

Papadimitriou, Dimitri B.; Wray, L. Randall; Nersisyan, Yeva

Research Report

Endgame for the euro? Without major restructuring, the eurozone is doomed

Public Policy Brief, No. 113

Provided in Cooperation with:

Levy Economics Institute of Bard College

Suggested Citation: Papadimitriou, Dimitri B.; Wray, L. Randall; Nersisyan, Yeva (2010) : Endgame for the euro? Without major restructuring, the eurozone is doomed, Public Policy Brief, No. 113, ISBN 978-1-936192-10-6, Levy Economics Institute of Bard College, Annandale-on-Hudson, NY

This Version is available at:

<http://hdl.handle.net/10419/54274>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Levy Economics Institute of Bard College



Public Policy Brief

No. 113, 2010

ENDGAME FOR THE EURO? WITHOUT MAJOR RESTRUCTURING, THE EUROZONE IS DOOMED

DIMITRI B.PAPADIMITRIOU, L. RANDALL WRAY, and YEVA NERSISYAN

Contents

3 Preface

Dimitri B. Papadimitriou

4 Endgame for the Euro?

Dimitri Papadimitriou, L. Randall Wray, and Yeva Nersisyan

17 About the Authors

The Levy Economics Institute of Bard College, founded in 1986, is an autonomous research organization. It is nonpartisan, open to the examination of diverse points of view, and dedicated to public service.

The Institute is publishing this research with the conviction that it is a constructive and positive contribution to discussions and debates on relevant policy issues. Neither the Institute's Board of Governors nor its advisers necessarily endorse any proposal made by the authors.

The Institute believes in the potential for the study of economics to improve the human condition. Through scholarship and research it generates viable, effective public policy responses to important economic problems that profoundly affect the quality of life in the United States and abroad.

The present research agenda includes such issues as financial instability, poverty, employment, gender, problems associated with the distribution of income and wealth, and international trade and competitiveness. In all its endeavors, the Institute places heavy emphasis on the values of personal freedom and justice.

Editor: Barbara Ross
Text Editor: Debby Mayer

The Public Policy Brief Series is a publication of the Levy Economics Institute of Bard College, Blithewood, PO Box 5000, Annandale-on-Hudson, NY 12504-5000.
For information about the Levy Institute, call 845-758-7700 or 202-887-8464 (in Washington, D.C.), e-mail info@levyinstitute.org, or visit www.levyinstitute.org.

The Public Policy Brief Series is produced by the Bard Publications Office.

Copyright © 2010 by the Levy Economics Institute. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information-retrieval system, without permission in writing from the publisher.

ISSN 1063-5297
ISBN 978-1-936192-10-6

Preface

From the way markets reacted, the trillion-dollar rescue package European leaders aimed at the continent's growing debt crisis in May might well have been code-named Panacea. Stocks rose throughout the region, and even Greek bond yields tumbled. The reprieve was short-lived, however, as markets fell on the realization that the bailout would not improve government finances going forward.

The entire rescue plan rests on the assumption that, with more time, the eurozone's "problem children" can get their fiscal houses in order. But Greece and some of the other major European debtors are seriously uncompetitive in comparison with countries that are either more productive or have lower production costs. No rescue plan can address the central problem: that countries with very different economies are yoked to the same currency. Lacking a sovereign currency and unable to devalue their way out of trouble, they are left with few viable options—and voters in Germany and France will soon tire of paying the bill.

Critics argue that the current crisis has exposed the profligacy of the Greek government and its citizens, who are stubbornly fighting proposed social spending cuts and refusing to live within their means. Yet Greece has one of the lowest per capita incomes in the European Union (EU), and its social safety net is modest compared to the rest of Europe. Since implementing its austerity program in January, it has reduced its budget deficit by 40 percent, largely through spending cuts. But slower growth is causing revenues to come in below targets, and fuel-tax increases have contributed to growing inflation. As the larger troubled economies like Spain and Italy also adopt austerity measures, the entire continent could find government revenues collapsing.

So what is to be done? Greece cannot "afford" default—nor can the EU—but it can restructure its debt. Basically, Greece needs more favorable credit terms: lower interest rates and a longer period in which to pay. The cash-flow improvement in servicing the country's debt, together with the ongoing rebal-

ancing of its public finances, would raise its credit profile and make access to credit from private markets possible—a viable short-term fix.

But a more far-reaching solution is needed. For better or worse, it's time to start thinking about a major reconstruction of the European project, along two possible paths.

The first possibility, of course, is an amicable divorce. Yet a coordinated dissolution of the EU would open the door to higher transaction costs and tariffs, and curtail the mobility of labor and capital. The net result would be a more inefficient, fractured system, of the kind that inspired the creation of the euro in the first place. More broadly, the euro's disintegration would only bolster the preeminence of the dollar in global commerce and affairs—and perhaps leave China as the only plausible rival to American power.

The second possibility? Achieving a more perfect union. Immediate relief could be provided by the European Central Bank, which would create and distribute 1 trillion euros across all eurozone nations on a per capita basis. Each nation would be allowed to use this emergency relief as it saw fit. Greece, for example, might choose to purchase some of its outstanding public debt; others might choose fiscal stimulus packages. Over the longer term, a permanent fiscal arrangement, through which the central eurozone authorities could distribute funds to member states, would be necessary. Ideally, this should be overseen by the equivalent of a national treasury responsible to an elected body of representatives—in this case, the European Parliament. This arrangement would relieve pressures to adopt austerity measures, and limit the necessity of borrowing from financial markets in order to finance deficits.

As always, I welcome your comments.

Dimitri B. Papadimitriou, *President*
July 2010

Introduction

From the way markets reacted, the €750 billion (\$930 billion) rescue package that European leaders hurled at the continent's growing debt crisis on May 10 might as well have been code-named Panacea. Stocks rose all over the continent, and even Greek bond yields tumbled. The reprieve did not last long, however, as markets fell the next day on the realization that the bailout might allow financial institutions to unload some risky government debt, but it would not improve government finances going forward. The rescue plan cannot address the central problem, which is that countries with very different economies are yoked to the same currency.

The idea was that the single currency and strict Maastricht criteria would keep the profligate Mediterraneans in line. Instead, critics see the bailout as a way for irresponsible nations to offload their liabilities onto their more financially sound neighbors. How long will voters in the wealthier European countries stand for this? Perhaps not much longer than the voters in the debtor countries will stand for the austerity measures imposed on them.

The entire rescue plan rests on the assumption that given more time, the eurozone's problem children can get their fiscal houses in order—and that the European Union (EU) can somehow grow its way out of trouble. But Greece and some of the other major European debtors are seriously uncompetitive, in comparison with countries that are either more productive (e.g., Germany) or have lower production costs (e.g., Latvia).

And the medicine of austerity is quite unlikely to work, for two reasons: the patients may refuse to take it, and, in any case, it must result in a race to the bottom that no one can win. The countries in question are democracies, after all, and it is far from certain that Greece and the others are really willing to cut spending and raise taxes enough to make a difference.

But let's presume that Greece, for one, *will* make that sacrifice. For that to actually improve government finances, Greece's income and production cannot fall by much, since lower tax revenues can lead to higher tax rates (in a sort of Laffer Curve relation). Austerity means stagnant or even falling wages; under the current plan, public sector paychecks will shrink 10 percent, pensions will be cut, and the retirement age raised. Private sector wages and pension reform will soon follow. All of this cost cutting will reduce consumption and retail sales, and hence government revenues.

