

Revenge of the Optimum Currency Area

Paul Krugman

The creation of the euro was supposed to be another triumphant step in the European project, in which economic integration has been used to foster political integration and peace; a common currency, so the thinking went, would bind the continent even more closely together. What has happened instead, however, is a nightmare: the euro has become an economic trap, and Europe a nest of squabbling nations. Even the continent's democratic achievements seem under threat, as dire economic conditions create a favorable environment for political extremism. Who could have seen such a thing coming?

Well, the answer is that lots of economists could and should have seen it coming, and some did. For we have a long-established way to think about the prospects for currency unions, the theory of optimum currency areas – and right from the beginning, this theory suggested serious concerns about the euro project.

These concerns were largely dismissed at the time, with many assertions that the theory was wrong, irrelevant, or that any concerns it raised could be addressed with reforms. Recent events have, however, very much followed the lines one might have expected given good old-fashioned optimum currency area theory, even as they have suggested both that we need to expand the theory and that some aspects of the theory are more important than we previously realized.

In what follows, I'll start with a very brief and selective review of what I consider the key points of optimum currency area theory, and what that theory seemed, some two decades ago, to say

about the idea of a single European currency. Next up is the crisis, and the continuing refusal of many leaders to see it for what it is. Finally, some thoughts on possible futures.

Mundell, Kenen, and currencies

The advantages of a common currency are obvious, if hard to quantify: reduced transaction costs, elimination of currency risk, greater transparency and possibly greater competition because prices are easier to compare. Before the creation of the euro, some statistical work on the limited number of country pairs sharing a currency suggested that the common European currency might produce an explosion in intra-European trade; that hasn't happened, but trade does seem to have risen modestly as a result of the single currency, and presumably that corresponds to an increase in mutually beneficial and hence productive exchanges.

The disadvantages of a single currency come from loss of flexibility. It's not just that a currency area is limited to a one-size-fits-all monetary policy; even more important is the loss of a mechanism for adjustment. For it seemed to the creators of OCA, and continues to seem now, that changes in relative prices and wages are much more easily made via currency depreciation than by renegotiating individual contracts. Iceland achieved a 25 percent fall in wages relative to the European core in one fell swoop, via a fall in the krona. Spain probably needs a comparable adjustment, but that adjustment, if it can happen at all, will require years of grinding wage deflation in the face of high unemployment.

But why should such adjustments ever be necessary? The answer is “asymmetric shocks”. A boom or slump everywhere in a currency area poses no special problems. But suppose, to take a not at all hypothetical example, that a vast housing boom leads to full employment and rising wages in part, but only part, of a currency area, then goes bust. The legacy of those boomtime wage increases will be an uncompetitive tradable sector, and hence the need to get at least relative wages down again.

So the advantages of a single currency come at a potentially high cost. Optimum currency area theory is about weighing the balance between those advantages and those potential costs.

Now, what we need to say right away is that this “weighing” takes place only in a qualitative sense: at this point nobody says that the benefits of joining the euro are x percent of GDP, the costs y , and $x > y$, so the euro it is. Instead, it’s more along the lines of arguing that Florida is a better candidate for membership in the dollar zone than Spain is a candidate for membership in the euro zone. This doesn’t necessarily say that Spain made a mistake to by joining the euro – nor does it necessarily refute the argument that Florida would be better off with its own currency! But the theory does at least give us some insight into the tradeoffs.

We also need to say that in practice very little of optimum currency area theory is concerned with the benefits of a single currency area. Obviously these benefits depend on potential economic interactions; there would be no point in sharing a currency with, say, a colony on Mars that did almost no trade with Earth, and joining the euro makes a lot more sense for, say, Slovakia than it would for Mongolia. But almost all the interesting stuff comes from looking at

factors that might mitigate the costs arising from the loss of monetary flexibility that comes with adopting someone else's currency – which brings us to the two big ideas of OCA.

First up, Mundell, whose classic 1961 paper argued that a single currency was more likely to be workable if the regions sharing that currency were characterized by high mutual labor mobility. (He actually said factor mobility, but labor is almost surely the one that matters). How so?

