility.

8. Reforms to Avert a Breakup

If one wishes to minimize the likelihood of breakup, then what kind of reforms are needed? Here there is no magic potion, only the standard measures pointed to by the literatures on optimum currency areas and the democratic accountability of economic policy makers.[42]

Measures to further enhance labor mobility within the euro area are a first set of reforms pointed to by OCA theory.[43] Regulations to ensure that French ski resorts extend equality of treatment to instructors trained in other European countries – and, more generally, removing residual barriers to the mutual recognition of technical credentials, the portability of pensions, and the receipt of social services in the new labor market –

[42] An earlier attempt to ask these same questions is Cohen (2000).

[43] Supplemented by measures to enhance the flexibility of real and nominal wages. ECB (2007) argues that real wages remain less flexible in the euro area than in the United States and that the degree of wage bargaining centralization and percentage of employees organized in trade unions – factors likely to condition the extent of such flexibility – have remained largely unchanged. At the same time, there has been a reduction of wage minima affecting young people and the implementation of sub-minimum wage regulations for youths in some euro area countries, which some would argue has enhanced wage flexibility in certain segments of the labor market. Such arguments would suggest that further reforms along similar lines would make it easier for countries suffering shocks requiring downward wage adjustment to cope with the single currency. This would appear to be the ECB's own view (see the same reference).

will relieve the pressure that countries with depressed labor markets otherwise feel to do something, anything, including reintroducing the national currency, to address their unemployment problem. Concretely, the EU has made some progress in the requisite direction, making qualifications more transparent and transferable by creating a standard portfolio of documents ("the Europass"), removing many remaining administrative and legal barriers to mobility, coordinating cross-border social security provisions through the introduction of a European health insurance card, and making occupational pension rights more portable.

Note however some uncomfortable implications of this advice. Facilitating labor mobility within the monetary union implies reinforcing barriers to immigration, legal and illegal, from outside the union. Australia allows citizens of New Zealand to work freely in its country, and vice versa, but only New Zealand permits the relatively free immigration of citizens of Fiji.[44] Customs and immigration officials in Australia spend much of their time repatriating illegal Fijian immigrants entering through New Zealand, straining the arrangements designed to ensure integration of the two national labor markets. In the European context, limiting the strains on the labor markets of the countries on the receiving end of the labor flow and hence the political fallout may require limiting immigration from outside the union. Among other things this may mean limiting labor mobility from North Africa and the Middle East, regions where earnings differentials vis-à-vis the EU are large and the efficiency effects of freer labor mobility would be especially pronounced.[45] Harsh treatment of undocumented immigrants from these countries may also create strains with their governments, which would not be

[44] For whose foreign policy it has traditionally borne responsibility.
[45] For arguments to this effect see Rodrik (2002) and Bhagwati (2003).

helpful for an EU that is trying to encourage democratic values and market-oriented economic development in what is sometimes referred to as "Wider Europe."

One can even imagine differential treatment of workers from EU member states that have and have not adopted the euro. Allowing, indeed encouraging, workers to relocate freely within the monetary union would become more uncomfortable politically if workers from member states from outside the euro area were also permitted to freely migrate to relatively prosperous euro area member states. One can imagine political pressure to situate the immigration ring-fence at the borders of the euro area, not at the borders of the EU itself. In the short run this would create problems for the Schengen Agreement, which has been implemented by Denmark and Sweden as well as most euro area member states.[46] In the longer run it is likely to create strains between EU members inside and outside the fence and disrupt the operation of the single market. The idea that euro area member states would only take measures to further enhance labor mobility among themselves if there was also a credible barrier against immigration from tiny, prosperous Denmark is not especially compelling, but one can imagine such concerns becoming serious if and when, say, Turkey is admitted to the EU.

