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Europe's Fiscal Crisis Revealed: In-Depth Analysis of Spending, Austerity, and Growth

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Salim Furth, Editor

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Preface

Derrick Morgan

Why would your time be well spent reading this special report on detailed economic data from Europe over the past half-dozen years? It is very simple: Washington must learn from Europe's mistakes, or be doomed to repeat them.

Those who favor ever-increasing spending and loathe smaller government prefer to call any measures to reduce deficits "austerity." The word itself has the unmistakably negative connotation of the miserly uncle who is furious that somewhere, just maybe, someone is having a good time. These proponents of perpetual deficits and unfunded entitlement programs love to portray proponents of restrained government as killjoys who will lead a nation to ruin because of their obsession. It is to their advantage to lump together the data from tax increases with spending cuts, using the poor results from the former to tar the later.

This report examines closely what the governments in Europe actually did, with precise technical descriptions and analysis. Some reduced spending, others increased taxes, and some pursued a combination of the two to right their fiscal imbalance. Interestingly, the data reveal that the governments did not always follow through with their plans as originally envisioned.

This report demonstrates that not all methods of fiscal restraint were equal: increasing taxes was more damaging to the economy and less effective in reducing deficits than spending cuts. The effective way to shrink deficits – reducing spending – leads to stronger economic growth over time, while the counterproductive way – tax increases – leads to slower economic growth and lingering ill-effects, with less deficit reduction than advertised.

As the United States faces a flood of annual fiscal deficits and a tsunami of unfunded future liabilities, at some point our policymakers will have to take more of the people's money or spend less. Thanks to this report, policymakers can refer to unambiguous data. And to those who complain it is not possible to close our annual and long-term structural deficits by focusing on spending, The Heritage Foundation has shown one way in the study *Saving the American Dream*.

Instinctively, conservatives understand the incentive effects of austerity done poorly; we reject tax hikes, particularly during times of slow growth. Increasing government spending may temporarily boost the quarterly GDP numbers, but only to the long-term detriment of the private sector, the real creator of prosperity. (The private sector knows spending today means higher taxes tomorrow and capital flows to government bonds instead of the productive private sector.) It is the fiscal equivalent of eating your seed corn to spend borrowed money today. Evidence marshaled in the following pages is clear: When the time for addressing deficits comes—and it will—we need to reduce spending, not raise taxes. We must learn from Europe's mistakes, not repeat them.

Chapter 1: A Review of the Scholarship on Austerity[1]

Alberto Alesina, PhD and Veronique de Rugy, PhD

The debate over the merits of austerity (the implementation of debt-reduction packages) is a frustrating one. Most people focus only on deficit reduction, but that can be achieved in many different ways. Some ways deeply hurt growth (raising taxes) while others can be much less harmful, such as a package of spending cuts accompanied by growth-enhancing reforms.

As a result, there are a lot of miscommunications on both sides of the political aisle about the issue at hand. For instance, talking about the situation in Europe, it is not unusual to hear free-market advocates say things like "Where is the austerity in Europe?" when what they actually mean is, "Spending wasn't cut very much in Europe, and often it wasn't cut at all." Liberals will respond, "It is not true. Austerity was implemented in Europe and this is precisely why Europe is suffering," and will point to data about the size of fiscal adjustment[2] packages in Europe.[3]

The data show that austerity has taken place in Europe. However, with some rare exceptions, the form of austerity that was implemented was fairly heavy on the tax-increase side and was far from involving savage spending cuts. Greece, a country that has been at the center of the austerity debate, should be in its own category. Both large spending cuts and large tax increases were implemented there. However, there is little chance that austerity, no matter what form it took, would have worked there given Greece's underlying economic and institutional shortcomings.

Considering the confusion that persists on this issue despite years of debate, this chapter summarizes what scholars have learned so far from past fiscal adjustments. To start, we will show that in the pursuit of austerity, the important question has less to do with the *size* of the austerity package than what *type* of austerity measures are implemented. In fact, the consensus in the academic literature is that the composition of fiscal adjustment is a key factor in achieving successful and lasting reductions in debt-to-GDP ratio. Specifically, fiscal adjustment packages made mostly of spending cuts are more likely to lead to lasting debt reduction than those made of tax increases.

Finally, as it turns out, there is still significant debate about the short-term economic impact of fiscal adjustments. However, as we will show in this chapter, important lessons have emerged. First, we find that fiscal adjustments and economic growth are not impossible. Second, we show

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[1] This chapter has been adapted from our Mercatus Center paper.
Veronique de Rugy and Alberto Alesina, "Austerity: The Relative Effects of Tax Increases versus Spending Cuts," *Mercatus Research,* March 7, 2013, http://mercatus.org/sites/default/files/deRugy_RelativeEffects_v1.pdf (accessed October 17, 2013).

[2] 'Fiscal adjustment' and 'fiscal consolidation' are formal terms for deficit reduction, which is most often what is meant by "austerity" in the current context.

[3] Dylan Mathews, "Yes, Europe Really Is in the Throes of Austerity," *The Washington* Post, June 5, 2013, http://www.washingtonpost.com/blogs/wonkblog/wp/2013/06/05/yes-europe-really-is-in-the-throes-of-austerity/ (accessed October 17, 2013).

that, while fiscal adjustments do not always trigger immediate economic growth, spending-based adjustments are much less costly in terms of output than tax-based ones. In fact, when governments try to reduce the debt by raising taxes, it is likely to result in deep and pronounced recessions, possibly making the fiscal adjustment counterproductive. We then discuss how expansionary fiscal adjustments are more likely to occur when they are accompanied by growth-oriented policies, such as liberalizing both labor regulations and markets for goods and services, in addition to a monetary policy that keeps interest rates low.

These findings are keys to designing proper policies to get the United States and European nations out of their debt crises and onto a more sustainable fiscal path.

How to Reduce Debt-to-GDP Ratios

The United States is not the first nation to struggle with a worrisome debt-to-GDP ratio. The evidence suggests that the types of fiscal adjustment packages that are most likely to reduce debt are those that are heavily weighted toward spending reductions and not tax increases.[4]

One of the difficulties of studying the impact of large fiscal adjustments on both debt and economic growth involves the definition and identification of successful and expansionary episodes. For a long time, the identification criteria were based on observed outcomes: a large fiscal adjustment was one where the cyclically adjusted primary deficit over GDP ratio fell by a certain amount (normally at least 1.5 percent of GDP). Following the approach pioneered by University of California economists Christina Romer and David Romer,[5] IMF economists suggested a different way to identify large exogenous fiscal adjustments: a large fiscal adjustment is an explicit attempt by the government to reduce the debt aggressively and it is unrelated to the economic cycle.[6] This new approach was meant to guarantee the "exogeneity" of the fiscal adjustments. The authors also suggest that a difference in the way fiscal adjustments are measured would change the overall research results. However, the difference in the way fiscal adjustments are defined does not change the overall result. A 2012 study by Alberto Alesina and Goldman Sachs economist Silvia Ardagna shows that spending-based adjustments

[4] Matthew Mitchell of the Mercatus Center at George Mason University has done a review of the academic literature on this issue, and he finds that, of the 22 papers published that looked at this question, all of them find that the most promising way to shrink the debt is to not increase taxes and to restrain spending so that it shrinks relative to economic output. See
Matt Mitchell, "Does UK Double-Dip Prove That Austerity Doesn't Work?" *Neighborhood Effects*, Mercatus Center at George Mason University, April 26, 2012, http://neighborhoodeffects.mercatus.org/2012/04/26/does-uk-double-dip-prove-that-austerity-doesnt-work/ (accessed October 17, 2013). See also
Alberto Alesina and Silvia Ardagna, "The Design of Fiscal Adjustments," NBER Working Paper 18423, *National Bureau of Economic Research,* September 2012, http://www.nber.org/papers/; and
Alberto Alesina, Carlo Favero, and Francesco Giavazzi, "The Output Effect of Fiscal Consolidations," NBER Working Paper 18336, *National Bureau of Economic Research*, August 2012, http://www.nber.org/papers/w18336.
[5] Christina D. Romer and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," *American Economic Review* 100, no. 3 (2010): 763–801.
[6] Pete Devries, Jaime Guajardo, Daniel Leigh, and Andrea Pescatori, "A New Action-based Dataset of Fiscal Consolidation," Working Paper 11/128, *International Monetary Fund*, June 2011, http://www.imf.org/external/pubs/ft/wp/2011/wp11128.pdf

are more likely to reduce the debt-to-GDP ratio, regardless of whether fiscal adjustments are defined in terms of improvements in the cyclically adjusted primary budget deficit or in terms of premeditated policy changes designed to improve a country's fiscal outlook.[7] Similar results with more advanced technical tools using the IMF episodes are also reached by Alesina and Bocconi University economists Carlo Favero and Francesco Giavazzi.[8]

Other research has found that fiscal adjustments based mostly on the spending side are less likely to be reversed and, as a result, have led to more long-lasting reductions in debt-to-GDP ratios.[9] Beyond showing whether spending-based adjustments or revenue-based ones are more effective at reducing debt, the literature also looked at which components of expenditures and revenue are more important. The results on these points are not as clear-cut, partly due to the wide differences in countries' tax and spending systems. With that caveat in mind, successful fiscal adjustments are often rooted in reform of social programs and reductions to the size and pay of the government workforce rather than in other types of spending cuts.[10] Results about which type of revenue increases contribute to successful fiscal adjustment are much less clear.[11]

Also, while successfully reducing the debt-to-GDP ratio is possible, a majority of historical fiscal adjustment episodes fail to do so. Data from studies by Alesina and Ardagna and Andrew Biggs, Kevin Hassett, and Matthew Jensen show that roughly 80 percent of the adjustments studied were failures.[12] One explanation is that even (or especially) in a time of crisis, lawmakers are driven more by politics than by good public policy. Countries in fiscal trouble generally get there through years of catering to pro-spending constituencies, be they senior citizens or members of

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[7] Alesina and Ardagna, "The Design of Fiscal Adjustments".

[8] Alesina, Favero, and Giavazzi, "Output Effect of Fiscal Consolidations."

[9] Alesina and Ardagna, "Design of Fiscal Adjustments."