There will also be spillover effects to nations that export to Greece. To be sure, Greece is a tiny economy within Euroland,

representing a mere 2.6 percent of the area's GDP; but its fiscal problems are by no means unique. As the bigger troubled economies like Spain and Italy also adopt austerity measures, the entire continent could find government revenues collapsing. Worse, exports to neighbors will be hurt by a reduction in demand. Finally, if austerity succeeds in lowering wages and prices in one nation, competitive deflation could compound the problem, as each country tries to gain advantage in order to promote growth through exports. What is most remarkable is that the EU's largest net exporter, Germany, does not appear to recognize that its insistence on fiscal austerity for all of its neighbors will cook its own golden egg-laying goose.

What's missing is a policy mechanism that would even out trade imbalances by "refluxing" the current account surpluses of countries such as Germany, the Netherlands, and France to the deficit countries in a progrowth fashion. John Maynard Keynes's "bancor" proposal was designed to eliminate the asymmetric bias that is inherent in a fixed-exchange-rate regime by imposing a "use it or lose it" rule for international reserves. The problem is that trade-surplus nations accumulate international reserves without penalty, while trade-deficit nations must adopt austerity—which naturally depresses global demand. In the case of the eurozone, the trade-surplus nations are allowed to accumulate euros, since they keep demand for their output high, making it easy for these nations to avoid big government deficits. Trade-deficit nations like Greece, however, must borrow euros, and tend to run large deficits in an effort to generate domestic demand—and thus are asked to adopt austerity.

What's needed is a way of redirecting demand to the trade-deficit nations—for example, by having surplus nations spend euros on direct investment. Germany did this with the former East Germany following reunification. Such a mechanism could be set up very quickly under the aegis of the European Investment Bank. Effective incentives to "recycle" current account surpluses via foreign direct investment, equity flows, foreign aid, or imports could be easily crafted. If successful, this would enable Greece and the other trade-deficit nations to become competitive enough to secure their future through higher exports.

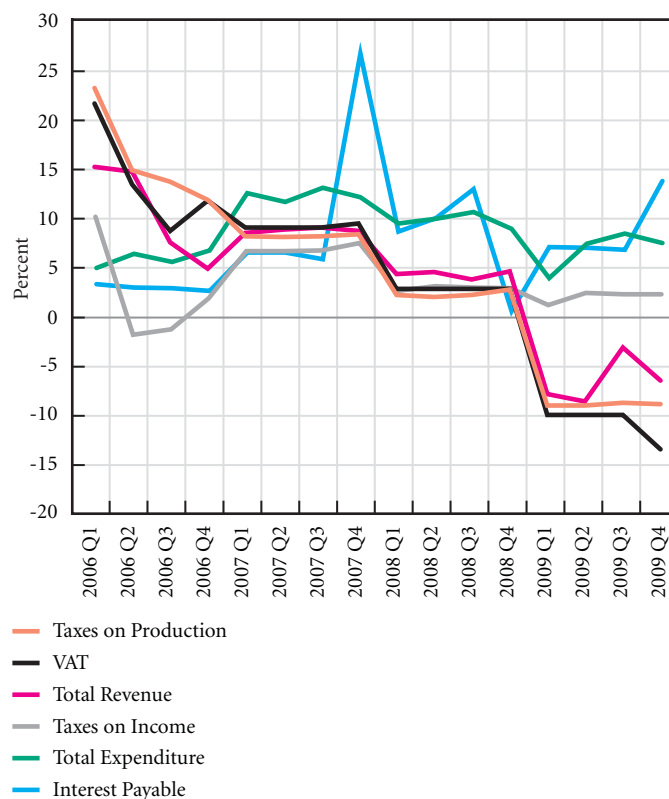
How Did Greece Get into This Mess?

A large portion of Greece's government deficit is not discretionary but rather the result of automatic stabilizers. As the European economy began sliding into recession, tax revenues fell and social transfer payments such as unemployment benefits rose, resulting in a larger gap between tax receipts and spending (i.e., a higher deficit). The quarter-over-quarter change in the government's revenues and expenses demonstrates the endogenous nature of the Greek deficit (Figure 1). The social safety net that the public sector provides has obviously been strained by the recession. Once the economy starts growing again, the deficit will shrink automatically, as tax revenues rise and social transfers fall.

Moreover, if the government tries to shrink its deficit in the midst of a recession by cutting costs or raising taxes, the strategy is most certainly doomed to fail. Wage and pension cuts (which are a large part of the proposed plan) or tax increases will lower national income and further reduce tax receipts, making the budget deficit bigger. More important, lower income means lower effective demand, which will further exacerbate the already bad unemployment situation in Greece, causing more civil disturbances. Some analysts estimate that unemployment will increase by 6 percent as a result of the austerity package put forward by the EU and International Monetary Fund (IMF)—which, again, is likely to fuel the country's downward spiral (Polychroniou 2010).

Other observers, however, argue that this crisis exposes the profligacy of the Greek government and its citizens, who are stubbornly fighting proposed social spending cuts and refusing to live within their means. Reading the press, one gets the impression that the Greeks must enjoy one of the highest standards of living in Europe while the frugal Germans are forced to pick up the tab. In reality, Greece has one of the lowest per capita incomes in Europe (€21,100 [\$25,900]), far lower than Germany (€29,400 [\$36,000]) or the average for the EU 12 (€27,600 [\$33,800]). Further, the country's social safety net might seem very generous by U.S. standards, but it is truly modest compared to the rest of Europe. From 1998 to 2007 Greece spent an average of only €3,530.47 (\$4,327.61) per capita on social protection benefits—slightly less than Spain and about €700 (\$860) more than Portugal, which has one of the lowest levels in all of the eurozone. By contrast, Germany and France spent more than double the Greek level, while the EU 12 averaged €6,251.78 (\$7,660.92). Even Ireland, one of the eurozone's most neoliberal economies, spent more on social protection than the supposedly profligate Greeks.

Figure 1 Quarter-to-quarter Change in Greek Government Expenditures and Revenues, 2006–09



Sources: Eurostat and authors' calculations

One would think that if the Greek welfare system were as generous and inefficient as it is usually described, then administrative costs would be higher than that of more disciplined governments, such as the German and the French. But this is obviously not the case (see Table 1). And even if we assume, as many have argued, that corruption runs rampant in Greece, its administrative costs are lower than those of the German, French, and Irish bureaucracies. Even spending on pensions, which is the main target of the neoliberals, is lower than in other European countries.

Through 2005, Greece's spending lagged behind that of all the other euro countries except Ireland, and was below the average for the Organisation for Economic Co-operation and Development (OECD) (Table 2). Note also that despite all the commentary on early retirement in Greece, the country's spending on old-age programs was in line with the spending in Germany and France between 1998 and 2005.

Greece has one of the most unequal distributions of income in Europe, and a very high level of poverty (Table 3). Again, the

Table 1 Per Capita Spending on Social Protection Benefits, 1998–2007 (average level in euros)

	EU 12	Germany	France	Greece	Spain	Portugal	Ireland	UK
Social protection benefits	6,251.78	7,432.21	7,350.15	3,350.47	3,669.41	2,825.56	5,308.01	7,171.70
Administration costs	221.51	259.41	318.19	102.46	82.14	74.01	354.78	176.63
Sickness / health care	1,782.93	2,160.07	2,157.39	944.73	1,115.16	856.61	2,148.09	2,066.12
Unemployment	426.22	549.43	533.89	191.45	452.32	136.87	449.15	203.1
Pensions	2,428.11	2,558.30	2,778.13	1,646.77	1,404.78	1,126.40	1,167.68	3,006.47

Sources: Eurostat and authors' calculations

Table 2 Total Social Spending, 1998–2005 (average level in percent of GDP)

	Greece	Germany	France	Ireland	UK	United States	OECD	Eurozone*
Total social spending	19.71	26.59	28.68	14.89	20.07	15.36	20.09	22.97
Unemployment	0.4	1.65	1.65	0.9	0.33	0.35		1.38
Health	5.045	7.75	7.53	5.28	6.19	6.37	5.73	6.17
Pensions	10.42	10.96	10.62	2.7	5.75	5.26	6.85	8.37

* Includes Austria, Belgium, Finland, France, Greece, Germany, Ireland, Italy, Luxembourg, Portugal, and Spain.