Measures to enhance the countercyclical use of fiscal policy are the other reforms pointed to by the literature on optimum currency areas. European countries are uncomfortable with their loss of monetary autonomy because, having tied the monetary hand behind their backs, they have little scope for using fiscal policy countercyclically. Inherited debt ratios are high, which means that increasing deficit spending in slowdowns threatens rating downgrades and increases in borrowing costs. The Stability and Growth Pact, whatever the practice, in principle limits the scope for discretionary fiscal policy

[46] And by Norway and Iceland.

and even automatic stabilizers in countries close to or exceeding its 3 per cent of GDP threshold for excessive deficits. To be sure, for countries like Portugal, where the problem is excessive labor costs and inadequate competitiveness, expansionary fiscal policy to boost aggregate demand is beside the point; the imperative is to cut labor costs, and using fiscal policy might only slow the inevitable adjustment while threatening debt sustainability. Still, one can imagine a variety of other countries suffering negative aggregate demand shocks that can be offset by temporary increases in budget deficits that would benefit from greater freedom to use fiscal policy in countercyclical fashion.

For them, reforms of the Stability Pact that encourage governments to run budgets close to balance or even in surplus in good times, so that they can allow deficits to widen in bad times, would make life with the euro more comfortable.[47] My own view is that reform of the Stability Pact should encourage changes in fiscal institutions and procedures that work to solve common-pool and free-rider problems and thereby contain deficit bias in good times.[48] The alternative where the European Commission and

[47] Ti be clear, I am not arguing that the 3 per cent ceiling is too low, but rather that it leaves inadequate room for countercyclical policy because deficits are excessive in good times. I assume that the Stability Pact will be analyzed in another paper for this conference. In any case there are too many alternative reform proposals for these to be usefully surveyed here. See Fischer, Jonung and Larch (2007) for a survey of alternatives.

[48] On fiscal decentralization as a source of common pool problems, see Rattso (2003) and Eichengreen (2003). My own scheme for reform is as follows. The rationale for the Pact is that deficits today may imply deficits tomorrow, and that chronic deficits will force the ECB to provide an inflationary debt bailout. But not all deficits are equally persistent. Chronic deficits are a danger only where countries fail to reform their fiscal institutions. Countries with large unfunded pension liabilities, like Greece and Spain, will almost certainly have deficits down the road. Where workers are allowed to draw unemployment and disability benefits indefinitely, deficits today signal deficits tomorrow. Countries that have not completed privatizing public enterprise, like France, are similarly more likely to find future fiscal skeletons in the closet. Where revenue-sharing systems that allow states and municipalities to spend today and be bailed out tomorrow, central governments will almost certainly suffer chronic deficits. Thus, the Pact should focus not on fiscal numbers, which are arbitrary and easily cooked, but on fiscal institutions. The Council of Ministers could agree on an index of institutional reform with, say, a point each for privatization, pension reform, unemployment insurance reform, and revenue sharing reform. It should then authorize the Commission to grade countries accordingly. Those receiving four points would be exempt from the Stability Pact's guidelines, since there is no reason to expect that they will be prone to chronic deficits. The others, in contrast, would still be subject to warnings, sanctions, and fines.

Council agree to fines and sanctions against countries whose deficits are deemed excessive assumes a level of political solidarity – a Europe in which different nationalities view themselves as members of a common polity, such that a majority of members can impose fines and sanctions against a renegade minority – that does not exist and is unlikely to exist for the foreseeable future. In the absence of deeper political integration, in other words, a Stability Pact with anything resembling the current structure is unlikely to be enforceable.[49]

The same conclusion applies to proposals to strengthen the operation of the monetary union by supplementing it with a European system of fiscal federalism. A system of temporary transfers among member states or an expanded EU budget where contributions and expenditures are keyed to a member state's relative economic situation could provide an alternative to a national monetary policy as a buffer during periods of cyclical divergence.[50] Economic activity would be more stable, since intra-country transfers would render demand more stable. But making such transfers effective would require significant expansion of the EU budget, especially insofar as the majority of that budget is tied up in agricultural subsidies and ongoing transfers to relatively low-income member states. And, again, significantly increasing the share of tax revenues that member states pay to the EU and whose disposition is then decided by the member states as a group would require a level of political solidarity that does not exist.

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[49] This argument has a long lineage; see inter alia Kindleberger (1973) and Eichengreen (1997). As DeGrauwe (2006) puts it, while the European Commission decides when a country's deficit is excessive and its government must therefore cut spending and raise taxes, it is the national government that must implement those tax increases and spending cuts and will be rewarded or punished for doing so by its constituents. In contrast, the Commission cannot be replaced except in the event of dereliction of duty. In effect the Commission – and therefore the Stability and Growth Pact – lacks democratic legitimacy. It will continue to lack such legitimacy until European political integration proceeds further and results in, inter alia, direct election of the Commission.