[10] Andrew Biggs, Kevin Hassett, and Matthew Jensen, "A Guide for Deficit Reduction in the United States Based on Historical Consolidations That Worked," AEI Economic Policy Working Paper, *American Enterprise Institute*, December 27, 2010, http://www.aei.org/papers/economics/fiscal-policy/a-guide-for-deficit-reduction-in-the-united-states-based-on-historical-consolidations-that-worked/ (accessed October 17, 2013). See also
Alberto Alesina and Roberto Perotti, "Fiscal Expansions and Fiscal Adjustments in OECD Countries," NBER Working Paper 5214, *National Bureau of Economic Research*, August 1995;
Alberto Alesina and Roberto Perotti, "Fiscal Adjustments in OECD Countries: Composition and Macroeconomic Effects," Working Paper 96/70, *International Monetary Fund*, July 1, 1997, http://www.imf.org/external/pubs/cat/longres.cfm?sk=2037.0;
Philip R. Lane and Roberto Perotti, "The Importance of Composition of Fiscal Policy," Working Paper 200111, *Trinity College Dublin*, October 25, 2001, http://www.tcd.ie/Economics/TEP/2001_papers/TEPNo16PL21.pdf;
Stephanie Guichard et al., "What Promotes Fiscal Consolidation: OECD Country Experiences," Working Paper 553, *Organisation for Economic Co-operation and Development*, May 28, 2007, http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=eco/wkp(2007)13.

[11] Biggs, Hassett, and Jensen, "A Guide for Deficit Reduction in the United States Based on Historical Consolidations That Worked."

[12] Alesina and Ardagna find that about 84 percent of fiscal reforms fail to substantially reduce a nation's debt-to-GDP level.
Alberto Alesina and Silvia Ardagna, "Large Changes in Fiscal Policy: Taxes versus Spending," NBER Working Paper 15438, *National Bureau of Economic Research*, October 2009, http://www.nber.org/papers/w15438.
Biggs and his colleagues find an 80 percent failure rate.
Biggs, Hassett, and Jensen, "Guide for Deficit Reduction."

the military-industrial complex, and their fiscal adjustments tend to preserve too many of the old privileges. As a result, failed fiscal consolidations are more the rule than the exception.

Finally, cutting spending is often perceived as a sure way for lawmakers to lose their next election, but the data does not confirm this fear. A 2010 paper by Ben Broadbent published in the *Goldman Sachs Global Economics Outlook*, for instance, shows that spending cuts can actually be politically beneficial.[13] More recently, Alesina, Dorian Carloni, and Giampaolo Lecce looked at this issue and found "no evidence that governments which quickly reduce budget deficits are systematically voted out of office."[14] A paper by Ami Brender and Allan Drazen more generally shows that increasing deficits before an election has a (mildly) negative consequence on the chance of reelection of the incumbent.[15]

Can these positive election results be entirely driven by the popularity of the government implementing the adjustment? In other words, maybe only popular governments can cut spending without electoral risk. The paper finds that this is probably not the case. However, the authors acknowledge that this assumption is hard to test and so advise caution.

Fiscal Adjustments and Economic Growth

While there is little debate that sound fiscal balance and restraints in the burden of spending have a positive impact on GDP in the long run, the question of whether, in the short term, budget cuts shrink or grow GDP is far from being settled.[16] This is an especially important question for countries whose spending as a share of GDP is close to or above 50 percent. A few uncontroversial points have emerged, however, despite the differences in approaches and in definitions of successful or expansionary episodes.[17]

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[13] Ben Broadbent, "Fiscal Tightening Need Not Be Electorally Costly, but It Will Test Government Unity," *Goldman Sachs Global Economics Outlook*, May 13, 2010.

[14] Alberto Alesina, Dorian Carloni, and Giampaolo Lecce, "The Electoral Consequences of Large Fiscal Adjustments," in *Fiscal Policy after the Financial Crisis*, Alberto Alesina and Francesco Giavazzi, editors, (National Bureau of Economic Research and the University of Chicago Press, June 2013), http://www.nber.org/chapters/c12654.pdf.

[15] Adi Brender and Allan Drazen, "Political Implications of Fiscal Performance in OECD Countries," *Bank of Italy*, March 30, 2006, https://www.bancaditalia.it/studiricerche/convegni/atti/fiscal_ind/Role/2.pdf

[16] On the long-run benefits of modest government spending, see
Matt Mitchel, "Why This Isn't a Time to Worry That the Government Is Spending Too Little," *Neighborhood Effects* (blog), June 30, 2010, http://neighborhoodeffects.mercatus.org/2010/06/30/why-this-isnt-a-time-to-worry-that-government-is-spending-too-little/ (accessed October 17, 2013). See also
Andreas Bergh and Magnus Henrekson, "Government Size and Growth: A Survey and Interpretation of the Evidence," IFN Working Paper 858, *Institutet för Näringslivsforskning*, April 14, 2011, http://www.ifn.se/wfiles/wp/wp858.pdf (accessed October 17, 2013)

[17] Alesina and Ardagna's 2012 paper gives a detailed look at recent controversies by performing a host of sensitivity tests, changing definitions, and exploring alternative approaches. They try to clarify the differences between the methodologies and empirical results. Their paper also brings other variables that sometimes accompany fiscal adjustments into the discussion, thus expanding the analysis to include the effects of a vast set of policies that constitute the "package" accompanying the fiscal cuts. By considering many alternative definitions of fiscal

First, expansionary fiscal adjustments are not impossible. There is now a long trail of academic papers that have studied and documented the impact of fiscal adjustments on economic growth. The first in the series was by Francesco Giavazzi and Marco Pagano in 1990.[18] It was followed by a large literature, which was reviewed in depth by Alesina and Ardagna in 2010.[19] However, today the question is not whether expansionary fiscal adjustments are possible, but whether in the current circumstances it is possible to design fiscal adjustments with as little cost as possible to the economy, given that monetary conditions allow little additional help. It is perfectly possible that fiscal adjustment today might be on average more costly than in the past, but this does not mean that the medicine is not necessary.

Second, while not all fiscal adjustments lead to economic expansion, spending-based adjustments are less recessionary than those achieved through tax increases.[20] When successful spending-based adjustments were not expansionary, they were associated with mild and short-lived recessions, while tax increases were unsuccessful at reducing the debt and associated with large recessions.[21] These findings hold even when using the IMF definitions of fiscal adjustments.[22]

In fact, these findings are consistent with IMF studies themselves.[23] For instance, IMF economists Jaime Guajardo, Daniel Leigh, and Andrea Pescatori studied 173 fiscal consolidations in rich countries and found that "nations that mostly raised taxes suffered about twice as much as nations that mostly cut spending."[24] IMF researchers, however, downplay this result and incorrectly attribute it—as shown by Alesina, Favero, and Giavazzi—to different reactions of monetary policy to different types of fiscal adjustments.

Third, successful and expansionary fiscal adjustments are those based mostly on spending cuts rather than tax increases.[25] Also, these adjustments lasted slightly longer and were associated with higher growth during the adjustment. Using data from 21 Organisation for Economic Co-

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adjustments, they are able to do robustness checks on their previous results.
Alesina and Ardagna, "Design of Fiscal Adjustments."

[18] Francesco Giavazzi and Marco Pagano, "Can Severe Fiscal Contractions Be Expansionary? Tales of Two Small European Countries," *NBER Macroeconomics Annual* (MIT Press, 1990): 95–122, http://www.nber.org/papers/w3372.

[19] Alesina and Ardagna, "Large Changes in Fiscal Policy."

[20] For another good summary of the IMF findings on this issue, see
Garett Jones, "Which Hurts More in the Long Run, Tax Hikes or Spending Cuts?" *Econlog* (blog), November 14, 2012, http://econlog.econlib.org/archives/2012/11/which_hurts_mor.html (accessed October 17, 2013).

[21] Alesina, Favero, and Giavazzi, "Output Effect of Fiscal Consolidations" (see n. 11).

[22] Alesina and Ardagna, "The Design of Fiscal Adjustments";
Alesina, Favero, and Giavazzi, "Output Effect of Fiscal Consolidations."

[23] Pete Devries et al., "An Action-Based Analysis of Fiscal Consolidation in OECD Countries," Working Paper 11/128, *International Monetary Fund*, June 1 2011, http://www.imf.org/external/pubs/cat/longres.aspx?sk=24892.0.

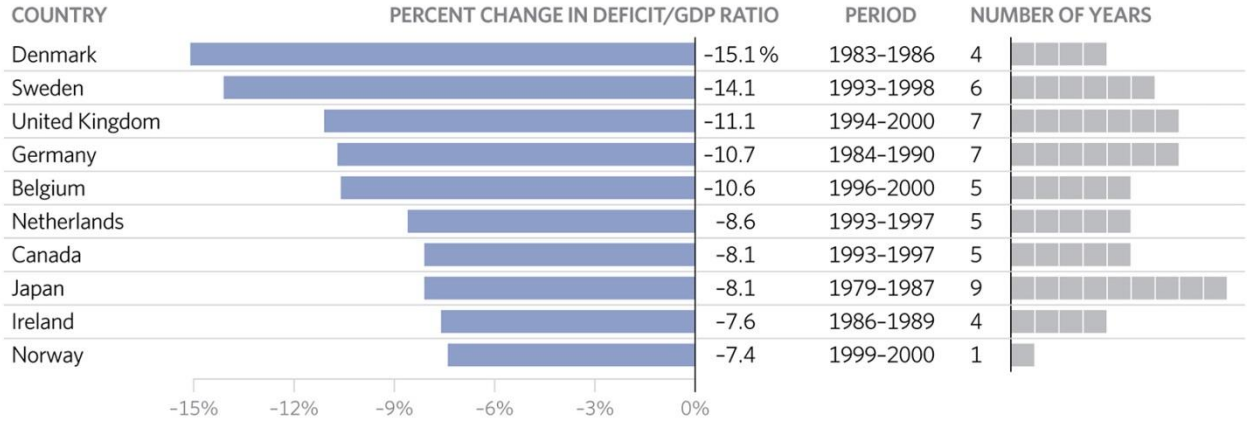
[24] Jaime Guajardo, Daniel Leigh, and Andrea Pescatori, "Expansionary Austerity New International Evidence," Working Paper No. 11/158, *International Monetary Fund*, July 1, 2011, http://www.imf.org/external/pubs/cat/longres.aspx?sk=25021.0.

[25] Alesina, Favero, and Giavazzi, "Output Effect of Fiscal Consolidations";
Alesina and Ardagna, "Design of Fiscal Adjustments."

operation and Development (OECD) countries from 1970 to 2010, Alesina and Ardagna find that successful fiscal adjustments on average reduced debt-to-GDP ratio by 0.19 percentage point of GDP in a given year. GDP grew by 3.47 percentage points in total, which is 0.58 percentage point higher than the average growth of G7 countries. Successful adjustments lasted for three years on average.[26]

CHART 1–1

10 Largest Episodes of Successful Fiscal Adjustments



Source: Authors' calculations based on data from Alberto Alesina and Silvia Ardagna, "The Design of Fiscal Adjustments," National Bureau of Economic Research, *Working Paper* No. 18423, http://www.nber.org/papers/w18423.pdf (accessed October 18, 2013), subscription only.