Sources: OECD.stat and authors' calculations

Table 3 Percent of Population below Each Income Level, mid-2000s

Proportion of Current Median Income	Greece	Germany	France	Ireland	UK	United States	OECD
40 percent	7	6.3	2.8	7	3.7	11.4	5.7
50 percent	12.6	11	7.1	14.8	8.3	17.1	10.6
60 percent	19.6	17.2	14.1	23.3	15.5	23.9	17.4

Source: OECD.stat

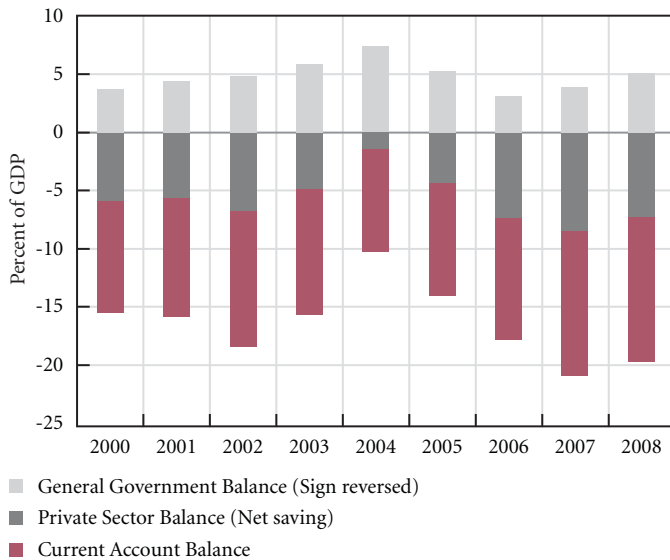
evidence is not consistent with the picture presented in the media of an overly generous welfare state—unless the comparison is made against the United States.

What most economists fail to understand is that the government sector balance is the opposite of the nongovernment sector balance. This is not a theory but a simple accounting identity based on double-entry bookkeeping. This is important, since

changes in the government sector balance will have consequences for the nongovernment sector balance.

Let's divide the economy into three sectors: private, government, and external. If one sector spends less than its income (i.e., saves), one or both of the other sectors must be spending more than their income (i.e., dissaving or running a deficit). The aggregate identity looks like this:

Figure 2 Greek Sectoral Balances, 2000–08
(in percent of GDP)



Sources: Eurostat and authors' calculations

$$(S - I) + (T - G) + (M - X) = 0$$

We can rearrange the equation as

$$(S - I) = (G - T) + (X - M)$$

where $(S - I)$ is the net saving of the combined private sector—households plus firms. The second term, $(G - T)$, is the overall government balance, including federal, state, and local governments. When the government is running a deficit ($G > T$), this term is positive. And finally, $(X - M)$ is the current account balance. When the current account is in surplus, this term is positive.

In a closed economy without a government sector, saving always equals investment. If the private sector is to save more than domestic investment, then there must be other sectors willing to run deficits. A government deficit, for example, is an injection into private income, and hence generates saving in excess of investment. The rest of the world is in a deficit position relative to a country with a current account surplus, which, again, is an injection into the domestic income flow. Therefore, the public and external sector deficits are what allow, or “finance,” the private sector’s saving in excess of domestic investment (Wray 1998).¹

When the government sector goes into deficit, the shortfall equals the additional private sector saving (or reduction of private sector deficit), plus additional net imports. Greece has

chronically run a current account deficit as well as a private sector deficit (Figure 2). By identity, Greece’s current account deficit less its private sector deficit equals its government deficit. During recessions, the private sector cuts spending and tries to increase savings, moving the government balance further into deficit territory as automatic stabilizers kick in. When the current account goes into deficit, which is a leakage of private sector income, private sector saving will fall unless the government deficit rises by the same amount. In the context of Greece’s high current account deficit, its private sector has been running a deficit for the past decade. Figure 2 shows the combined private sector balance, which declined from minus 6 percent of GDP in 2000 to minus 7.5 in 2008. If we were to look only at the household sector, its net saving declined much more over the same period, from minus 7 percent to minus 11 percent (not shown in graph).

We want to emphasize that this is not a theory, nor does it contain any behavioral assumptions. However, the sectoral balances approach is a good tool for analyzing policy proposals. When some analyst says that Greece needs to lower its budget deficit to 3 percent of GDP, then, looking at the sectoral balances, one must ask, What needs to happen to the balances in the other sectors for this to take place? For example, in 2009 the Greek current account deficit was about minus 10 percent of GDP. The budget deficit, including central bank currency swaps, was about minus 13 percent of GDP, allowing the private sector to save at 3 percent of GDP. By adopting the euro, Greece abandoned the option of allowing its currency to depreciate as a means of improving its current account stance. Without this option, it is hard to imagine how Greece could boost its exports (and/or reduce its imports) to the point of achieving a balanced or surplus trade account—a swing of 10 percent of GDP. If the country is to lower its budget deficit to 3 percent of GDP to comply with the Stability and Growth Pact (SGP) limit, the private sector will need to run a deficit of minus 7 percent, provided there is no change in the current account balance.

In other words, without a massive adjustment in its current account balance, Greece must replace its public deficits with private ones for the austerity plan to succeed—a necessarily rapid buildup of private debt that would be unsustainable. Germany’s highly extolled disciplined fiscal policy has been able to accomplish precisely this (Figure 3). The low levels of German government debt have been offset by high levels of private debt, which is (arguably) less sustainable. Ireland, Spain, and Portugal are in a similar situation. Greece, on the other hand, has allowed its

Figure 3 Eurozone and U.S. Outstanding-debt Levels, 2009 (in percent of GDP)



Sources: Calculations by Flavia Krause-Jackson and Giovanni Salzano of Bloomberg, based on ECB and Eurostat data

private sector to operate with somewhat lower levels of debt, as the government’s deficit has risen relatively more. Indeed, the “profligate” Greeks have less private debt than their neighbors do—which could put them in a better position to withstand this crisis.

Still, financial crises and recessions inevitably lead to larger public deficits and debts, as discussed above. The private sector deleveraging that occurs in recession must be accompanied by public sector leveraging, unless the current account moves to the surplus side.

The problem is not that Greece has very high levels of debt and deficit because of a profligate government or lazy workers. Most developed countries, including the United States, the UK, and Japan, are in a similar situation in terms of their deficit and debt positions. The issue is that the SGP requirements are arbitrary, and they are not rooted in any sensible theoretical arguments or empirical evidence. Countries have different export profiles and private sector saving rates, and these will endogenously affect the public sector’s balance. For European governments to comply with the SGP requirements at all times, they need to get rid of most of their social protection policies, so that “safety net” spending does not rise in a recession. This would be counterproductive, to say the least, and it is not something we are advocating. Rather, we want to show

how the nondiscretionary nature of the deficit leaves government few options in terms of cutting a deficit during a recession.