[50] Early influential statements of this view were Inman and Rubinfeld (1992) and Sala-i-Martin and Sachs (1992).

Another way of thinking about this is that fiscal federalism is an insurance pool through which members of the monetary union that are temporarily better off assist their brethren who are temporarily worse off – that participants require a system of collective self-help if they are going to willingly expose themselves to the vicissitudes of monetary union. Rodrik (1996) has made an argument like this to explain why more open economies have larger governments – that their citizens are willing to expose themselves to the risks of trade openness only if they can count on help from their stronger neighbors in the event of a temporary worsening of their economic situation due to international competition. The analogy here is that countries suffering temporary unexpected economic costs as a consequence of their participation in the monetary union would accept the latter only if they can expect temporarily transfers from their neighbors to buffer the effects. The difference is that Rodrik's argument applies to citizens of the same country, where the present argument concerns transfers between sovereign states. One suspects that the citizens of different countries will be less enthusiastic about giving money to one another; lacking a common national identity, they lack the requisite political solidarity, absent significant steps toward political integration at the European level.[51] The European Union is made up of diverse national identities, and absent a sense of European identity resistance to such transfers may be considerable.[52] At the level of the EU there is also the question of whether a system of inter-state taxes and transfers could be agreed on for a subset of member states – those participating in the monetary union – without the active involvement of non-euro area members.

[51] In addition, Rodrik's premise and central result have been questioned by Alesina and Wacziarg (1998), who argue that the actual association is between government spending and country size, with small countries both spending more on public consumption and being more open to trade.

[52] Thus, authors like Alesina, Baqir and Easterly (1999) show that more diverse political jurisdictions are less likely to provide public goods, including coinsurance against shocks, to their residents.

A similar implication flows from the observation that the risk of a break-up could be reduced by enhancing the democratic accountability of the ECB. The modern literature on monetary policy distinguishes a central bank's operational independence and democratic accountability. A central bank should have the independence to select and implement its tactics independent of political pressures, but in choosing the objectives at which those tactics are directed it should be answerable to the polity. National central banks ultimately answer to national legislatures, which have the power to alter their statutes in the event that those responsible for the formulation of monetary policy are perceived as pursuing objectives inconsistent with their mandate – where the latter is decided by the polity as a whole.[53]

But in Europe there is no euro-area or EU government that can act as an effective counterweight to the ECB.[54] The powers of the European Parliament are limited relative to those of national parliaments and legislatures. The Parliament holds hearings at which the president of the ECB delivers a statement and answers questions but cannot threaten to replace the president in the event of disagreement over objectives. The mandate of the ECB is a matter of international treaty, signed by the governments of the member states, and cannot be altered by the Parliament. Altering it requires the unanimous consent of

[53] Some authors, e.g. Alesina and Tabellini (2007a,b), argue that the need for democratic accountability of independent agencies like the ECB can be overstated. They argue that EU member states have shown themselves prepared to accept limited democratic accountability for such institutions as the price for policy efficiency, pointing not just to the ECB but also the case of the European Commission. My own view is that the effort to draft a European constitution (including the Nice Summit that preceded the constitutional convention and the Brussels Summit that followed it) point to a deep and abiding desire in Europe for the adequate democratic accountability of such institutions.

[54] Accountability can be defined and provided in different ways; see, in the context of the ECB, Bini-Smaghi (1998), Buiter (1999), Issing (1999) and de Haan and Eijffinger (2000). By referring here to *democratic* accountability, I attempt to distinguish accountability of policy makers to democratically elected politicians from other mechanisms for accountability, for example accountability to the public through the mechanism of public opinion, achieved through the release of voting records and board minutes.

the member states, which would be a formidable obstacle in practice.[55] This means that the ECB is less democratically accountable than the typical national central bank. In turn this leaves less cope for the European polity to influence its objectives. In the event of serious disagreement, political groups that object to how the central bank chooses to operationalize its mandate are likely to choose exit over the relatively ineffective option of voice.[56]