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How can we explain the fact that spending-based adjustments can result in lower or no output costs for the economy than tax-based ones? IMF economists Prakash Kannan, Alasdair Scott, and Marco Terrones argue that this difference in outcomes is not the result of the composition of the fiscal adjustment packages, but rather a result of the business cycle having picked up because of other forms of government interventions, such as expansionary monetary policy.[27] However, Alesina, Favero, and Giavazzi's work shows that taking the business cycle and monetary policy into account does not change the main finding.[28]

If the difference between tax-based and spending-based fiscal adjustments is not the result of the business cycle or monetary policy, what explains it? The standard explanation is that lower

[26] Alesina and Ardagna's data indicate that successful fiscal adjustment episodes comprised of 72 percent in spending cuts and 28 percent in tax increases, resulting in an average spending reduction of 4.18 percentage points of GDP and a 1.64 percentage point tax increase. However, even using the IMF definition, the authors find that successful fiscal adjustment comprised 67 percent in spending cuts and 33 percent in tax increases, resulting in an average spending reduction of 3.89 percentage points of GDP and a 1.6 percentage point tax increase. Alesina and Ardagna, "Design of Fiscal Adjustments."

[27] Prakash Kannan, Alasdair Scott, and Marco Terrones, "From Recession to Recovery: How Soon and How Strong," *International Monetary Fund,* http://www.imf.org/external/np/seminars/eng/2012/fincrises/pdf/ch8.pdf

[28] See Alesina, Favero, and Giavazzi, "Output Effect of Fiscal Consolidations." See also Alesina and Ardagna, "Design of Fiscal Adjustments," and Alberto Alesina and Francesco Giavazzi (eds.), "Fiscal Policy after the Great Depression," University of Chicago Press and National Bureau of Economic Research forthcoming.

spending reduces the expectation of higher taxes in the future, with positive effects on consumers and investors. In particular, there might be a boost in the confidence of the latter—as Alesina, Favero, and Giavazzi have shown. But there is more. As is often the case, the devil is in the details. Studies by Alesina and Ardagna and by Roberto Perotti have noted that fiscal adjustments are detailed, multiyear policy packages.[29] Austerity measures are often undertaken at the same time that other growth-enhancing policy changes are made, and, as such, there is much to learn by looking into the details of each successful episode.

One important lesson is that several accompanying policies can moderate the contractionary effects of fiscal adjustments on the economy and enhance their chances of success.[30] For instance, spending-based fiscal adjustment accompanied by supply-side reforms, such as liberalization of markets for labor, goods, and services, readjustments of public sector size and pay, public pension reform, and other structural changes tend to be less recessionary or even to have positive economic growth.[31]

Such reforms signal a credible commitment toward more market-friendly policies: less taxation, fewer impediments to trade, fewer barriers to entry, less union involvement, less labor market and business regulation. And, of course, with enhanced economic freedom, unit labor costs become cheaper and productivity improves, making an expansionary fiscal adjustment more likely than a contractionary one.

Germany's fiscal adjustment of 2004 to 2007 provides a good example.[32] First, the country implemented a stimulus by reducing income-tax rates. This reduction was part of a series of supply-side-oriented reforms implemented between 1999 to 2005, including a wide-ranging overhaul of the income-tax system that was meant to boost potential growth but did not have much effect until 2004. In addition, significant structural reforms to tackle rigidity in the labor market were put in place, as well as changes to the pension system due to demographic pressures. These reforms included "an increase in the statutory retirement age, the elimination of early retirement clauses, and tighter rules for calculating imputed pension contributions."[33] Finally, Germany adopted large expenditure cuts in the fringe benefits in public administration

[29] Alberto Alesina and Silvia Ardagna, "Tales of Fiscal Adjustments," *Economic Policy* Vol. 13 No.27, (October 1998), http://dash.harvard.edu/bitstream/handle/1/2579822/Ardagna_TalesFiscal.pdf?sequence=2;
Roberto Perotti, "The 'Austerity Myth': Gain Without Pain?" Working Paper 17571, *National Bureau of Economic Research*, November 2011, http://www.nber.org/papers/w17571.
[30] Perotti, "Austerity Myth."
[31] See Alesina and Ardagna, "Design of Fiscal Adjustments"; the case studies by Alesina and Ardagna, "Tales of Fiscal Adjustments"; and Perotti, "Austerity Myth." For specific statistics on average changes to goods regulation, barriers to entry, public ownership, employment protection, union density, etc., see tables 17, 18, and 7b in Alesina and Ardagna, "Design of Fiscal Adjustments."
[32] Christina Breuer, Jan Gottschalk, and Anna Ivanova, "Germany: Fiscal Adjustment Attempts with and without Reforms," *Chipping Away at Public Debt: Sources of Failure and Keys to Success in Fiscal Adjustment*, ed. Paolo Mauro (Hoboken, NJ: John Wiley & Sons, 2011), 85–115.
[33] Ibid., 107.

(no more Christmas-related extra payments) and also serious reductions in subsidies for specific industries: residential construction, coal mining, and agriculture.[34]

Sweden is another example of successful adjustment. The data show that after the recession, Sweden's finance minister, Anders Borg, not only successfully implemented reduction in welfare spending but also pursued economic stimulus through a permanent reduction in the country's taxes, including a 20-point reduction to the top marginal income tax rate. At the same time, Sweden also benefited from a very aggressive monetary policy followed by strong export revenues and firm domestic demand. As a result, the country's economy is now the fastest growing in Europe, with real GDP growth of 5.6 percent, which has helped the country to rapidly shrink its debt as a percentage of GDP over the past decade.[35]

The Swedish example raises the question of what role monetary policy can play in successful fiscal adjustments. For instance, there is some evidence that exchange rate devaluation (induced by an accommodating monetary policy) can help to boost a country's exports as the country becomes more competitive and, as a result, can compensate for a previous slowdown in domestic demand.[36]

Economist Scott Sumner has made the case that the best way to get austerity and growth at the same time is to increase "[nominal] GDP and budget surpluses—the Swedish way."[37] To be sure, monetary policy in Europe—or in the United States, for that matter—could increase the effectiveness of spending cuts and structural reforms (a little like the water you drink to help the medicine go down). But it is mistake to oversell it, and it certainly will not achieve our long-term goals without serious reductions in government spending. In particular, the devaluation of a country's currency is neither a necessary nor sufficient condition for success, as shown by Alesina and Ardagna.[38]

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[34] The German consolidation also responded quickly to unanticipated challenges arising from the reforms. For instance, the government responded to the higher-than-expected cost of labor-market reforms by raising the Value Added Tax (VAT) rate, with part of the VAT collection going toward financing a reduction in the overall tax burden through a cut in unemployment contribution rates.

[35] IMF's Fiscal Monitor, "Lessons from Sweden," *Taking Stock: A Progress Report on Fiscal Adjustment*, October 2012), http://www.imf.org/external/pubs/ft/fm/2012/02/pdf/fm1202.pdf. The data mentioned come from the Organisation for Economic Co-operation and Development Stat Extracts, October 2012, http://stats.oecd.org/. See also Veronique de Rugy, "GDP Growth Rates: The Swedish Approach," *Mercatus Center at George Mason University*, May 16, 2012, http://mercatus.org/publication/gdp-growth-rates-swedish-approach (accessed October 17, 2013).

[36] Alesina and Ardagna, "The Design of Fiscal Adjustments." Also, the current devaluation debate surrounding G20 "currency war" has been a prime example. See Jan Strupczewski, "G20 Currency Promises Unlikely to End Devaluation Debate," *Financial Post*, February 18, 2013, http://business.financialpost.com/2013/02/18/g20-currency-war-promises-unlikely-to-end-devaluation-debate/ (accessed October 17, 2013).

[37] Scott Sumner, "Austerity and Stimulus in Northern Europe," *The Money Illusion*, May 17, 2012, http://www.themoneyillusion.com/?p=14381 (accessed October 17, 2013).

[38] Alesina and Ardagna, "The Design of Fiscal Adjustments."

There is growing evidence, however, that private investment tends to react more positively to spending-based adjustments. The data from Alesina and Ardagna and Alesina, Favero, and Giavazzi, for instance, show that private-sector capital accumulation increases after governments cut spending, which compensates for the reduction in aggregate demand due to the fiscal adjustments.[39]

The good news is that it is possible to design a fiscal adjustment that could both reduce the deficit and have a minimal or even in some cases positive impact on the economy. It requires austerity mostly based on spending cuts. This can be done without hurting the least advantaged in society. As Alesina wrote in November 2012, "But if we cut spending, do we necessarily hurt the poor? Not in such countries as Greece, Portugal, Spain, and Italy, whose public sectors are so inefficient and wasteful that they can certainly spend less without affecting basic services. Even in countries with better-functioning public sectors—such as France, where public spending is nearly 60 percent of GDP—there's a lot of room to economize without hurting the poorest and most vulnerable. And even in America, public spending is about 43 percent of GDP, a level common in Europe not long ago, and up from 34 percent in 2000."[40]

In other words, Western governments can save money and avoid inflicting injury on lower-income earners or the poor by improving the way welfare programs are targeted; scaling back programs such as Medicare that use taxes raised in part from the middle class to give public services right back to the middle class; and gradually raising the retirement age to 70. The same is true of Social Security. What is more, lots of savings could be achieved by cutting subsidies going to businesses—which are often large, well-established, and politically connected firms, such as gas and oil companies, farms, automobile manufacturers, or banks.[41]

Conclusion

There is a lot that economists disagree about when it comes to fiscal policy. However, a consensus seems to have emerged recently that spending-based fiscal adjustments are not only more likely to reduce the debt-to-GDP ratio than tax-based ones but also less likely to trigger a recession. In fact, if accompanied by the right type of policies (especially changes to public employees' pay and public pension reforms), spending-based adjustments can actually be associated with economic growth. See the bibliographical annex to this chapter for a lengthy reading list on fiscal consolidation. As Salim Furth shows in Chapter 4 of this report, the early data from the most recent round of fiscal consolidation tend to confirm that tax-based austerity is the most harmful to growth.

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[39] Ibid.

[40] Alberto Alesina, "The Kindest Cuts," *City Journal*, Autumn 2012, http://www.city-journal.org/2012/22_4_spending-cuts.html (accessed October 17, 2013).