Why Won’t the Rescue Plan Save the Euro?

It’s hard to see a positive European outcome from the EU/IMF rescue plan, given the perverse incentives in place. Higher taxes will only mean more tax evasion. The bailout will make it harder to convince people in the problem debtor nations that failing to change will result in disaster. Since the real rescue is of the European banks that hold all this debt, we once again have a transfer of money from thrifty taxpayers to imprudent banks, making moral hazard more hazardous.

Some have likened the €750 billion bailout structure to the creation of one of those notorious special purpose vehicles that helped to bring on the global financial crisis. The largest component is the European Financial Stability Facility (EFSF), which has access to €440 billion (\$545 billion) to lend to struggling eurozone members. The hope is that it will be able to issue AAA-rated debt guaranteed by all eurozone members except Greece (any nation seeking help is excluded). Ironically, as the number of nations receiving funds from the EFSF grows, the number backing that debt decreases—making it less likely that EFSF debt can retain the highest rating.

Details are still being worked out, but it appears that any nation that cannot float debt at an interest rate of less than 5 percent will be able to borrow from the EFSF at a lower rate. Portugal recently found itself in that category after auctioning debt at 5.225 percent, and while it has denied it would seek help, the better terms it could obtain through the EFSF must look attractive. In any case, only 40 percent of the nations that stand behind the EFSF’s debts are themselves rated AAA, so what we have is mostly lower-rated governments guaranteeing EFSF debt that *hopes* to get an AAA rating. At least on the surface, that arrangement seems fishy. If more countries are downgraded and if more need to seek assistance, it is possible that the guarantees will not be sufficient to allow the EFSF to issue the full €440 billion, precisely when the full amount is needed most.

Greece has already begun to implement its austerity program—which, of course, came with strings attached. Its budget deficit has been reduced by 40 percent over the first five months of the year, thanks to big spending cuts, yet slower growth is causing revenues to come in below targets. GDP fell by 1 percent in the first quarter, and by 2.5 percent compared with the same period last year. Large fuel-tax increases have contributed to growing

inflation, up to 5.4 percent in May from 4.3 percent in April. More spending cuts are on the horizon, since the bailout terms require the deficit to be reduced by more than five percentage points, to 8.1 percent of GDP, by the end of the year. Social unrest has increased in response to the combined layoffs, pay cuts, tax and price increases, and proposed pension reforms.

As the European financial crisis continues to percolate, a few irreducible facts are now distressingly clear.

First, Greece has no hope of repaying its debts as they are now constituted. Thus, the much contested, three-year €110 billion (\$136 billion) bridge bailout plan will not restore Greece's fiscal situation. The markets may not like to think about it, but sooner or later Greece will have to restructure its debt; one or more of the other PIIGS—Portugal, Ireland, Italy, and Spain—will probably have to do the same. Their structural deficits, not to mention the rising cost of servicing their debt, are simply too large to be significantly reduced through deflationary austerity measures. Greece has a primary deficit exceeding 6 percent of GDP and a budget deficit of at least another 4 percent due to financing the interest on its accumulated debt. And it faces a contraction in its GDP for at least the next three years. Do the math: Greece must contract its deficit by an amount equal to 10 percent of GDP in order to achieve a stable debt-to-GDP ratio—a feat that is basically impossible for any government to accomplish in a short time span. A rising debt-to-GDP ratio, together with a contracting economy, will make continued access to private financing very doubtful. Growth in many of the PIIGS—including Greece—will be negative for at least the next two years. Meanwhile, the smart money is headed for the exits.

Second, although Greece can default on most of its public debt with a unilateral act of Parliament—a move that may yet prove irresistible, given the political and economic realities—Greece, the IMF, and the rest of the eurozone would be much better off if this were avoided. A default would mean not only horrific economic pain for Greek citizens but also the threat of financial turmoil across Europe and possibly the world, since many major banks would be implicated. In addition, the debt of Spain, Portugal, Ireland, and possibly Italy would be severely compromised. These governments would at the very least face lower credit ratings and much higher borrowing costs, making their default more likely. Since investors know this, there might also be bank runs.

Further, the legal problems entailed in such a default would drag on for years. Any euro-denominated obligations falling

Table 4 Greek Public Debt * Held by Financial Institutions in the Eurozone (in billions of dollars)

	Banks	Mutual Funds	Pension and Other Funds
Greece	55		38
France	24	26	4
Germany	25	8	3
Italy	7	11	8
Belgium	9	3	7
Netherlands	8	3	9
Luxembourg	8		12
Britain	11		1
Austria	5	3	

* Total debt in 2009Q3 was \$390 billion.

Sources: IMF and Barclays Capital

under the legal jurisdiction of other EU members would not be abrogated by a Greek default. Even if Greece were to abandon the euro and adopt its own sovereign currency, its firms and households would still face default proceedings across the EU. In other words, Greece does have the sovereign power to adopt a new currency and to redenominate all domestically held debts in that currency, but it cannot force the redenomination of debts held outside its borders. Given Greece's linkages with other EU nations, the ramifications of default would be huge, since its citizens would still owe euros, and most would have little euro earning capacity to service those debts.

This is related to a third incontrovertible fact: unification has exposed other members to the debt of Euroland's "problem children." Large quantities of Greek public debt are held by other eurozone members, especially by banks and mutual funds in France and Germany (Table 4).

Eurozone banks also hold massive amounts of Greek non-public sector debt. As the June *BIS Quarterly Review* shows, at the end of 2009 the exposure of banks headquartered in the eurozone was equal to almost two-thirds of international exposure to the debts of Greece, Ireland, Portugal, and Spain (BIS 2010). The euro banks had exposures of €575 billion (\$727 billion) to Spain, €318 billion (\$402 billion) to Ireland, €193 billion (\$244 billion) to Portugal, and €163 billion (\$206) billion to Greece—a total that far exceeds the funds committed through the bailout (Table 5). Of the total, the euro-headquartered banks held €200 billion (\$254 billion) of government debt issued by these four countries, equal to 16 percent of their total exposure to debt issued by these

Table 5 Bank Exposures to Greece, by Country and Sector, 2009Q4* (in billions of U.S. dollars)

	Public Sector	Banks	Nonbank Private Sector	Other Exposures	Total Exposures*
Germany	22.792	11.54	10.026	0	44.358
Spain	0.583	0.08	0.543	0.367	1.573
France	30.627	5.501	42.69	29.477	108.295
Italy	3.067	1.296	2.495	2.238	9.096
Other eurozone	25.712	2.011	12.419	2.801	42.943
UK	3.585	5.434	6.333	4.924	20.276
Japan	4.855	0.721	1.088	0.233	6.897
United States	5.564	5.49	5.508	29.064	45.626
Rest of world	1.771	1.785	3.663	4.625	11.844
<hr/>					
Eurozone	82.781	20.428	68.173	34.883	206.265
World	98.556	33.858	84.765	73.729	290.908

* Unallocated exposures were very small and have been excluded; see Data Appendix: Table 5 for additional notes.

Source: BIS, Consolidated Banking Statistics, Ultimate Risk Basis

nations. German bank exposure to this government debt equaled more than 12 percent of Tier 1 capital. UK banks were the most exposed to Ireland—€182 billion (\$230 billion)—but also held €111 billion (\$140 billion) of Spanish debt. Clearly, default by the PIIGS on government debt would spill over to the rest of the EU, and the effects would be even greater if private sector defaults rose. Note that much of the private sector debt is bank debt, meaning that a vicious cycle of defaults would be set off. In other words, if Greece were to default on its government debt, this would hurt banks throughout the eurozone (including banks in Greece), which would then become insolvent and either default on their own obligations or require a government bailout.