Making voice more attractive would require giving the European Parliament more power to refine the institution's mandate and replace the president and perhaps other members of the board in the event of serious disagreement over objectives.[57] But there was a reluctance to significantly enhance the powers of the European Parliament during the constitutional convention process of 2003-4, reflecting majority sentiment against creating anything resembling a European government. And even limited steps in that direction were resisted by the French and Dutch electorates in their referenda on the draft constitution. This is a reminder that monetary union without political union is problematic.[58] Since the latter is not likely to change anytime soon, collapse of the former cannot be dismissed out of hand.

9. Conclusion

[55] De Haan and Eijffinger (2000) observe that the power of the European Parliament to alter the ECB statute is quite limited. They state that they "would prefer that, in the case of the statute of the ESCB, the European Parliament should have the final say and thus could act as a real parliament" (p.402), but they don't explain how to bring this about.

[56] In principle, there are alternatives to democratic accountability, as noted above. But given the difficulty of modifying the central bank's statute or ousting members of its board, reflecting the treaty-based nature of its structure, it can be argued that these provide an inadequate substitute.

[57] Alternatively, and less desirably in my view, this power could be delegated to another political body such as the Eurogroup (the group of finance ministers of the members of the euro area).

[58] As emphasized by De Grauwe (2006).

The possibility that an incumbent member of the euro area might reintroduce its national currency cannot be excluded. The EU is still an entity whose residents identify themselves as citizens of nation states. Differences in national history and identity imply differences in preferences over monetary policy. Monetary union by its nature entails compromises and tradeoffs. Member states must agree on a common monetary policy that in some cases is not any nation's optimum. By choosing to remain members, countries trade off the costs of a suboptimal monetary policy against other benefits.

Where there are compromises and tradeoffs, it is possible that changes in circumstances may lead to a change in commitments. A country that experiences an asymmetric shock may find the costs of following policies determined by the majority of participating member states, while tolerable previously, to be prohibitive now. A country that sees its monetary-union partners appointing less inflation-averse central bankers to the ECB board may similarly decide that the costs of accepting the common policy, while previously tolerable, are now prohibitively high.

How formidable are the obstacles to withdrawing? Economically, it is not clear which way the arguments cut. A country contemplating exit in order to obtain the kind of real depreciation needed to address problems of chronic slow growth and high unemployment would be deterred if it thought that its efforts to engineer a real depreciation would be frustrated by the inflationary response of domestic wages and prices, or if it thought that leaving the monetary union would significantly raise its debt servicing costs. But if the defector strengthens the independence of its central bank and the efficiency of its fiscal institutions, then it is at least conceivable that these negative economic effects would not obtain.

In contrast to some other authors, I have argued that the technical and legal difficulties of reintroducing the national currency, while surmountable, should not be underestimated. But the political domain is where the most serious obstacles to withdrawing reside. A country that withdraws from Europe's monetary union would be seen as disregarding its commitments to other euro area members. Such a country would not be welcomed in the meetings where the future architecture of the European Union is discussed and policy priorities are decided. Insofar as member states value their participation in these political discussions, they would incur significant costs. The "insofar" is the preceding sentence is, of course, an important caveat. Be that as it may, my own assessment is that the high value that member states attach to the larger European project would prevent them from exiting from the monetary union except under the most extreme circumstances.[59]

Would defection by one country cause the general disintegration of the euro area? The answer, as with many things economic, is "it depends." For other countries experiencing the same economic problem, there might be a strengthened incentive to follow. If Italy left owing to inadequate competitiveness and slow growth and depreciated its national currency against the euro, other euro area members suffering from inadequate competitiveness and slow growth would feel greater discomfort and a greater temptation to follow. If Germany left owing to high inflation and allowed its national currency to appreciate against the euro, then other euro area members similarly uncomfortable with the rate of inflation would experience still higher import prices and again be more tempted to follow suit.

[59] This is a specific application of a general conclusion drawn by Cohen (2000), that monetary unions have tended to be stable when there are interwoven into a fabric of related ties.