Well, suppose – to take a not at all hypothetical example – that the state of Massachusetts takes a major asymmetric hit to its economy that sharply reduces employment – which is, in fact, what happened at the end of the 1980s. If Massachusetts workers can't or won't leave the state, the only way to restore full employment is to regain the lost jobs, which will probably require a large fall in relative wages to make the state more competitive, a fall in relative wages that is much more easily accomplished if you have your own currency to devalue. But if there is high labor mobility, full employment can instead be restored through emigration, which shrinks the labor force to the jobs available. And that's what actually happened. Table 1 shows snapshots of the Massachusetts economy at three dates: 1986, the height of the "Massachusetts miracle" centered on minicomputers, 1991, after the shift to PCs and the bursting of a housing bubble had brought a severe local recession, and 1996. Notice that Massachusetts never regained the employment share it lost in the late-80s bust. Nonetheless, by the mid-90s it once again had an unemployment rate below the national average, because workers moved elsewhere.

So that's one main theme of optimum currency area theory. But it isn't the only one. There's also Peter Kenen's argument that fiscal integration – a large “federal” component to spending at the regional or local level – can help a lot in dealing with asymmetric shocks.

Let's once again take a not at all hypothetical example, Florida after the recent housing bust. America may have a small welfare state by European standards, but it's still pretty big, with large spending in particular on Social Security and Medicare – obviously both a big deal in Florida. These programs are, however, paid for at a national level. What this means is that if Florida suffers an asymmetric adverse shock, it will receive an automatic compensating transfer from the rest of the country: it pays less into the national budget, but this has no impact on the benefits it receives, and may even increase its benefits if they come from programs like unemployment benefits, food stamps, and Medicaid that expand in the face of economic distress.

How big is this automatic transfer? Table 2 shows some indicative numbers about Florida's financial relations with Washington in 2007, the year before the crisis, and 2010, in the depths of crisis. Florida's tax payments to DC fell some \$33 billion; meanwhile, special federally funded unemployment insurance programs contributed some \$3 billion, food stamp payments rose almost \$4 billion. That's about \$40 billion in de facto transfers, some 5 percent of Florida's GDP – and that's surely an understatement, since there were also crisis-related increases in Medicaid and even Social Security, as more people took early retirement or applied for disability payments.

You might argue that since Florida residents are also U.S. taxpayers, we really shouldn't count all of this as a transfer. The crucial point, however, is that the federal government does not currently face a borrowing constraint, and has very low borrowing costs. So all of this is a burden that would be a real problem if Florida were a sovereign state, but it taken off its shoulders by the fact that it isn't.

Wait, there's more: Florida banks benefit from federal deposit insurance; many mortgage losses fell on Fannie and Freddie, the federally-sponsored lending agencies. More on this financial backing shortly.

In summary, optimum currency area theory suggested two big things to look at – labor mobility and fiscal integration. And on both counts it was obvious that Europe fell far short of the U.S. example, with limited labor mobility and virtually no fiscal integration. This should have given European leaders pause – but they had their hearts set on the single currency.

Why did they believe it would work? I won't try for a detailed historiography; let me just say that what I recall from discussions at the time was the belief that two factors would make the adjustment problems manageable. First, countries would adopt sound fiscal policies, and thereby reduce the incidence of asymmetric shocks. Second, countries would engage in structural reforms that would make labor markets – and, presumably, wages – flexible enough to cope with such asymmetric shocks as occurred despite the soundness of the fiscal policies.

Even at the time, this sounded to many American economists like wishful thinking. After all, asymmetric shocks don't have to arise from unsound policies – they can come from shifts in relative product demand or, of course, such things as real estate bubbles. And European leaders seemed to believe that they could achieve a degree of wage flexibility that would be more or less unprecedented in the modern world.

Nonetheless, the project went ahead. Exchange rates were locked at the beginning of 1999, with the mark, the franc and so on officially becoming just denominations of the euro. Then came actual euro notes – and they all lived happily ever after, for values of “ever after” < 11 years.

The euro crisis

As I just suggested, the architects of the euro, to the extent that they took optimum currency area theory at all seriously, chose to believe that asymmetric shocks would be a relatively minor problem. What happened instead was the mother of all asymmetric shocks – a shock that was, in a bitter irony, caused by the creation of the euro itself.