So what is to be done? Greece cannot “afford” default, but it can “restructure.” To the contrarians this may resemble a default, but we can distinguish between outright default and restructuring, as was done for New York City in the 1970s. Basically, Greece needs more favorable credit terms—lower interest rates and a longer period in which to pay. The balance sheets of European and other banks holding the “restructured” Greek bonds to maturity will not be impaired unless strict mark-to-market accounting is used—a method that may be on its way out. In this manner, they can maintain the useful fiction that they are sol-

vent, until they actually become so with the help of cheap money from the European Central Bank (ECB). Undoubtedly, many of Greece’s current bondholders will not easily agree to this plan, but the risk of default would be much, much lower after restructuring. Standard and Poor’s has recently reckoned that investors could lose half of their money should there be a default.

The impact of such a plan would be significant. Carl Weinberg of Frequency Economics figures that over the next five years, Greece needs to raise almost €240 billion (\$296 billion), €150 billion (\$185 billion) of which is principal and the remainder, interest. Restructuring the Greek bonds that mature between now and 2019 into a single, self-amortizing 25-year bond at 4.5 percent would save the country more than €140 billion (\$173 billion) over the next five-and-a-half years. The cash-flow improvement in servicing the country’s debt, together with the ongoing rebalancing of its public finances, would raise its credit profile and make access to credit from private markets possible.

Does all this sound far-fetched? It shouldn’t. All parties have good reason to work together on it, and besides, there is no palatable alternative. We do recognize that things are more complicated today than during New York City’s debt crisis in the 1970s, largely because of the widespread use of credit default swaps (CDSs). Just as in the case of U.S. mortgage-backed securities, the use of CDSs makes it harder to alter the terms of the loans (or in this case, government bonds), which could in turn trigger the terms of the CDSs and force a default event.

What’s Wrong with Euroland?

It is important to recognize the difference between a sovereign currency (defined as a floating, nonconvertible currency) and a nonsovereign currency. A government that operates with a nonsovereign currency, issuing debts either in foreign currency or in domestic currency pegged to foreign currency (or to precious metal), faces solvency risk. However, the issuer of a sovereign currency—that is, a government that spends by using its own floating and nonconvertible currency—cannot be forced into debt. This is recognized, at least partially, by markets, and even by credit raters. It is why a country like Japan can run government debt-to-GDP ratios that are more than twice as high as the “high debt” PIIGS while it still enjoys extremely low interest rates on sovereign debt. By contrast, U.S. states, countries that operate currency boards (like Argentina in the late 1990s), and euro nations face downgrades and rising interest rates, with deficit ratios much below those of Japan or the United States.²

This is because a nation operating with its own currency can always spend by crediting bank accounts, and that includes spending on interest. Thus, there is no default risk (Nersisyan and Wray 2010). However, a nation that pegs its currency or operates a currency board can be forced to default—much as the U.S. government abrogated its commitment to gold in 1933.

Instead of drawing the right conclusion from the Greek debt crisis—that the euro project was doomed to fail by design—most commentators have rushed to embrace the argument that the Greek debt crisis presents a possible scenario for the United States, the UK, and Japan, and to use that argument against deficit spending in these countries despite unacceptable levels of unemployment. Indeed, it is claimed that there is no fundamental difference between Greece and the United States, and that the latter is able to borrow at low rates only because it has a much larger and stronger economy, and because it happens to issue the international reserve currency. In sum, the common view is that even if “the Greek tragedy” is not yet occurring in the United States, it provides a good lesson in what not to do, and gives us a chance to solve our own deficit problems before our lenders start losing confidence in U.S. government debt.

We believe this view is mistaken.

The problem with the eurozone is that each nation gave up its sovereign currency in favor of the euro. For individual nations, the euro is a foreign currency. It is true that each national government still spends by crediting the bank accounts of sellers, and this results in a credit of bank reserves at the national central bank. The problem is that national central banks have to get euro reserves at the ECB for clearing purposes. The ECB in turn is prohibited from buying the public debt of governments: even though national central banks can facilitate “monetization” to enable governments to spend, the clearing imposes fiscal constraints. This is similar to the situation of individual U.S. states, which really do need to tax or borrow in order to spend. Similarly, because a nation like Greece is integrated into the eurozone, its central bank is likely to face a continual drain of reserves from its ECB account if its government runs deficits. This is replenished through the sale of government bonds in the rest of the eurozone, reversing the flow of reserves in favor of the seller’s central bank. The mechanics of this are somewhat different for U.S. states (which, of course, do not operate with their own central banks), but the implications are similar: euro nations and U.S. states really do need to borrow.

By contrast, a sovereign nation like the United States, Japan, or the UK does not borrow its own currency. It spends by crediting bank accounts. When a country operates on sovereign currency, it doesn’t need to issue bonds to “finance” its spending. Issuing bonds is a voluntary operation that gives the public the opportunity to convert their noninterest-earning government liabilities, currency, and reserves at the central bank into interest-earning government liabilities, treasury bills, and bonds, which are credit balances in securities accounts at the same central bank. If one understands that bond issues are a voluntary operation undertaken by a sovereign government, and that bonds are nothing more than alternative accounts at the same central bank operated by the same government, it becomes irrelevant for matters of solvency and interest rates whether there are takers for government bonds or whether the bonds are owned by domestic citizens or foreigners.

There is a further consideration. When a private entity goes into debt, its liabilities are another entity’s asset: there is no net financial asset creation. When a sovereign government issues debt, it creates an asset for the private sector without an offsetting private sector liability. Hence, government issuance of debt results in net financial asset creation for the private sector. Private debt *is debt*, but government debt is *financial wealth* for the private sector. A buildup in private debt should raise concerns, because the private sector cannot run persistent deficits. However, a sovereign government, as the monopoly issuer of its own currency, can always make payments on its debt by crediting bank accounts; those interest payments are nongovernment income, while the debt is nongovernment assets. Put another way, when one must borrow to make future payments, one is in a Ponzi position. For a government with a sovereign currency, there is no imperative to borrow; hence, it is never in a Ponzi position.

With a sovereign currency, the need to balance the budget over some time period or over the course of a business cycle is a myth. When a country operates with a sovereign monetary regime, debt and deficit limits—even bond issues, for that matter—are self-imposed; that is, there are no financial constraints inherent such as those that exist under a gold-standard or fixed-exchange-rate regime. But that superstition is seen as necessary, because if everyone realized that government was not actually constrained by the necessity of a balanced budget, then it might spend “out of control,” taking too large a percent of the nation’s resources. The late Nobel Laureate Paul Samuelson (1995) agreed:

Table 6 Eurozone Government Deficits and Debt, 2009
(in percent of GDP)

	Budget Deficit	Public Debt
Austria	-3.429496	66.5
Belgium	-5.976824	96.8
Cyprus	-6.07028	56.2
Germany	-3.298853	73.2
Finland	-2.153582	44
France	-7.546907	77.5
Greece	-13.618028	115.1
Ireland	-14.277591	64
Italy	-5.312749	115.8
Luxembourg	-0.735442	14.5
Malta	-3.816527	69.1
Netherlands	-5.298067	60.9
Portugal	-9.412353	76.8
Slovakia	-6.773827	35.9
Slovenia	-5.48805	35.7
Spain	-11.19059	53.2

Source: EBC

I think there is an element of truth in the view that . . . the budget must be balanced at all times. Once it is debunked, [that] takes away one of the bulwarks that every society must have against expenditure out of control. There must be discipline in the allocation of resources or you will have anarchistic chaos and inefficiency. And one of the functions of old-fashioned religion was to scare people, by [using] what might be regarded as myths, into behaving in a way that the long-run civilized life requires. We have taken away a belief in the intrinsic necessity of balancing the budget, if not in every year, [then] in every short period of time. If Prime Minister Gladstone came back to life he would say, “Uh-oh, what have you done?” and James Buchanan argues in those terms. I have to say that I see merit in that view.