But if economic problems in the defecting country were the converse of those of its partners in the monetary union, then the opposite conclusion might obtain: the rump union could be rendered more cohesive. Similarly, if the country exiting the union had different preferences, independent of differences in national economic circumstances, its departure might make it easier for the remaining members to agree on a policy more to their liking and render the residual union more cohesive. The first set of effects is likely to be of negligible importance if the departing country is small but of greater significance if it is large. The second set of effects would be independent of country size insofar as ECB policy is decided on the basis of one country, one vote.

The analysis here has focused on scenarios for the next ten years. What about longer horizons? The longer the euro survives, the less likely it would seem that a participating country would see reintroducing its national currency as a logical treatment for its economic ills. Markets adapt to the single currency, rendering attempts to tamper with it correspondingly more costly. Expectations adapt to its existence: having no first-hand experience with alternatives, residents take the existence of a European currency as the normal state of affairs and come to regard the reintroduction of a national currency as beyond the pale. Notwithstanding the fact that it experienced a very severe asymmetric shock in the form of Hurricane Katrina and was disappointed by the assistance it then received from its partners in the U.S. currency union, the State of Louisiana did not contemplate abandoning the dollar and introducing its own currency, even though a sharp

depreciation might have been appropriate for addressing some of its economic problems.[60]

At the same time, other developments could make the break-up of the euro area more likely. There could be a diplomatic and political falling out over, say, foreign policy. In a world of dirty bombs and terrorist cells, a member state could experience an asymmetric shock of sufficient magnitude that a dramatic real depreciation was seen as essential and the costs of abandoning the euro were trivial in comparison. The possibilities are endless.

[60] One can object that high labor mobility between Louisiana and neighboring states obviated the need for such a response, but one can also argue that after nearly two centuries of currency union leaving the dollar area was inconceivable in any case.

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Table 1
Determinants of Negative Opinions of the Euro, 2002-2006
(standard errors in parentheses)

Variable	(1)	(2)	(3)
Inflation	0.005	0.007*	0.004*
	(0.003)	(0.003)	(0.002)
Growth	-0.005*	-0.007*	0.001
	(0.002)	(0.002)	(0.001)
2003		0.003	0.006*
		(0.008)	(0.003)
2004		0.015	0.008*
		(0.008)	(0.003)
2005		0.015	0.012*
		(0.008)	(0.003)
2006		0.026*	0.013*
		(0.008)	(0.003)
R^2	0.12	0.028	—
Obs	60	60	60
Random effects	N	N	Y

Note: Constant term estimated but not reported. * denotes significant at the 95 per cent level.

Source: See text.

Table 2. Effect of EMU and Fiscal Institutions on Credit Ratings
(Strong Finance Minister Measure of Fiscal Institutions)

	(1)	(2)	(3)	(4)	(5)
StrongFM	2.5358 (0.474)***	2.3411 (0.520)***	2.6822 (0.187)***	0.8813 (0.244)***	0.1640 (0.079)**
Real GDP per capita				-0.00005 (0.00002)**	-0.00002 (7.97*10^-6)*
Trend deviation				1.50*10^-10 (1.09*10^-9)	3.81*10^-10 (3.46*10^-10)
Debt (% of GDP)				-0.0235 (0.0105)	-0.0042 (0.0034)
Inflation				-0.3068 (0.0372)***	-0.0368 (0.0136)***
Unemployment Rate				-0.0227 (0.0156)	-0.0066 (0.0049)
Export Growth (Year to Year)				-0.0215 (0.0064)***	-0.0017 (0.0020)
CA Def < 4%				0.0379 (0.127)	0.0277 (0.040)
EMU				-0.7083 (0.2598)***	-0.1579 (0.0833)*
Real GDP per capita * EMU				0.00004 (0.00003)*	0.00001 (8.32*10^-6)*
Trend Dev * EMU				-1.50*10^-10 (1.10*10^-9)	-3.96*10^-10 (3.49*10^-10)
Debt (% of GDP) * EMU				-0.0148 (0.0053)***	-0.0006 (0.0017)
Inflation * EMU				0.4160 (0.048)***	0.0379 (0.017)**
Unemployment * EMU				0.0340 (0.013)***	0.0065 (0.004)
Export Growth * EMU				0.0156 (0.0083)*	-0.0017 (0.0026)
CA Def * EMU				-0.2702 (0.1222)	-0.0433 (0.0387)
Lagged Dependent Variable					0.9181 (0.015)***
Constant	17.964 (0.316)***	17.941 (0.504)***	17.871 (0.122)***	20.813 (0.378)***	1.8503 (0.332)***
Year Fixed Effects	No	Yes	No	No	No
Country Fixed Effects	No	No	Yes***	Yes***	Yes**
N	462	462	462	462	451
R^2	0.0587	0.0587	0.0587	0.4863	0.9949