[41] Matthew Mitchell, "The Pathology of Privilege: The Economic Consequences of Government Favoritism," *Mercatus Research*, July 8, 2012, http://mercatus.org/publication/pathology-privilege-economic-consequences-government-favoritism.

However, it is important to refrain from over-simplifying these results since fiscal adjustment packages are often complex and multiyear affairs. Also, many of the successful (i.e., expansionary and debt-to-GDP-reducing) fiscal adjustments in this literature are ones where the growth is export-led during times when the rest of the global economy is healthy or even booming. While there has been some recovery in the midst of the recession, we should recognize that it may be much harder today to achieve export-led growth when many countries are struggling.

While austerity based on spending cuts can be costly, the cost of well-designed adjustments plans will be low. Besides, it is not clear that the alternative to reducing spending is more economic growth. In fact, the alternative for certain countries could be a very messy debt crisis.

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Chapter 2: Measuring Austerity and Stimulus

Salim Furth, PhD

There is a temptation to lump all of the economies and policies of Europe together. *The Progressive* trumpeted electoral results in Greece and France as "the beginning of the end of the age of austerity."[42] *The Observer* generalized, "Across Europe other governments, scared by the Greek debt crisis…have been doing the same [as Germany], raising the spectre of mass layoffs in public services in the name of European unity."[43] *The Washington Post*'s Robert Samuelson wrote, "We have entered the Age of Austerity. It's already arrived in Europe and is destined for the United States. Governments throughout Europe are cutting social spending and raising taxes—or contemplating doing so."[44] The formulaic "Age of Austerity" is a convenient crutch, but it obscures important differences in the existence, type, degree, and impetus of fiscal consolidation across countries. One can learn more by studying the differences than by averaging across them.

As shown by Alesina and de Rugy in Chapter 1, tax increases have large and well-documented negative effects on growth. The data from Europe indicate that governments planned tax cuts and (subsequently) tax increases, but in fact more consistently enacted the tax increases. Conversely, although spending cuts are clearly more successful than tax increases at deficit reduction, spending increases outnumbered and outweighed spending cuts in most countries.

For the purposes of this chapter, the terms "stimulus" and "fiscal expansion" are interchangeable, denoting a policy-induced increase in government expenditure or decrease in taxation. The vague term "austerity" can include spending cuts, tax increases, and some structural reforms. This chapter generally focuses on spending cuts and tax increases, for which it uses the more precise term "fiscal consolidation."

If one looks only at averages, the 2007–2010 time period was one of Keynesian stimulus: extra government spending and tax breaks everywhere. But six of 29 countries actually planned spending cuts and six planned tax increases, the opposite of Keynesian stimulus. Even among countries with net stimulus, the plans ranged in magnitude from 0.5 percent of GDP to 6.1 percent of GDP.[45]

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[42]Matthew Rothschild, "Ending the Age of Austerity," *The Progressive*, May 7, 2012, http://progressive.org/ending_the_age_of_austerity_in_europe.html (accessed August 22, 2013).
[43]Toby Helm, Ian Traynor, and Paul Harris, "Europe Embraces the Cult of Austerity—But at What Cost?" *The Observer*, June 12, 2010, http://www.theguardian.com/business/2010/jun/13/europe-embraces-cult-of-austerity (accessed August 22, 2013).
[44]Robert J. Samuelson, "The Age of Austerity," *The Washington Post*, October 11, 2010, http://www.washingtonpost.com/wp-dyn/content/article/2010/10/10/AR2010101003049.html (accessed August 22, 2013).
[45]OECD, *Economic Outlook*, Volume 2009/1, No. 85, June 2009, Appendix 1.A1, http://dx.doi.org/10.1787/eco_outlook-v2009-1-en. I augment the OECD list with three countries from Fischer and Justo, "Government Fiscal and Real Economy Responses to the Crises: Automatic Stabilisers versus Automatic

In the "Age of Austerity" since 2010, there has been even less uniformity. Out of 28 countries with IMF data on fiscal adjustment, six actually engaged in fiscal expansion, and eight more had fiscal consolidation of less than two percent of GDP.[46] Greece's well-known fiscal consolidation was an outlier, twice as great as second-place Portugal's. Paul Krugman is not exaggerating that "Greece was a very special case, holding few if any lessons for wider economic policy."[47]

Economists believe that higher tax rates result in lower growth and that government spending results in temporary GDP growth, although it will crowd out the private sector in the long run.[48] In crises like the recent ones, the causal relationships can run in the opposite direction, too: straitened governments are forced into fiscal consolidation.

Thus, it is no surprise that GDP growth from 2007 to 2012 is positively correlated with spending and negatively correlated with the revenue rate over the same period.[49] These correlations remain even after limiting consideration to countries that had positive GDP growth. One would thus reasonably expect that spending and tax rates are negatively correlated: In a crisis, the story goes, a country is either Keynesian or austere. Much of the public narrative is built around this assumed taxonomy.

Instead, taxes and spending are *positively* correlated (0.28) across countries. While there are examples of Keynesian and austere countries, these are the exceptions, not the rule. Chart 2-1 shows that every combination of fiscal policies has been tried and that the most common combination has been rising taxes and rising core spending.

Countries Included:
Australia
Austria
Belgium
Bulgaria
Canada
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Japan
Korea
Latvia
Lithuania
Luxembourg
Malta
Netherlands
New Zealand
Norway
Poland
Portugal
Romania
Slovakia
Slovenia
Spain
Sweden
Switzerland
United Kingdom
United States

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[46]International Monetary Fund, "Taking Stock: A Progress Report on Fiscal Adjustment," Fiscal Monitor, October 2012, Figure 15, p. 21, http://www.imf.org/external/pubs/ft/fm/2012/02/pdf/fm1202.pdf (accessed October 11, 2013). Underlying data can be downloaded at http://www.imf.org/external/pubs/ft/fm/2012/02/data/fmdata.xlsx (accessed September 20, 2013).

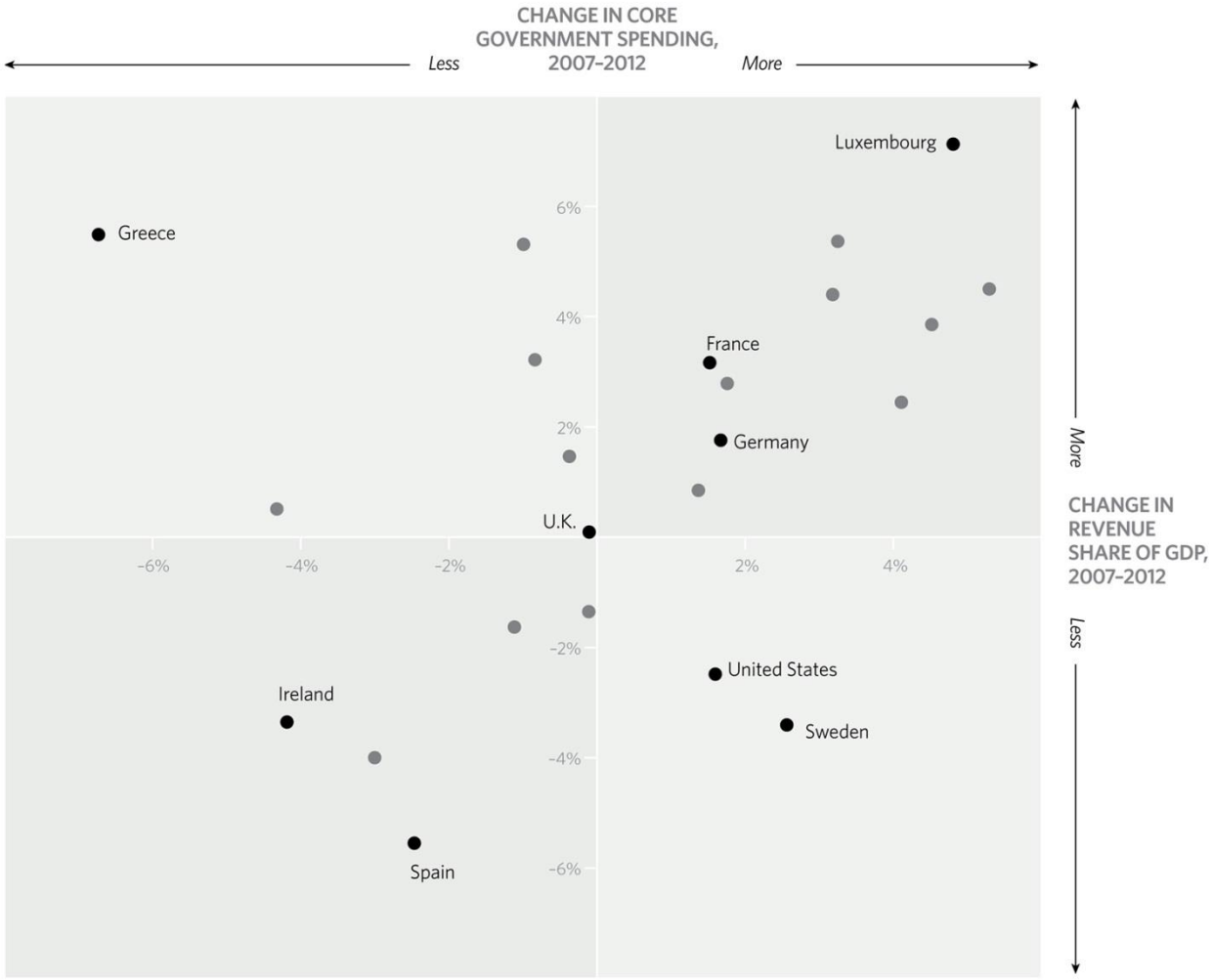
[47]Paul Krugman, "Detroit, the New Greece," *The New York Times*, July 21, 2013, http://www.nytimes.com/2013/07/22/opinion/krugman-detroit-the-new-greece.html (accessed August 22, 2013).

[48]See, for example, John Taylor and Akila Weerapana, *Principles of Macroeconomics, 7th Edition* (South-Western Cengage Learning: 2012), chapter 5.

[49]Growth ends in 2011 where 2012 data was unavailable.

CHART 2–1

Growth of Spending and Revenues Since 2007



Notes: 2011 figures are used for countries lacking 2012 data. Chart includes only countries in which GDP fell from 2007 to 2009.
Sources: OECD, Statistics OECD, Annual National Accounts, Table 12, "Government Deficit/Surplus, Revenue, Expenditures, and Main Aggregates, 2009–2012," http://stats.oecd.org (accessed September 1, 2013), and author's calculations.