Sovereign governments do not face financial constraints in their own currency, as they are the monopoly issuers of that currency. They make any payments that come due, including interest payments on their debt and payments of principal, by crediting bank accounts—meaning that, operationally, they are not constrained in terms of how much they can spend. Nor does

a sovereign government have to allow the markets to determine the interest rate it pays on its bonds, since bond issues are voluntary. On the other hand, countries that give up their monetary sovereignty do face financial constraints, and are forced to borrow from capital markets at market rates in order to finance their deficits. As the Greek experience shows, this monetary arrangement allows the markets and rating agencies (or other countries, in the case of Greece) to dictate domestic policy to a politically sovereign country.

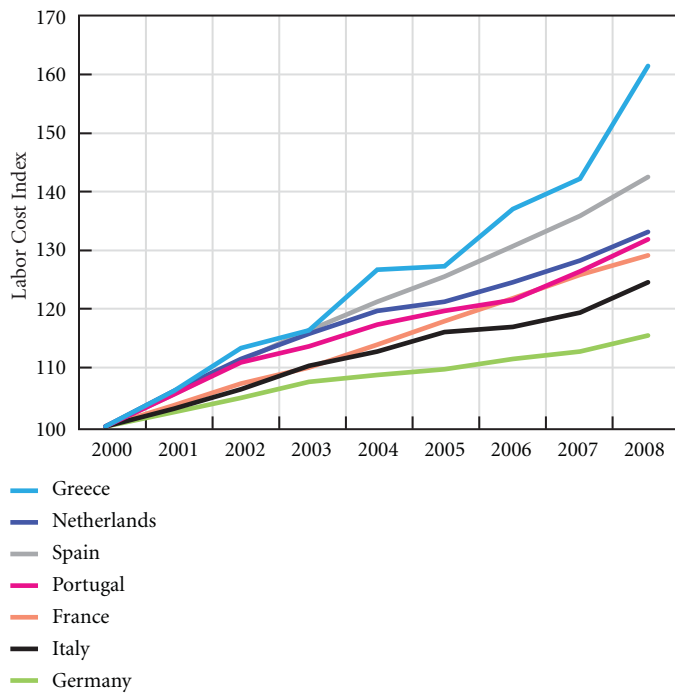
Had the European governments attempted to follow the restrictions of the SGP—an attempt that would most certainly have failed because of the endogenous nature of budget deficits—they would not have been able to support their economies in the current crisis, possibly leading to a global, or at least a continental, depression. As Hyman P. Minsky (2008 [1986]) argued, swings in the government budget balance must be as large as swings in investment (or, more broadly, swings in the private sector balance), so that fiscal policy can be used to counteract the business cycle. Instead of using the government budget as a tool to create a system that is relatively stable and supports high employment, the Europeans have made low deficits the policy goal, without any regard for the consequences that has for the economy. Yet even without the SGP, government spending is constrained by market perceptions of risk—precisely because these nations do not have a sovereign currency system like that of the United States, the UK, or Japan.

Indeed, except for Luxembourg and Finland, all of the other EU countries are in violation of the deficit limit rule, and all but six are already over the 60 percent debt limit (Table 6). Even Germany, which is the world’s largest exporter, is in breach of both the deficit and the debt limits. While some countries crossed those limits only during the current recession, others were already in violation. It really was not the SGP that limited deficit spending but rather the market’s perception that individual governments could not service their debt. In our view, it was inevitable that some nation would eventually reach the threshold that would bring about a crisis—and that the crisis would then spread.

Germany’s Contribution to the Problems of the PIIGS

Germany’s relatively “stronger” fiscal stance results in large part from its ability to run a current account surplus. Indeed, as noted above, Germany is the world’s biggest exporter, and much of its market for exports can be found in Europe. This is, naturally, the other side to the current account deficits of other European

Figure 4 Labor Cost Index, Industry and Services, 2000 Q3 – 2008 Q2 (excluding public administration)

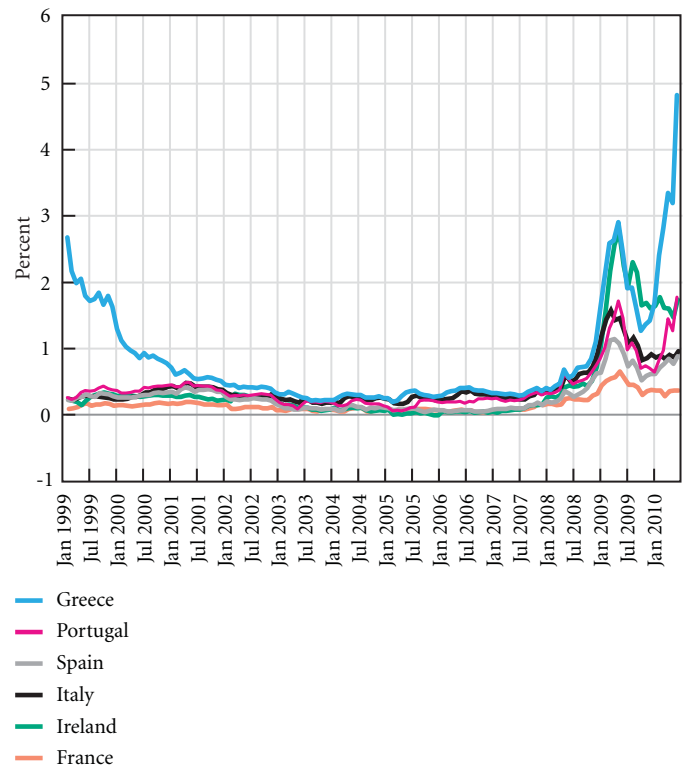


Source: Eurostat

nations, including Greece. It is thus doubly ironic that Germany chastises its neighbors for their “profligacy” but relies on their “living beyond their means” to produce a trade surplus that then allows its government to run smaller budget deficits. Clearly, it is impossible for all nations to run current account surpluses, and Europe, taken as a whole, can run a current account surplus only to the extent that there are other nations that run deficits. But in point of fact, Europe runs an approximately balanced current account with the rest of the world. And as we noted above, it is not within the power of any individual euro nation to devalue its currency in an effort to achieve a current account surplus. Hence, within Euroland it is a zero-sum game: one nation’s current account surplus is offset by a deficit run by a neighbor. And given triple constraints—an inability to devalue the euro, a global downturn, and a powerful neighbor committed to running its own trade surpluses—it seems quite unlikely that a nation like Greece could move toward a current account surplus.

An examination of labor costs across the eurozone shows that Germany has been pursuing a low-wage growth strategy (Figure 4), which is consistent with its export-led growth strategy. France, Italy, and the Netherlands have also been successful

Figure 5 Ten-year Government Bond-yield Spreads, January 1999 – April 2010 (German benchmark)



Sources: Eurostat and authors’ calculations

in holding down wage growth. By contrast, Spain and, especially, Greece have not, with Greek wages growing about 50 percent more than those in Germany. Whether or not these high-wage-growth nations deserve criticism, it is clear that severe austerity measures will have to be imposed on Greece and Spain in order to reduce nominal wages and make them competitive with those in Germany.