Table 3. Effect of EMU and Fiscal Institutions on Credit Ratings
(IndexS2 of Fiscal Institutions)

	(1)	(2)	(3)	(4)	(5)
indexS2	2.5638 (0.619)***	2.1848 (0.659)***	3.3274 (0.272)***	0.4829 (0.328)	0.1317 (0.106)
Real GDP per capita				-0.00006 (0.00003)**	-0.00002 (8.04*10^-6)**
Trend deviation				2.16*10^-10 (1.11*10^-9)	3.99*10^-10 (3.48*10^-10)
Debt (% of GDP)				-0.0231 (0.0107)**	-0.0040 (0.0033)
Inflation				-0.3633 (0.0364)***	-0.0434 (0.0137)***
Unemployment Rate				-0.0147 (0.0156)	-0.0054 (0.0049)
Export Growth (Year to Year)				-0.0228 (0.0065)***	-0.0017 (0.0021)
CA Def < 4%				0.0786 (0.128)	0.0352 (0.0398)
EMU				-0.7523 (0.2664)***	-0.1577 (0.0849)*
Real GDP per capita * EMU				0.0001 (0.00002)**	0.00002 (8.38*10^-6)*
Trend Dev * EMU				-2.53*10^-10 (1.12*10^-9)	-4.12*10^-10 (3.51*10^-8)
Debt (% of GDP) * EMU				-0.0155 (0.0054)***	-0.0008 (0.0017)
Inflation * EMU				0.4668 (0.0480)***	0.0436 (0.0171)**
Unemployment * EMU				0.0318 (0.013)**	0.0062 (0.004)
Export Growth * EMU				0.0175 (0.0084)**	-0.0015 (0.0026)
CA Def * EMU				-0.2826 (0.1237)**	-0.0455 (0.0388)
Lagged Dependent Variable					0.9213 (0.015)***
Constant	18.071 (0.376)***	18.028 (0.546)***	17.622 (0.163)***	21.120 (0.419)***	1.8080 (0.340)***
Year Fixed Effects	No	Yes	No	No	No
Country Fixed Effects	No	No	Yes***	Yes***	Yes*
N	462	462	462	424	414
R^2	0.0360	0.0360	0.0360	0.4651	0.9950

Table 4. Effect of EMU and Fiscal Institutions on Credit Ratings
(Fiscgov Measure of Fiscal Institutions)

	(1)	(2)	(3)	(4)	(5)
fiscgov	4.7004 (0.518)***	4.5864 (0.531)***	4.2989 (0.306)***	2.2219 (0.340)***	0.2477 (0.115)**
Real GDP per capita				-0.00004 (0.00002)	-0.00002 (7.92*10^-6)**
Trend deviation				-3.57*10^-10 (1.06*10^-9)	3.50*10^-10 (3.47*10^-10)
Debt (% of GDP)				-0.0183 (0.0102)	-0.0038 (0.0034)
Inflation				-0.2533 (0.0345)***	-0.0400 (0.0126)***
Unemployment Rate				-0.0327 (0.0151)**	-0.0070 (0.0049)
Export Growth (Year to Year)				-0.0213 (0.0062)***	-0.0019 (0.0020)
CA Def < 4%				0.0219 (0.122)	0.0297 (0.0398)
EMU				-0.6714 (0.2507)***	-0.1677 (0.0828)**
Real GDP per capita * EMU				0.00003 (0.00003)	0.00001 (8.30*10^-6)*
Trend Dev * EMU				3.17*10^-10 (1.07*10^-9)	-3.69*10^-10 (3.50*10^-10)
Debt (% of GDP) * EMU				-0.0128 (0.0051)**	-0.0004 (0.0017)
Inflation * EMU				0.3691 (0.046)***	0.0416 (0.017)***
Unemployment * EMU				0.0423 (0.013)***	0.0071 (0.0041)*
Export Growth * EMU				0.0142 (0.008)*	-0.0015 (0.0026)
CA Def * EMU				-0.2616* (0.1184)	-0.0445 (0.0387)
Lagged Dependent Variable					0.9133 (0.015)***
Constant	16.200 (0.3842)***	16.047 (0.540)***	16.488 (0.222)***	19.565 (0.434)***	1.8667 (0.331)***
Year Fixed Effects	No	Yes	No	No	No
Country Fixed Effects	No	No	Yes***	Yes***	Yes**
N	462	462	462	462	451
R^2	0.1517	0.1517	0.1517	0.5196	0.9949