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Data Compendium

It is surprisingly difficult to measure fiscal policy. Simple metrics like government expenditure, average tax rate, or budget deficit are fraught with problems. Those metrics and others can rise and fall based on a variety of factors, including but not limited to changes in government policy. In order to allow for further analysis of austerity or stimulus, this report is accompanied by an online data compendium which compiles data from a variety of sources.

No single data series is infallible, perfectly measured, or purely or exhaustively reflective of fiscal policy. The body of evidence should be considered as a whole, and questions come up

when series diverge sharply. Conversely, when a variety of metrics tell the same story, one can have greater confidence in each metric.

The data compendium draws on two types of sources: publicly available data published by international organizations and data or estimates reported on an ad hoc basis by various economists or organizations. The data include 37 countries in Europe and the developed world, although few series cover all 37 countries.

Choosing from a wide selection of publicly available data, the compendium primarily uses Organisation for Economic Co-operation and Development (OECD) series on government financing, as well as IMF data on structural balance and data on the interest rates at which governments borrow from multiple sources.

Ad hoc data series include several estimates of planned stimulus over the 2008–2010 time frame, the IMF's data on discretionary fiscal consolidation after 2009, and estimates of fiscal sustainability. The compendium also includes two key tax rates.

Specific details about each source and series are included with the compendium. This chapter discusses the data thematically and descriptively.

Recessions

As Matthew Melchiorre emphasizes in Chapter 3 of this report, the timing of crises differed substantially across countries. Even the global "Great Recession" was more diffuse than many believe. In this section and elsewhere, GDP was used as the key indicator of economic growth. Of course, GDP is only one of many indicators, and increases in GDP that occur without increasing consumption, investment, median income, and employment may not reflect actual "economic growth."

As Table 2-1 demonstrates, the beginning of the global recession rolled through the developed world from 2007 to 2009. By the time Greek GDP began to fall, France and Germany were just a few months from recovery. The length and depth of the recovery differed widely across countries, and the post-recession experience differed even more.

TABLE 2–1

Change in Quarterly GDP

GDP decline | Largest 1-quarter GDP decline, 2007–2013

	2007				2008				2009				2010				2011				2012				2013	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Australia	1.7	0.8	0.8	0.6	1.2	0.3	0.7	-0.7	0.9	0.0	0.7	0.9	0.5	0.7	0.7	0.9	-0.5	1.2	1.2	0.6	1.3	0.5	0.8	0.7	0.5	0.6
Austria	1.0	0.5	0.4	1.0	1.0	-0.1	-1.2	-1.8	-1.5	-0.5	0.7	0.5	-0.1	0.6	1.3	1.1	0.9	0.5	-0.1	0.0	0.4	0.2	0.1	-0.1	0.1	0.1
Belgium	0.9	0.3	0.7	0.5	0.7	0.3	-0.5	-2.1	-1.8	0.0	1.1	0.7	0.1	1.0	0.6	0.5	0.8	0.2	0.0	0.0	0.1	-0.4	0.0	-0.1	0.0	0.2
Bulgaria	1.5	1.8	1.3	2.1	1.7	1.2	1.1	0.2	-6.0	0.0	0.3	-2.8	0.6	1.4	0.8	0.6	0.3	0.5	0.2	0.1	0.3	0.1	0.1	0.1	0.1	-0.1
Canada	0.6	0.8	0.6	0.3	0.0	0.5	0.7	-1.1	-2.2	-0.9	0.5	1.3	1.4	0.7	0.5	1.1	0.5	-0.2	1.5	0.5	0.2	0.4	0.2	0.2	0.5	0.4
Cyprus	1.8	1.2	1.2	1.4	0.9	0.8	0.3	0.1	-1.0	-1.3	-0.5	-0.1	1.3	0.1	1.0	0.2	0.4	0.1	-1.0	-0.2	-0.3	-1.0	-0.8	-1.5	-1.7	-1.8
Czech Republic	2.3	0.0	1.6	1.5	0.4	1.2	0.1	-1.7	-3.4	-0.6	0.4	0.6	0.5	1.1	0.6	0.6	0.7	0.2	0.0	-0.2	-0.5	-0.5	-0.3	-0.3	-1.3	0.6
Denmark	0.9	-0.5	0.8	1.0	-1.4	1.5	-1.8	-2.4	-2.2	-1.8	0.4	-0.2	0.2	1.5	1.6	-0.6	0.3	0.4	-0.4	-0.1	0.1	-0.8	0.8	-0.6	-0.2	0.6
Estonia	3.6	0.1	1.0	0.1	-2.8	1.1	-0.6	-9.7	-4.0	-2.9	-2.6	0.9	0.3	2.2	2.6	2.9	3.2	2.2	1.0	-0.2	2.3	-0.1	1.3	0.5	-0.1	-0.2
Finland	1.8	1.7	0.5	1.4	-0.2	-0.6	-0.3	-2.6	-6.3	-0.8	1.2	-0.6	0.4	3.3	-0.1	1.8	0.0	0.4	0.7	-0.2	0.4	-1.5	-0.3	-0.8	-0.2	0.2
France	0.7	0.5	0.4	0.2	0.4	-0.7	-0.4	-1.6	-1.7	0.0	0.1	0.7	0.3	0.6	0.5	0.5	1.1	-0.1	0.2	0.2	0.0	-0.3	0.2	-0.2	-0.1	0.5
Germany	0.6	0.6	0.8	0.4	1.0	-0.4	-0.5	-2.0	-4.1	0.2	0.7	1.0	0.5	2.0	0.8	0.8	1.5	0.1	0.4	0.1	0.7	-0.1	0.2	-0.5	0.0	0.7
Greece	2.1	0.6	0.8	0.1	0.1	0.5	0.3	-0.8	-1.1	-1.0	-0.6	0.7	-1.9	-1.3	-1.6	-2.8	0.2	—	—	—	—	—	—	—	—	—
Hungary	-0.9	-0.3	0.2	0.7	1.4	-0.1	-0.9	-2.5	-3.4	-1.1	-0.7	0.4	1.0	0.5	0.4	0.3	1.1	-0.1	0.0	0.3	-1.5	-0.5	0.0	-0.5	0.6	0.1
Iceland	0.5	5.3	2.2	-0.4	-0.4	-1.1	0.8	-0.3	-5.4	0.4	-2.5	-0.9	-2.4	-1.3	0.8	2.7	0.7	-1.7	2.2	0.5	3.0	-6.0	4.1	0.3	4.4	-6.5
Ireland	5.1	-1.6	-1.1	3.6	-1.5	-1.5	-0.5	-3.7	-1.2	-1.5	-1.1	-1.1	0.8	-0.4	1.1	-1.3	1.5	1.4	0.3	0.3	-0.5	0.5	-0.8	-0.2	-0.6	0.4
Israel	2.3	1.9	1.6	1.5	1.6	1.0	0.7	-0.1	-0.3	0.6	0.7	0.8	0.9	1.1	0.8	1.6	1.3	1.0	1.0	1.0	0.7	0.7	1.0	0.8	0.7	1.2
Italy	0.1	0.1	0.4	-0.5	0.5	-0.6	-1.3	-1.6	-3.5	-0.3	0.4	-0.1	0.9	0.6	0.5	0.3	0.1	0.2	-0.1	-0.7	-1.1	-0.6	-0.4	-0.9	-0.6	-0.3
Japan	1.0	0.1	-0.4	0.8	0.7	-1.2	-1.0	-3.3	-4.0	1.6	0.1	1.8	1.4	0.9	1.5	-0.3	-2.0	-0.9	2.6	0.4	1.2	-0.3	-0.9	0.3	1.0	0.9
Latvia	3.0	2.6	0.2	0.3	0.3	-0.8	-5.8	-2.4	-9.4	-1.0	-7.2	1.2	1.3	-0.4	0.0	1.7	1.2	2.6	1.0	0.4	0.6	2.1	1.8	0.8	1.8	0.1
Lithuania	2.4	2.4	2.6	1.6	-0.3	0.8	-1.1	-0.7	-13.1	-1.2	0.4	-0.9	0.7	1.1	0.6	2.3	2.0	1.5	0.8	1.1	0.4	0.6	1.7	0.7	1.1	0.7
Luxembourg	1.5	1.9	1.1	-1.0	1.4	-0.4	-1.1	-6.4	0.7	-0.1	2.2	-0.7	0.5	1.3	1.4	0.5	0.2	-0.3	0.6	0.2	-1.0	0.6	-0.2	2.2	-1.6	—
Malta	2.9	-0.8	1.3	0.7	1.4	1.8	1.0	-1.8	-3.7	0.6	0.7	2.1	0.8	0.2	1.1	2.0	-0.1	-0.6	0.1	0.1	-0.2	1.0	0.6	0.2	0.1	0.7
Netherlands	1.4	0.6	1.3	1.3	0.6	-0.4	0.0	-1.2	-2.1	-1.4	0.8	0.4	0.5	0.3	0.1	1.0	0.6	-0.2	-0.3	-0.7	-0.3	0.4	-0.9	-0.6	-0.4	-0.1
New Zealand	1.2	0.8	0.6	0.1	-0.4	-1.0	-0.2	-0.6	-1.1	-0.3	0.6	1.6	0.1	0.8	-0.3	-0.4	0.7	0.6	0.8	0.3	1.0	0.4	0.3	1.6	0.4	0.2
Norway	-0.2	0.1	1.6	1.2	-1.6	0.2	-0.4	0.1	-1.0	-0.8	0.3	0.4	1.2	-1.2	-1.6	2.2	-0.5	0.5	2.0	0.1	1.7	0.4	-0.5	0.2	-0.1	0.8
Poland	1.8	1.6	1.3	2.2	1.4	0.7	0.7	-0.4	0.4	0.5	0.5	1.4	0.7	1.1	1.3	0.8	1.3	1.4	0.8	1.0	0.3	0.0	0.4	0.1	0.2	0.4
Portugal	1.5	0.0	-0.1	1.0	0.0	-0.2	-0.5	-1.1	-2.4	0.3	0.7	0.0	1.0	0.6	0.1	-0.3	-0.6	-0.1	-0.5	-1.7	-0.1	-1.0	-0.8	-1.9	-0.4	1.1
Romania	1.1	1.1	0.8	3.4	3.4	1.8	0.4	-2.0	-5.7	-0.8	0.8	-0.3	-1.2	0.4	-0.6	1.3	0.7	-0.4	2.5	-0.9	-1.0	1.4	-0.5	1.0	0.4	0.5
Slovakia	2.0	2.5	2.4	6.1	-2.4	1.2	1.3	1.1	-8.5	1.3	1.4	1.4	0.9	0.9	0.9	0.7	0.8	0.8	0.7	1.0	0.4	0.3	0.2	0.1	0.2	0.3
Slovenia	1.6	1.4	2.3	0.3	1.4	1.2	-0.3	-3.9	-4.7	-1.0	0.1	-0.1	0.2	1.1	0.4	0.8	0.0	0.3	-0.3	-0.6	-0.5	-1.3	-0.4	-1.0	-0.5	-0.3
South Korea	1.4	1.5	1.1	1.7	0.9	0.4	0.1	-4.6	0.1	2.5	3.4	0.3	2.2	1.4	0.6	0.7	1.3	0.8	0.8	0.4	0.8	0.3	0.0	0.3	0.8	1.1
Spain	0.9	0.8	0.8	0.7	0.5	0.0	-0.8	-1.1	-1.7	-1.1	-0.3	-0.1	0.1	0.2	0.0	0.2	0.2	-0.1	-0.3	-0.4	-0.4	-0.5	-0.4	-0.8	-0.4	-0.1
Sweden	1.0	0.5	0.6	1.5	-1.2	-0.1	-0.1	-3.7	-2.6	0.2	-0.1	1.3	2.5	2.1	1.2	1.9	-0.2	0.6	1.2	-1.3	0.8	0.9	0.2	-0.2	0.3	-0.2
Switzerland	1.2	0.8	0.7	0.7	0.8	1.0	0.1	-2.2	-1.1	0.0	0.9	0.3	1.1	0.8	0.6	0.9	0.3	0.4	-0.2	0.2	0.5	0.0	0.7	0.3	0.6	0.5
United Kingdom	1.0	1.3	1.2	0.1	0.1	-0.9	-1.4	-2.1	-2.5	-0.4	0.0	0.4	0.5	1.0	0.4	-0.2	0.5	0.1	0.6	-0.1	0.0	-0.5	0.6	-0.3	0.4	0.7
United States	0.1	0.8	0.7	0.4	-0.7	0.5	-0.5	-2.2	-1.4	-0.1	0.3	1.0	0.4	1.0	0.7	0.7	-0.3	0.8	0.3	1.2	0.9	0.3	0.7	0.0	0.3	0.6