Not surprisingly, bond-yield spreads between the PIIGS and Germany have increased to all-time highs (Figure 5). Once a country exceeds the SGP limits, markets perceive its debt as less credible and start demanding higher interest rates. Rating agencies also use the thresholds as justification to cut a country’s debt rating, creating a vicious cycle of higher debt and higher interest rates. The monetary arrangements of the eurozone have made countries hostage to markets and rating agencies alike. In a devastating attack on these agencies, Richard Koo (2010) observes that credit downgrades of sovereign debt are “an extremely dangerous development because it makes it difficult for governments to continue administering the needed fiscal stimulus, and ending

stimulus in the midst of a balance sheet recession could send the global economy into a deep depression.” He notes that the ratings agencies use depressed tax revenues as an excuse for downgrading, and cites Japan’s long experience with the cycle of downgrades and fiscal tightening that prevented recovery in the mid-1990s. Eventually, however, “Japanese investors and analysts took a closer look at the justification for the downgrades and realized that the U.S. and European credit agencies had completely overlooked that Japan was in a balance sheet recession. . . . Having decided that any downgrade based on such un-informed reasoning was meaningless and could safely be ignored, Japan’s public and private sector investors regained their composure. This helped constrain any increase in [Japanese government bond] yields and made it possible for the government to continue fiscal stimulus.” We believe that Koo’s analysis is correct in its application to sovereign countries like Japan and the United States, but it is not applicable to countries like Greece that have adopted the euro. Downgrades of the PIIGS’ ratings boost yields on government debt in a self-reinforcing death spiral.

The problems in Euroland will, of course, affect other nations outside the region. The U.S. stock market has been hit by the bad news from Europe, and ironically, the European crisis is going to worsen problems in Japan, which for two decades has suffered from its own financial heartache. Japanese banks had invested heavily in euro-denominated government debt, seeking the high returns generated by the wide spreads described above. (Japanese retail investors hold sizable investments in all of the PIIGS through mutual funds.) Furthermore, at least two-thirds of lending to emerging markets originates in European banks, meaning that if these institutions get into trouble, they will start calling back loans, destabilizing emerging markets (Nikkei.com 2010). It is not out of the question that the crisis in Euroland will cause a “second dip” crisis around the globe.

Conclusions

Notwithstanding ECB President Jean-Claude Trichet’s desperate efforts to keep the show on the road, the disintegration of the euro is only a matter of time. We should not be at all comfortable with the recent Greek bailout; the tragedy ushered in by the current crisis is only just beginning, and it spells the death of not just a currency but also a vision for a unified Europe.

The same factors that necessitated the bailout of Greece will probably force similar rescues of Portugal, Spain, Ireland, and Italy, at the expense of the same resentful taxpayers in Germany,

France, and the other solvent eurozone nations. Costly as these bailouts may be, none will provide more than palliative care for nations too indebted to dig their way out on their own.

The essential problem is that the European Union was founded as a political venture by the ambitious heads of the two leading continental powers, France and Germany. But politics and economics can rarely be kept far apart, and thanks to the euro, their creation quickly grew into an economic venture—a promising one at that. The irony is that the lack of a true political union—which would have permitted a unified fiscal policy—is precisely what will kill the whole idea. Unable to devalue their way out of trouble, countries like Greece are left with no viable options, and voters in Germany and France will soon tire of paying the bill.

For better or worse, it is time to start thinking about a major reconstruction of the European project, along two possible paths.

First, what would a post-euro world look like? Nations cannot leave the euro one at a time because each would face the threat of bank runs and severe inflation—this is why Greece cannot simply revert to the drachma—so there would have to be a coordinated dissolution, which might ideally resemble an amicable divorce. As is the case in most divorces, this one would likely leave all participants poorer, opening the door to higher transaction costs and tariffs (making imports more expensive) and curtailing mobility of labor and capital. European borders would become less porous. The net result would be a more inefficient, fractured system, of the kind that inspired the euro in the first place. Moving away from the euro would have some benefits for rich and poor countries alike, but it would be an especially painful blow to the continent’s less developed economies. Income inequality between European countries would increase, if only because poorer eurozone nations could kiss their subsidies, explicit and implicit, good-bye.

More broadly, the end of the euro would be a blow not just to European pride but to the *idea* of Europe as well. The challenge that Europeans thought they were mounting to American power—the power that inspired France and Germany—turned out to be hollow. The disintegration of the euro would only bolster the preeminence of the dollar in global commerce and affairs, and perhaps leave China as the only plausible rival to American power. The implication, unfortunately, is that what little political unity exists on the continent would be undermined. While we may hope for an amicable divorce, couples can easily dissipate their wealth and energies in acrimony, so imagine how much harder it would be for the 16 euro nations to agree on a plan for

disentangling themselves from one another. Winners and losers are inevitable in such situations. At the very least, we can expect a good deal more demonstrating on the part of public employees in European capitals. Ultimately, of course, European countries would survive the death of the euro, but the end of a unified continental currency—and an increasingly unified economic actor called Europe—would leave the entire world poorer.

The second path would be to achieve a more perfect union. Immediate relief could be provided by the ECB, if it were directed to create and distribute 1 trillion euros across all eurozone nations on a per capita basis. Each individual eurozone nation would be allowed to use this emergency relief as it sees fit. Greece might choose to purchase some of its outstanding public debt; others might choose fiscal stimulus packages. While this might sound much like the current bailout plan, in which the ECB will buy government bonds in the secondary markets (assuming the risk of a default by Greece, for example), the emergency measures we are outlining³ would be adopted at the discretion of the individual nations. Hence, the ECB would finance current government operations if national governments chose that course of action.

Over the longer term, a permanent fiscal arrangement would be necessary, through which the central eurozone authorities could distribute funds to member nations. Ideally, this would be overseen by the equivalent of a national treasury responsible to an elected body of representatives—in this case, the European Parliament. This arrangement would replicate, in some ways, the U.S. Treasury's relationship with U.S. states, but with greater fiscal transfers and more control by European states. This would avoid the politically unpopular cession of authority to the EU. Hence, perhaps an amount equal to 10 or 15 percent of eurozone GDP would be distributed to member nations each year on a per capita basis to support their fiscal efforts. This would relieve pressures to adopt austerity measures, and limit the necessity of borrowing from financial markets in order to finance deficits. To be sure, the European Parliament has long engaged in fiscal transfers to the poorer nations, but its total budget has remained below 1 percent of GDP, which is clearly too small to enable economies to operate near full employment even in the best of times. In a deep recession, even 15 percent of GDP might not be enough; if not, the EU could provide more funding.

There is another, intermediate possibility that would appear to be consistent with existing eurozone agreements: the creation and use of “parallel” currencies by individual members. To be

sure, this would not resolve the problems with excessive government debt that has already been issued. But moving forward, each nation could create a new currency for domestic use—say, Greece could issue a new drachma (for a similar proposal, see Goodhart and Tsomocos 2010). These would be used by the government to finance a portion of its spending, and accepted for a portion of tax payments. The new drachma would “float” against the euro, and hence would be a sovereign currency by our definition. Greece would not convert to the euro, but its central bank would offer reserves and clear accounts in the drachma (and would continue to do so in the euro as well). The government would not need to issue drachma bonds but might choose to pay an overnight rate on drachma reserves. It would create more drachmas as spending increased and destroy them when tax payments were received. And it would continue to service its euro debt with euros—unlike the first solution proposed, there would be no default—but it would not issue new euro debt. The problem is that Greek taxpayers would likely prefer to hold euros and pay in drachmas. To ensure that euros were received in order to service euro-denominated debt, the government would have to require a portion of taxes be paid in euros.