Figure 1. Public Opinion by Country

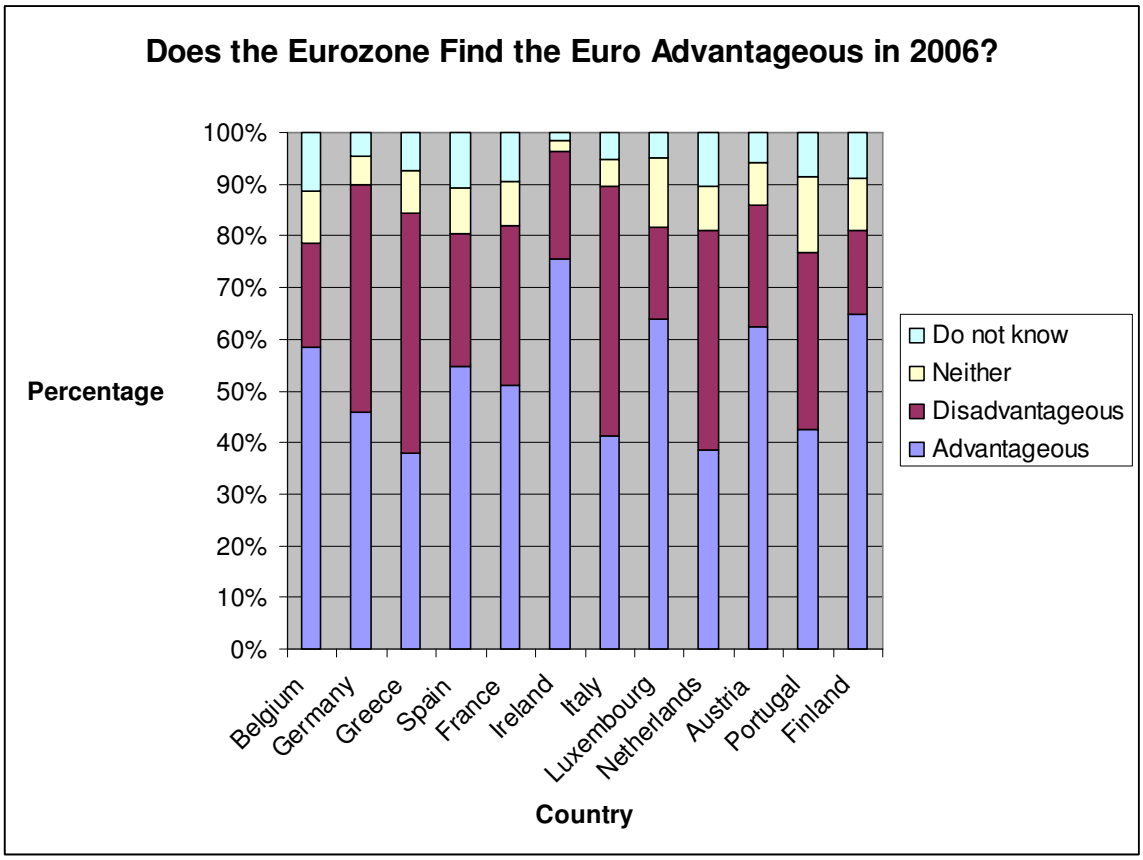

Figure 2. Survey Responses in the Netherlands