Note: Quarterly growth rates in this table are not annualized.
Sources: OECD, Statistics OECD, Quarterly National Accounts, 2007–2013, http://stats.oecd.org/ (accessed September 1, 2013), and Eurostat, Quarterly National Accounts, 2007–2013, http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/ (accessed September 1, 2013).

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A New Measure of Stimulus and Austerity

In order to overcome the gap between measures of stimulus and austerity, I developed a measurement of core government spending. Using OECD data,[50] I strip interest and transfer payments out of total government expenditure.[51] The result is very similar to the OECD's "Government Output" series for most countries. The most significant differences occur when capital transfers, such as bank bailouts, are large.

I report core government spending growth in terms of percent of base-year GDP. Thus, the change from 2009 to 2012 is calculated as (2012 core government spending)/(2009 GDP) – (2009 core government spending)/(2009 GDP).[52]

Core government spending peaked at different times. It peaked between 2009 and 2011 in about half the countries. In Estonia, Iceland, and Ireland, core spending peaked in 2008. Economies that are growing fast or engaged in little stimulus or little consolidation did not peak through the end of their respective data, in 2011 or 2012. Considering the entire 2007 to 2012 period, core spending grew in 18 countries and fell in 11 countries.

Another way to measure core spending is as a share of current GDP. However, that metric does not capture policy well: Even when spending is cut, its share of current GDP may rise if GDP is falling faster. Thus, core spending's share of GDP rose in 21 countries and fell in eight countries. In the U.S., core spending's share rose by 1.5 percent of GDP. In Estonia, core spending's share rose, then fell, and then rose again to result in 4.1 percent of GDP higher than in 2007.

Of the 11 countries that decreased core spending, eight were under pressure from high or rising interest rates.[53] In seven of the eight, average interest rate spread[54] in 2010 to 2012 was at least 1.5 percentage points higher than in 2004 to 2006, reflecting investor concerns about fiscal sustainability. One more country—Iceland—faced a high interest rate in both eras. The three countries that cut spending without direct pressure were the U.K., Japan, and the Czech Republic, and any of these could easily have faced bond market pressure if deficits had been

[50]Statistics OECD, Annual National Accounts, Table 12: Government deficit/surplus, revenue, expenditure and main aggregates, 1995-2012, http://stats.oecd.org/ (accessed May-September, 2013).
[51]The series can be duplicated by subtracting series GD41P, GD62_631XXP, GD7P, GD8P, and GD9P from series GTE.
[52]This measures changes in the level of government spending expressed as a share of the economy; it does not measure the change in the share in the economy of government spending.
[53] European Central Bank, Statistical Data Warehouse, 11.15 Harmonised long-term interest rates for convergence assessment purposes, 2004-2013, http://sdw.ecb.europa.eu/browse.do?node=bbn3146 (accessed October 17, 2013) and OECD, *Economic Outlook*, Volume 2013/1, No. 93, June 2013, Annex Table 35, http://www.oecd-ilibrary.org/economics/oecd-economic-outlook-volume-2013-issue-1_eco_outlook-v2013-1-en (accessed October 11, 2013).
[54]The spread here is the difference between a country's 10-year borrowing rate and Germany's 10-year borrowing rate.

higher.[55] All seven countries whose interest rate spread rose more than 1.5 percentage points cut spending.

The exclusion of transfer spending implies that this measure does not capture the full magnitude of changes in government expenditure, and may be deceptive if the composition of government spending shifts toward or away from transfers. Certainly, discretionary changes do take place in government transfers, but automatic stabilization also plays a large role in transfer spending, so it is difficult to identify transfer-based policy changes. The OECD Economic Outlook shows a median of 44 percent of stimulus spending was in transfers to households and businesses.[56] Oh and Reis show that most of the change in U.S. government spending from 2007 to 2009 took place via transfers, but the increase in transfers was at least half non-discretionary.[57] In the Fiscal Monitor, cuts to "social and other benefits" are on average about half of all non-interest spending cuts from 2009 to 2012.[58] Core government spending represents a highly discretionary subset of all government expenditure, and abstracts from the difficult question of how to identify and measure discretionary changes to transfer programs.

Measuring Stimulus

Various measurements of fiscal stimulus in the developed world are complex, and sometimes contradictory. The author was unable to find a single measure of stimulus that included and distinguished between tax and spending policies. During the midst of the crisis, the EU and OECD both compiled planned stimulus packages. However, the latest versions appear to be from December 2008 and June 2009, respectively.

The EU stimulus plans were incorporated in the European Economic Recovery Plan, which is detailed for the 16 Eurozone countries by Fischer and Justo and covers 2009 and 2010.[59] The OECD data and projections are from *Economic Outlook #85* and covers 2008, 2009, and 2010.[60]

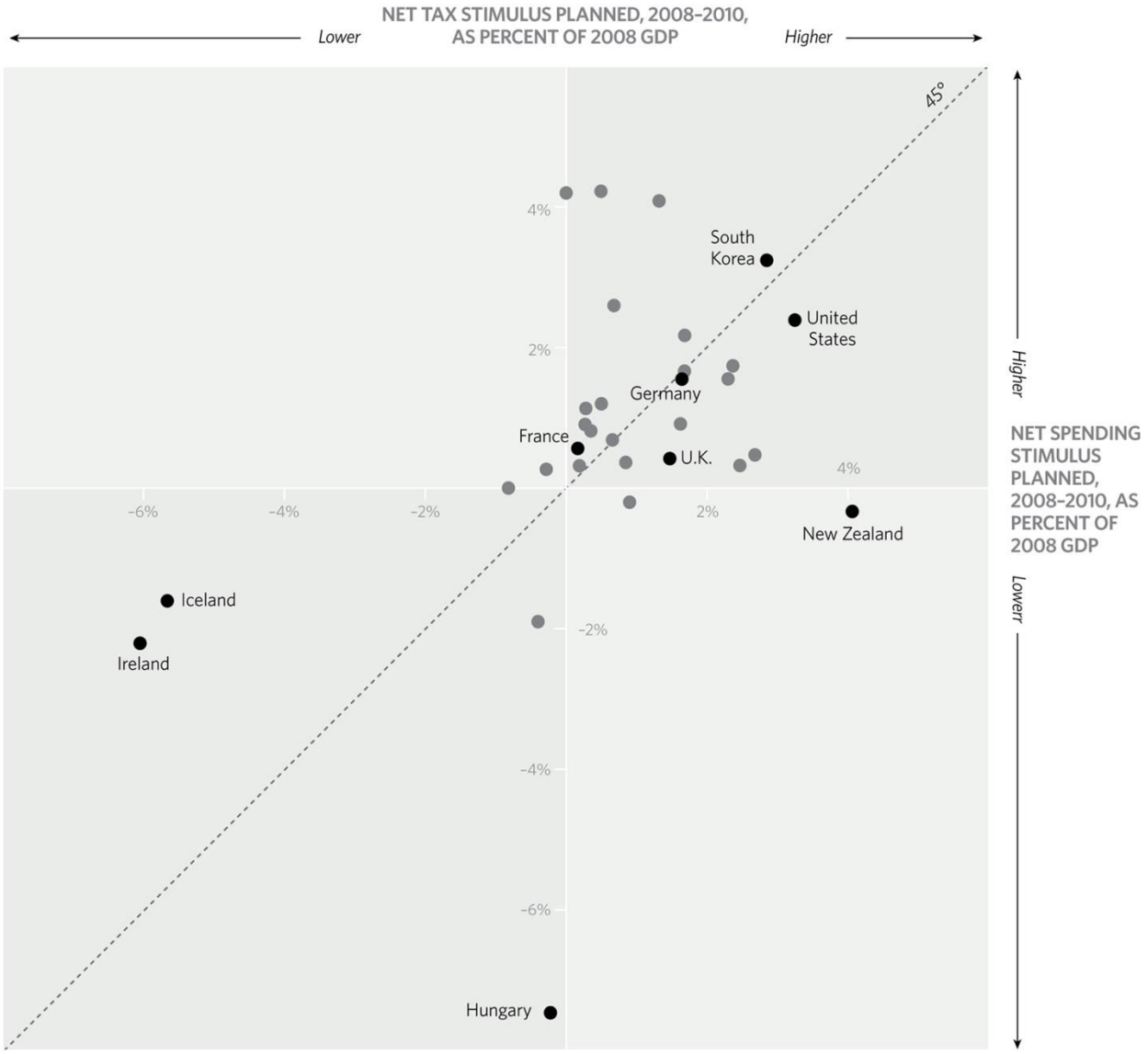
The OECD records the stimulus timing, and shows that only 8 of 23 countries[61] had undertaken any stimulus in 2008, and 8 of the stimulus packages were planned to peak in 2010.