A final, related proposal has been made by Marshall Auerback and Warren Mosler (2010):

Greece can successfully issue and place new debt at low interest rates. The trick is to insert a provision stating that in the event of default, the bearer on demand can use those defaulted securities to pay Greek government taxes. This makes it immediately obvious to investors that those new securities are ‘money good’ and will ultimately redeem for face value for as long as the Greek government levies and enforces taxes. This would not only allow Greece to fund itself at low interest rates, but it would also serve as an example for the rest of the euro zone, and thereby ease the funding pressures on the entire region.

In our view, both of these intermediate proposals are worth looking at, but both suffer from moral hazard: they could lead the Greek government to pursue “business as usual,” spending too much and generating inflation. And they do not resolve the fundamental problem with the euro: the absence of a supranational fiscal authority that can generate an alternative to the “beg-

gar thy neighbor” export-led growth strategy that the current arrangement promotes.

Data Appendix: Table 5

Data are derived from the Bank for International Settlements’ (BIS) consolidated banking statistics and the most recent *BIS Quarterly Review*. The numbers relate primarily to Table 9D: Consolidated Foreign Claims on Ultimate Risk basis (<http://www.bis.org/statistics/consstats.htm>).

Note the following caveats:

1. International claims obtained from the BIS consolidated banking statistics (immediate borrower basis).

2. Total exposures reported in Table 5 are not only made up of the Ultimate Risk Foreign Claims but also contain the so-called “other exposures” (i.e. derivative contracts, guarantees, and credit commitments, or Tables 9C:V, 9C:W, and 9C:X of BIS consolidated banking statistics). These “other exposures” are not reported on a bilateral basis in the Statistical Annex due to most reporting countries’ Observation Level Confidentiality constraints. The German banks are an exception (see the June 2010 *BIS Quarterly Review*, page 18, note 6; and Graph 3, note 2).

3. Claims of other eurozone banks on the residents of each country do not include the claims of banks headquartered in that country, as these are not foreign claims. Similarly, the claims of Greek banks on residents of Greece are not reported, since they are not foreign claims.

4. The sectoral breakdown of foreign claims by reporting country is not publicly available on the BIS website, as this data is reported as restricted by most of the 24 countries reporting on an ultimate-risk basis. It is only the data of the seven individual reporting countries shown in Table 5 that is reported by these central banks as Free for Publications.

Notes

1. The government deficit numbers probably understate the actual deficit as they don’t include settlements under swaps.
2. The average debt-to-GDP ratio for the 50 U.S. states for 1997–2008 was 7.11 percent. Only 10 states had double-digit debt-to-GDP ratios in 2009; Massachusetts had the highest, at 19.70 percent of GDP. Even an economically important state like California is unable to run up high levels of debt. On average, California’s debt was 5.64 percent of its GDP for 1997–2008 (sources: Bureau of Economic Administration, Census Bureau, and authors’ calculations).

3. This proposal was initially outlined by Warren Mosler (2010a, 2010b).

References

- Auerback, M., and Mosler, W. 2010. “Greece CAN Go It Alone.” *New Economic Perspectives Blog*, April 30.
- Bank for International Settlements. 2010. “International Banking and Financial Market Developments.” *BIS Quarterly Review*. June.
- Goodhart, C., and Tsomocos, D. 2010. “The Californian Solution for the Club Med.” *The Financial Times*, January 24.
- “Inside View: Euro Mess Puts Retail Investor Assets at Risk.” *Nikkei.com*, May 24.
http://e.nikkei.com/e/fr/v_inside.aspx.
- Koo, R. 2010. “Why Inflation Might Not Be Around the Corner for US and Europe.” *Nomura Securities Co Ltd, Tokyo, Economic Research—Flash Report*, April 27.
- Minsky, H. P. 2008 [1986]. *Stabilizing an Unstable Economy*. New York: McGraw-Hill.
- Mosler, W. 2010a. “Proposal for the Eurozone.” *The Center of the Universe Blog*, January 19.
- . 2010b. “Upped My Eurozone Proposal to 20% of GDP.” *The Center of the Universe Blog*, April 16.
- Nersisyan, Y., and Wray, L. R. 2010. “Does Excessive Sovereign Debt Really Hurt Growth? A Critique of *This Time Is Different*, by Reinhart and Rogoff.” Working Paper No. 603. Annandale-on-Hudson, N.Y.: Levy Economics Institute. June.
- Polychroniou, C. 2010. “Greece on Edge of the Abyss.” *OpenDemocracy*, May 16.
- Samuelson, P. 1995. Interviewed by Mark Blaug for his film *John Maynard Keynes: Life/Ideas/Legacy*.
- Weinberg, C. B. 2010. “Only Debt Restructuring Can Save Greece.” *The Wall Street Journal*, April 14.
- Wray, L. R. 1998. *Understanding Modern Money: The Key to Full Employment and Price Stability*. Cheltenham (UK) and Northampton, Mass.: Edward Elgar.

About the Authors

DIMITRI B. PAPADIMITRIOU's areas of research include financial structure reform, fiscal and monetary policy, community development banking, employment policy, and the distribution of income, wealth, and well-being. He heads the Levy Institute's Macro-Modeling Team, studying and simulating the U.S. and world economies. In addition, he has authored and coauthored studies relating to Federal Reserve policy, fiscal policy, employment growth, and Social Security reform. Papadimitriou is president of the Levy Institute and executive vice president and Jerome Levy Professor of Economics at Bard College. He has testified on a number of occasions in committee hearings of the U.S. Senate and House of Representatives, was vice chairman of the Trade Deficit Review Commission of the U.S. Congress (2000–01), and is a former member of the Competitiveness Policy Council's Subcouncil on Capital Allocation. He was a Distinguished Scholar at the Shanghai Academy of Social Sciences in 2002. Papadimitriou has edited and contributed to 10 books published by Palgrave Macmillan, Edward Elgar, and McGraw-Hill, and is a member of the editorial boards of *Challenge* and the *Bulletin of Political Economy*. He is a graduate of Columbia University and received a Ph.D. in economics from the New School for Social Research.

Senior Scholar L. RANDALL WRAY is a professor of economics at the University of Missouri–Kansas City and director of research at the Center for Full Employment and Price Stability. He works in the areas of monetary policy, employment, and social security. Wray has published widely in academic journals and is the author of *Money and Credit in Capitalist Economies: The Endogenous Money Approach* (Edward Elgar, 1990) and *Understanding Modern Money: The Key to Full Employment and Price Stability* (Edward Elgar, 1998). He is also the editor of *Credit and State Theories of Money: The Contributions of A. Mitchell Innes* (Edward Elgar, 2004) and coeditor (with M. Forstater) of *Keynes for the 21st Century: The Continuing Relevance of The General Theory* (Palgrave Macmillan, 2008). Wray holds a B.A. from the University of the Pacific and an M.A. and a Ph.D. from Washington University in St. Louis.

YEVA NERSISYAN is a fourth-year interdisciplinary Ph.D. student in economics and math and statistics at the University of Missouri–Kansas City. She received a B.A. with honors from Yerevan State University in Armenia in 2006 and has been working as a research assistant to L. Randall Wray since August of that year. Her research interests include monetary theory and policy, financial economics, and development economics. She is currently at work on her dissertation, which addresses the transformation of the U.S. financial system in the postwar period.