In essence, the creation of the euro led to a perception on the part of many investors that the big risks associated with cross-border investment within Europe had been eliminated. In the 1990s, despite the absence of formal capital controls, capital movements and hence current-account imbalances within Europe were limited. After the creation of the euro, however, there was massive capital movement from Europe's core – mainly Germany, but also the Netherlands – to

its periphery, leading to an economic boom in the periphery and significantly higher inflation rates in Spain, Greece, etc. than in Germany.

This movement was itself a large asymmetric shock, but a relatively gradual one, and one that the European Central Bank was willing to accommodate with slightly above-target inflation. Matters were quite different, however, when private capital flows from the core to the periphery came to a sudden stop, leaving the peripheral economies with prices and unit labor costs that were well out of line with those in the core. Suddenly the euro faced a major adjustment problem.

This was the kind of problem optimum currency area theory warned would be very difficult to handle without currency devaluation; euro optimists had believed that reforms would make labor markets sufficiently flexible to deal with such situations. Unfortunately, the pessimists were right. “Internal devaluation” – restoring competitiveness through wage cuts as opposed to devaluation – has proved extremely hard. Table 3 shows hourly labor costs in the business sectors of several peripheral economies that, by common account, entered the crisis with very flexible labor markets; even so, and despite very high unemployment, they have achieved at best small declines.

So optimum currency area theory was right to assert that creating a single currency would bring significant costs, which in turn meant that Europe’s lack of mitigating factors in the form of high labor mobility and/or fiscal integration became a very significant issue. In this sense, the story of the euro is one of a crisis foretold.

Yet there have been some surprises – unfortunately, none of them favorable.

First, as far as I know nobody or almost nobody foresaw that countries hit by adverse asymmetric shocks would face fiscal burdens so large as to call government solvency into question. As it turned out, the adjustment problems of the euro area quickly turned into a series of fiscal emergencies as well. In this sense, Kenen has turned out to dominate Mundell: lack of labor mobility has not played a major role in euro's difficulties, at least so far, but lack of fiscal integration has had an enormous impact, arguably making the difference between the merely bad condition of America's "sand states", where the housing bubble was concentrated, and the acute crises facing Europe's periphery.

Second, traditional optimum currency area theory paid little attention to banking issues; little thought was given to the importance of national as opposed to regional bank guarantees in the United States. In retrospect, however, we can see just how crucial such guarantees have actually been. Deposits in U.S. banks are guaranteed at the federal level, so that bank bailouts have not been a burden on state governments; in Europe, bank bailouts have helped cause sudden jumps in government debt, most notably in Ireland, where the government's assumption of bank debts abruptly added 40 points to the ratio of public debt to GDP.

The combination of concerns about sovereign debt and the absence of federal bank backing have produced the now-famous phenomenon of "doom loops", in which fears of sovereign default

undermine confidence in the private banks that hold much sovereign debt, forcing these banks to contract their balance sheets, driving the price of sovereign debt still lower.

Then there's the lender of last resort issue, which turns out to be broader than even those who knew their Bagehot realized. Credit for focusing on this issue goes to Paul DeGrauwe, who pointed out that national central banks are potentially crucial lenders of last resort to governments as well as private financial institutions. The British government basically can't face a "rollover" crisis in which bond buyers refuse to purchase its debt, because the Bank of England can always step in as financier of last resort. The government of Spain, however, can face such a crisis – and there is always the risk that fears of such a crisis, leading to default, could become a self-fulfilling prophecy.

As DeGrauwe has pointed out, Britain's fiscal outlook does not look notably better than Spain's. Yet the interest rate on British 10-year bonds was 1.7% at the time of writing, whereas the rate on Spanish 10-years was 6.6%; presumably this liquidity risk was playing an important role in the difference.

An even more striking comparison is between euro area countries and those nations that have pegged to the euro but not actually adopted the currency. Denmark, Austria, and Finland are all, by common agreement, in pretty good fiscal shape. But where Austria and Finland are euro nations, Denmark is merely pegged to the euro. You might have thought that this lack of full commitment on Denmark's part would exact a price in the form of higher interest rates -- after all, someday Denmark might choose to devalue. In fact, however, Danish borrowing costs are

significantly lower than those in Finland and Austria. To be fair, this could reflect fears that all euro countries will end up being contaminated by the problems of the periphery – say, by suffering large losses on loans between central banks. But a more likely explanation is that Denmark is seen as a safer bet because it could, in a liquidity squeeze, turn to its own central bank for financing, ruling out the self-fulfilling crises that pose risks even to relatively strong euro area governments.