[55]Ken Rogoff makes this point in the context of the U.K. Kenneth Rogoff, "Britain Should Not Take Its Credit Status for Granted," *Financial Times*, October 3, 2013, http://www.ft.com/intl/cms/s/0/b933e5e8-29ef-11e3-9bc6-00144feab7de.html (accessed October 17, 2013).
[56]I exclude "transfers to sub-national government" from both the numerator and denominator. OECD, *Economic Outlook*, Volume 2009/1, No. 85, June 2009, Table 1.8, http://dx.doi.org/10.1787/658647186571 (accessed October 11, 2013).
[57]Hyunseung Oh and Ricardo Reis, "Targeted Transfers and the Fiscal Response to the Great Recession," *Journal of Monetary Economics*, vol. 59(S), (2012), pp. S50–S64.
[58]International Monetary Fund, "Taking Stock."
[59]Fischer and Justo, "Government Fiscal and Real Economy Responses to the Crises."
[60]OECD, *Economic Outlook*, Volume 2009/1, No. 85, June 2009, Appendix 1.A1, http://dx.doi.org/10.1787/eco_outlook-v2009-1-en (accessed October 11, 2013).
[61]Considering only countries that planned net positive stimulus.

The OECD and Fischer and Justo data are highly correlated with each other: net tax changes at 0.94 and net spending changes at 0.87. The relative magnitudes are about equal. Thus, I incorporate the four countries for which only Fischer and Justo have data (Cyprus, Malta, Portugal, and Slovenia) into the OECD series without adjustment.

CHART 2–2

Stimulus Composition: Tax Cuts and Spending Increases



Sources: OECD, *Economic Outlook*, Volume 2009, Issue 1, No. 85, June 2009, Appendix 1.A1, http://dx.doi.org/10.1787/eco_outlook-v2009-1-en (accessed October 18, 2013), and Jonas Fischer and Isabelle Justo, "Government Fiscal and Real Economy Responses to the Crises: Automatic Stabilisers Versus Automatic Stabilisation," European Union working paper, March 25, 2010, http://ssrn.com/abstract=1984670 (accessed October 11, 2013).

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Spending increases and tax cuts are about equal in magnitude in the stimulus plans. There is relatively little difference between the Eurozone and non-Euro countries save that four of the six countries planning net consolidation are Euro countries. The diversity of stimulus magnitude and composition is illustrated in Chart 2-2.

A cruder, more direct measure of stimulus is the structural balance.[62] The IMF and OECD publish similar, but not identical, measures and the OECD refers to its version as "underlying primary fiscal balance."[63] Structural balance aims to measure deficits by their narrowest definition: It removes interest payments, one-time costs such as bank bailouts, and it attempts to correct for the business cycle, adjusting tax revenues and unemployment insurance costs accordingly. However, some cyclical costs, including poverty-reduction transfer payments, are included, so the structural balance is not truly acyclical.

In order to minimize the effect of the choice of starting year, I use an average of 2006 and 2007 as the "base" from which structural deficit grows.[64] The IMF shows 25 of 36 countries with structural deficits in 2006–2007, the OECD shows 14 of 30. John Maynard Keynes wrote that "the boom, not the slump, is the time for austerity at the Treasury,"[65] and his advice was taken to heart in Denmark, Korea, Sweden, and elsewhere. Those countries built up structural surpluses during the boom. Meanwhile, despite years of growth, Greece and Hungary had structural deficits of at least 5 percent of GDP. Others, including the U.S. and U.K., similarly failed to fiscally consolidate during the boom and thus left the difficult fiscal decisions until the aftermath of the recession. Of the U.K.'s "huge" 2011 and 2013 deficits, Scott Sumner writes that they "result from Gordon Brown's reckless decision to greatly increase the size of the British state in the good years (2000-07), combined with a decision to double down on an even bigger British state in the bad years (after 2007.)"[66]

Structural balance shows a steep decline almost everywhere through 2010, and then a recovery. Among the 14 countries whose interest rate spreads did not grow significantly relative to Germany's,[67] there is an incomplete bounce-back effect: A dollar of growing deficit from 2007 to 2010 is associated with 25 cents less deficit between 2010 and 2012.[68] The U.S. fits this

[62]Structural balance is reported as a percent of potential GDP. Where unspecified, the IMF measure was used. The IMF reports that its 2012 data for many countries are still projections. International Monetary Fund, World Economic Outlook: April 2013 edition, 1995 to 2013, http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx (accessed August 15, 2013).
[63]OECD, *Economic Outlook*, Volume 2013/1, No. 93, June 2013, Annex Table 30, http://www.oecd-ilibrary.org/economics/oecd-economic-outlook-volume-2013-issue-1_eco_outlook-v2013-1-en (accessed October 11, 2013).
[64]Although there are good reasons to think of the level of structural deficit as a measure of Keynesian stimulus, I will consider only the change in the structural balance.
[65]John Maynard Keynes, *Collected Writings of John Maynard Keynes*, Vol. 21, 1937/1983.
[66]Scott Sumner, "What British Austerity?" TheMoneyIllusion, October 5, 2013, http://www.themoneyillusion.com/?p=24017 (accessed October 7, 2013).
[67]That is, change from average spread in 2004–2006 to 2010–2012 was less than 0.5 percentage point. These 14 include the Anglophone countries and most of northern Europe.
[68]The effect is almost identical whether using the IMF or the OECD measure.

profile, increasing its structural deficit by 5.9 percent of GDP, and then shrinking it by 1.8 percent of GDP. Part of this bounce-back effect is due to the economic recovery, and part due to the termination of temporary stimulus programs. This is evidence that, in countries with fiscal space before the recession, post-recession consolidation represents an incomplete unwinding of stimulus. The other 22 countries[69] showed no systematic relationship.

TABLE 2–2

Coverage of Key Fiscal Indicators

Countries	Core Government Spending	OECD + FJ4 Stimulus Plans	IMF Structural Balance	OECD Underlying Balance	IMF Fiscal Monitor
Countries	29	31	36	30	28
Reporting	Annual	2008–2010	Annual	Annual	2009–2012
Last updated	2013	July 2009	April 2013	June 2013	October 2012
Measures tax policy?	No	Yes	No	No	Yes
Measures spending policy?	Yes	Yes	No	No	Yes

Note: See text for complete data descriptions. Countries include those within the 37-country universe considered in this report.
Sources: OECD, Statistics OECD, Annual National Accounts, Table 12, "Government Deficit/Surplus, Revenue, Expenditures, and Main Aggregates, 1995–2012," http://stats.oecd.org/ (accessed October 18, 2013); OECD, Economic Outlook, Volume 2009, Issue 1, No. 85, June 2009, Appendix 1.A1, http://dx.doi.org/10.1787/eco_outlook-v2009-1-en (accessed October 18, 2013); Jonas Fischer and Isabelle Justo, "Government Fiscal and Real Economy Responses to the Crises: Automatic Stabilisers Versus Automatic Stabilisation," European Union working paper, March 25, 2010, http://ssrn.com/abstract=1984670 (accessed October 11, 2013); International Monetary Fund, World Economic Outlook, April 2013, http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx (accessed October 18, 2013); OECD, Economic Outlook, Volume 2013, Issue 1, No. 93, June 2013, Annex Table 30, http://www.oecd-ilibrary.org/economics/oecd-economic-outlook-volume-2013-issue-1_eco_outlook-v2013-1-en (accessed October 18, 2013); and International Monetary Fund, "Taking Stock: A Progress Report on Fiscal Adjustment," Fiscal Monitor, October 2012, Figure 15, p. 21, http://www.imf.org/external/pubs/ft/fm/2012/02/pdf/fm1202.pdf (accessed October 15, 2013).

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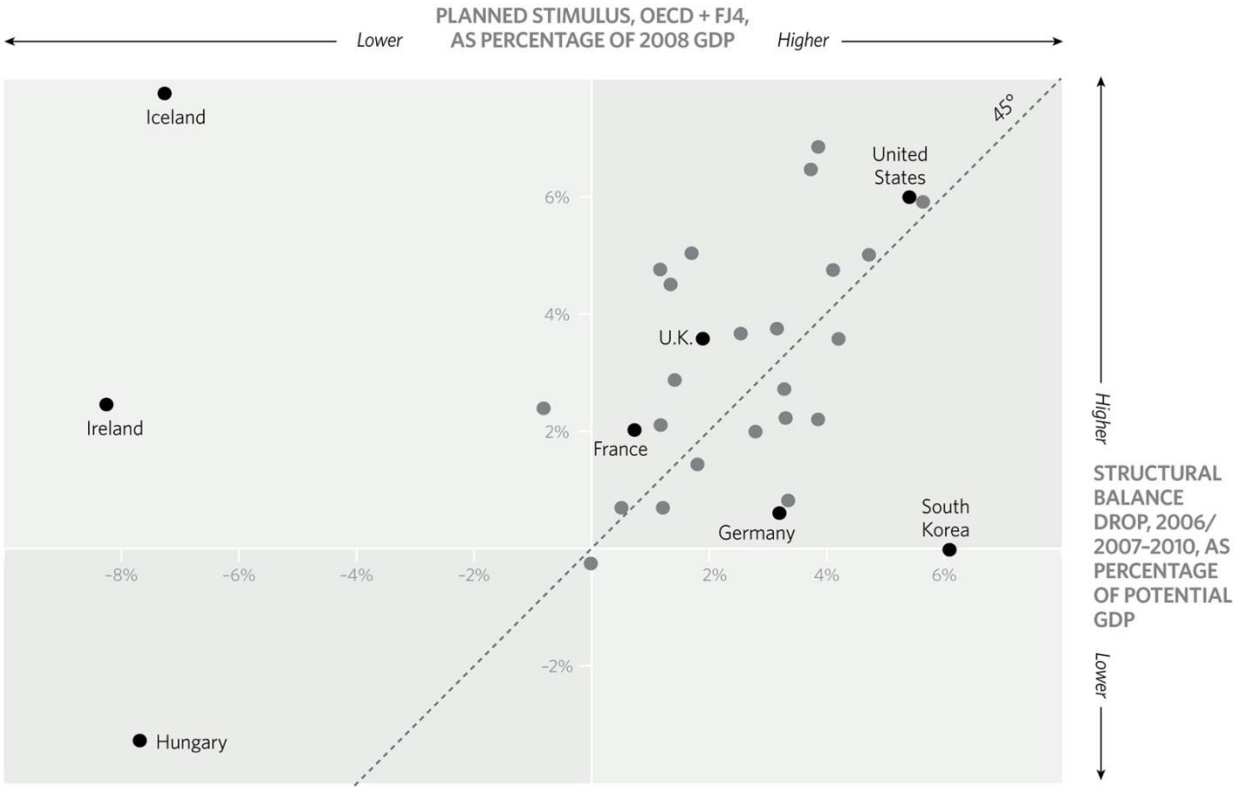
Comparing the OECD plans, structural balance, core government spending, and the panel tax rate data available, we see that the plans do not closely match other data, and correlations among the data are weak as well. The plans show ample tax cuts, but very few of these matched up with data on value-added tax (VAT) rate changes or top marginal tax rate (MTR) changes. Standard VAT rates fell—temporarily—in the U.K. and Portugal. Top MTRs were cut during the crisis in a handful of post-communist countries and by 1 percent in Finland. Denmark actually increased its top MTR in 2008. The next section further explores the challenge of identifying tax cuts in the data.