The bottom line here would seem to be that concerns about the euro based on optimum currency area theory were actually understated. Members of a currency area, it turns out, should have high integration of bank guarantees and a system of lender of last resort provisions for governments as well as the traditional Mundell criterion of high labor mobility and the Kenen criterion of fiscal integration. The euro area has none of these.

Making the euro workable

I won't try here to project the likely outcome of the euro crisis, since any such discussion will surely be overtaken by events. Instead, let me ask what it might take to make the euro workable even if it isn't optimal.

One answer would be full integration, American-style – a United States of Europe, or at least a “transfer union” with much more in the way of automatic compensation for troubled regions. This does not, however, seem like a reasonable possibility for decades if not generations to come.

What about more limited fixes? I would suggest that the euro might be made workable if

European leaders agreed on the following:

1. Europe-wide backing of banks. This would involve both some kind of federalized deposit insurance and a willingness to do TARP-type rescues at a European level – that is, if, say, a Spanish bank is in trouble in a way that threatens systemic stability, there should be an injection of capital in return for equity stakes by all European governments, rather than a loan to the Spanish government for the purpose of providing the capital injection. The point is that the bank rescues have to be severed from the question of sovereign solvency.
2. The ECB as a lender of last resort to governments, in the same way that national central banks already are. Yes, there will be complaints about moral hazard, which will have to be addressed somehow. But it's now painfully obvious that removing the option of emergency liquidity provision from the central bank just makes the system too vulnerable to self-fulfilling panic.
3. Finally, a higher inflation target. Why? As I showed in Table 3, euro experience strongly suggests that downward nominal wage rigidity is a big issue. This means that “internal devaluation” via deflation is extremely difficult, and likely to fail politically if not economically. But it also means that the burden of adjustment might be substantially less if the overall Eurozone inflation rate were higher, so that Spain and other peripheral nations could restore competitiveness simply by lagging inflation in the core countries.

So maybe, maybe, the euro could be made workable. This still leaves the question of whether the euro even *should* be saved. After all, given everything I said, it looks increasingly as if the whole project was a mistake. Why not let it break up?

The answer, I think, is mainly political. Not entirely so – a euro breakup would be hugely disruptive, and exact high “transition” costs. Still, the enduring cost of a euro breakup would be that it would amount to a huge defeat for the broader European project I described at the start of this talk – a project that has done the world a vast amount of good, and one that no citizen of the world should want to see fail.

That said, it’s going to be an uphill struggle. The creation of the euro involved, in effect, a decision to ignore everything economists had said about optimum currency areas. Unfortunately, it turned out that optimum currency area theory was essentially right, erring only in *understating* the problems with a shared currency. And now that theory is taking its revenge.

REFERENCES

De Grauwe, Paul, “Managing a fragile Eurozone”, VoxEU, May 2011.

Kenen, Peter: "The Theory of Optimum Currency Areas: An Eclectic View" in R.Mundell and A. Swoboda eds, *Monetary Problems of the International Economy*, The University of Chicago Press, 1969

Mundell, Robert: *A theory of Optimum Currency Areas*, American Economic Review, 51 (4),
1961

Table 1: Labor mobility in action

	MA share in US employment	MA unemployment rate	US unemployment rate
1986	2.70	4.0	7.0
1991	2.48	8.8	6.8
1996	2.43	4.6	5.4

Table 2: Florida and the Feds

	2007	2010
Revenue paid to DC	136.5	111.4
Special unemployment benefits	0	2.9
Food stamps	1.4	5.1

Table 3: Hourly labor costs in the business sector, 2008=100

	2006	2007	2008	2009	2010	2011
Estonia	73.1	87.8	100.0	98.2	96.2	100.7
Ireland	91.5	95.7	100.0	103.1	102.4	100.7
Latvia	62.8	81.7	100.0	99.9	97.1	100.3