The two measures of total stimulus—structural balance change and total OECD planned stimulus—are correlated at 0.26. Dropping three outliers,[70] a dollar of OECD stimulus is associated with 40 cents of structural deficit growth from 2006–2007 to 2010.[71]

[69]Countries whose spreads increased by at least half a percentage point—a diverse group of countries.
[70]Hungary, Iceland, and Ireland engaged in early fiscal consolidation and exert undue (downward) influence on estimates.
[71]The correlation is 0.38 using OECD underlying primary balance, and the plans match at 65 cents on the dollar after dropping outliers.

CHART 2-3

Comparing Total Stimulus Metrics



Sources: OECD, Statistics OECD, Annual National Accounts, Table 12, "Government Deficit/Surplus, Revenue, Expenditures, and Main Aggregates, 1995–2012," http://stats.oecd.org (accessed September 1, 2013); OECD, *Economic Outlook*, Volume 2009, Issue 1, No. 85, June 2009, Appendix 1.A1, http://dx.doi.org/10.1787/eco_outlook-v2009-1-en (accessed October 18, 2013); Jonas Fischer and Isabelle Justo, "Government Fiscal and Real Economy Responses to the Crises: Automatic Stabilisers Versus Automatic Stabilisation," European Union working paper, March 25, 2010, http://ssrn.com/abstract=1984670 (accessed October 11, 2013); and International Monetary Fund, World Economic Outlook: April 2013, 1995 to 2013, http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx (accessed October 18, 2013).

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Core government spending growth from 2007 to 2010[72] is correlated with OECD planned spending at 0.33. Dropping outlier Hungary, a dollar of OECD planned spending is associated with 44 cents more core government spending. In 17 of 27 countries with data, actual core spending grew more than the stimulus plan indicated.[73] However, actual core spending growth includes spending unrelated to stimulus, and core government spending had been growing faster than the rest of the economy in many countries prior to the crisis.

Among the countries in which core spending grew less than planned, fiscal consolidations that began in 2010 are a prime suspect. Greece, for example, increased government spending in 2008

[72]This is not the ideal timing choice but it matches the OECD plans.

[73]All four non-European countries had core spending increases below planned stimulus levels. Since these are not cases where one expects to find early fiscal consolidation, it may be indicative of differences in data definitions or stimulus structure.

and 2009 in accordance with its stimulus plan, and then consolidated rapidly in 2010. Spain did likewise, to a much lesser degree.

CHART 2–4

Comparing Spending Stimulus Metrics

Sources: OECD, *Economic Outlook*, Volume 2009, Issue 1, No. 85, June 2009, Appendix 1.A1, http://dx.doi.org/10.1787/eco_outlook-v2009-1-en (accessed October 18, 2013), and Jonas Fischer and Isabelle Justo, "Government Fiscal and Real Economy Responses to the Crises: Automatic Stabilisers Versus Automatic Stabilisation," European Union working paper, March 25, 2010, http://ssrn.com/abstract=1984670 (accessed October 11, 2013).

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Measuring Tax Policy Changes

The OECD stimulus plans indicate that tax cuts averaged about half of the total planned stimulus. But comparing the plans to later data, it is difficult to evaluate whether the planned tax changes to provide stimulus were enacted. In most countries, some tax cuts are listed in the European Commission's *Tax Reforms in EU Member States* series and are consistent with the plans. However, at least the Czech Republic[74] and Sweden[75] did not follow through with major planned tax cuts.

[74]Ulrika Lomas, "Czech Senate Approves Income Tax Cut Delay," *Tax-News.com*, January 5, 2009, http://www.tax-news.com/news/Czech_Senate_Approves_Income_Tax_Cut_Delay____34345.html (accessed September 16, 2013).

Likewise, we can surmise that for many countries, tax increases recorded for 2009–2010 departed from the stimulus plans made in 2008. *Tax Reforms* series[76] found that the tax-cutting habit of its 2008 report[77] (17 tax rate cuts with only 3 increases) was short-lived.[78] The *Tax Reforms* report on 2009 and the first half of 2010 reveals 39 increases and 28 decreases.[79] A year later (2010–mid-2011), there were even more tax rate increases, with 50 increases against 17 decreases.[80] In the most recent report (2011–mid-2012), there were 68 increases and 13 decreases.[81] The relevant tables from the four reports, which break out tax changes by country, type, and direction, are reproduced in the online data compendium that accompanies this report.

In countries with progressive taxation, taxes act as an automatic stabilizer, falling faster than income during a recession: Corporations making losses pay no corporate tax, individuals earning less income drop to lower tax brackets, paying lower marginal and average rates. Thus, for countries in which GDP fell from 2007 to 2009, one expects—in the absence of tax policy changes—a decline in government revenue's share of GDP.

Instead, the government revenue rate rose in 12 of 23 countries.[82] (See Table 2-3.)Using a narrower measure of revenue that includes only taxes and social security contributions leads to the same conclusion.

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[75]Ulrika Lomas, "Sweden Eyes Further Corporate Tax Cuts," *Tax-News.com*, August 21, 2012, http://www.tax-news.com/news/Sweden_Eyes_Further_Corporate_Tax_Cuts____56907.html (accessed September 18, 2013).
[76]European Commission, "Tax Reforms in EU Member States," http://ec.europa.eu/economy_finance/publications/european_economy/tax_report/index_en.htm (accessed October 7, 2013).
[77]European Commission, "Monitoring Revenue Trends and Tax Reforms in Member States 2008," *European Economy*, No. 4 (April 2009), Table A3.1, http://ec.europa.eu/economy_finance/publications/publication_summary14864_en.htm (accessed October 11, 2013).
[78]Tax changes are not all created equal. I have emphasized rate changes, because they tend to be larger and have a greater impact on incentives than non-rate changes. The story for non-rate changes is very similar, however.
[79]European Commission, "Tax Policy after the Crisis: Monitoring Tax Revenues and Tax Reforms in EU Member States 2010," *European Economy*, No. 6 (October 2010), Table 3.1, http://ec.europa.eu/economy_finance/publications/european_economy/2010/ee6_en.htm (accessed October 11, 2013). The report lists on page 43 the cutoff date for inclusion as June 30, 2010.
[80]European Commission, "Tax Reforms in EU Member States," *European Economy*, No. 5 (October 2011), Table 3.1, http://ec.europa.eu/economy_finance/publications/european_economy/2011/ee5_en.htm (accessed October 11, 2013).
[81]European Commission, "Tax Reforms in EU Member States 2012: Tax Policy Challenges for Economic Growth and Fiscal Sustainability," *European Economy*, No. 6 (October 2012), Table 3.1, http://ec.europa.eu/economy_finance/publications/european_economy/2012/ee-2012-6_en.htm (accessed October 11, 2013).
[82]Since tax policies are generally set as a rate, but core government spending mostly as dollar-value allocations, both are reported in those terms. A country with a flat tax on all income and no change in spending policy would show zero change in both columns. If one looks at total real revenue alone, it grew in five of the 23 shrinking economies in Table 1.

Referring to the OECD's stimulus plans, France, Norway, Belgium, Hungary, and Italy are reported as the countries with the smallest planned net tax changes, but their revenue rate changes are diverse, as shown in Table 2-3. But others who planned large tax cuts—Finland, Luxembourg, and Germany—ended up growing their revenue rates even more than slight tax cutters France and Belgium. As Chart 2-5 shows, most countries planned some tax stimulus, but many countries ended up raising revenue rates instead. This does not mean that the tax stimulus plans were meaningless: Aside from outliers Iceland and Ireland, the two series are closely linked—a dollar more of planned tax stimulus is associated with about a dollar less in revenue. However, that linkage also includes a constant 1.4 percent of GDP increase in revenues across all countries: The mystery is how to account for that extra 1.4 percent of GDP in revenue.[83]

TABLE 2–3

Revenue and Core Spending During the Great Recession

CHANGE FROM 2007 TO 2009

	Revenue Rate *(share of current GDP)*	Core Government Spending *(share of 2007 GDP)*	GDP *(log difference)*
Estonia	9.9%	1.7%	-19.4%
Hungary	5.7%	0.6%	-6.1%
Luxembourg	3.5%	2.1%	-4.9%
Finland	3.0%	3.3%	-8.6%
Denmark	3.0%	4.3%	-6.6%
Italy	2.9%	1.4%	-6.8%
Austria	1.7%	1.6%	-2.4%
Germany	1.5%	1.3%	-4.2%
Slovenia	1.1%	2.2%	-4.8%
Belgium	1.1%	1.8%	-1.8%
France	0.7%	1.6%	-3.3%
Netherlands	0.3%	2.8%	-1.9%
Greece	-0.1%	3.0%	-3.4%
Sweden	-0.3%	0.6%	-5.8%
Portugal	-0.6%	1.6%	-3.0%
Czech Rep.	-1.3%	1.8%	-1.6%
Japan	-1.4%	-0.2%	-6.7%
U.K.	-1.6%	1.8%	-5.0%
Norway	-1.8%	2.8%	-1.6%
United States	-3.3%	1.3%	-3.5%
Ireland	-4.1%	-0.2%	-7.7%
Iceland	-4.4%	1.0%	-5.6%
Spain	-6.1%	2.6%	-2.9%

Sources: OECD, OECD, Annual National Accounts, Table 12, "Government Deficit/Surplus, Revenue, Expenditure, and Main Aggregates, 2007–2009," http://stats.oecd.org/ (accessed September 1, 2013), and author's calculations.

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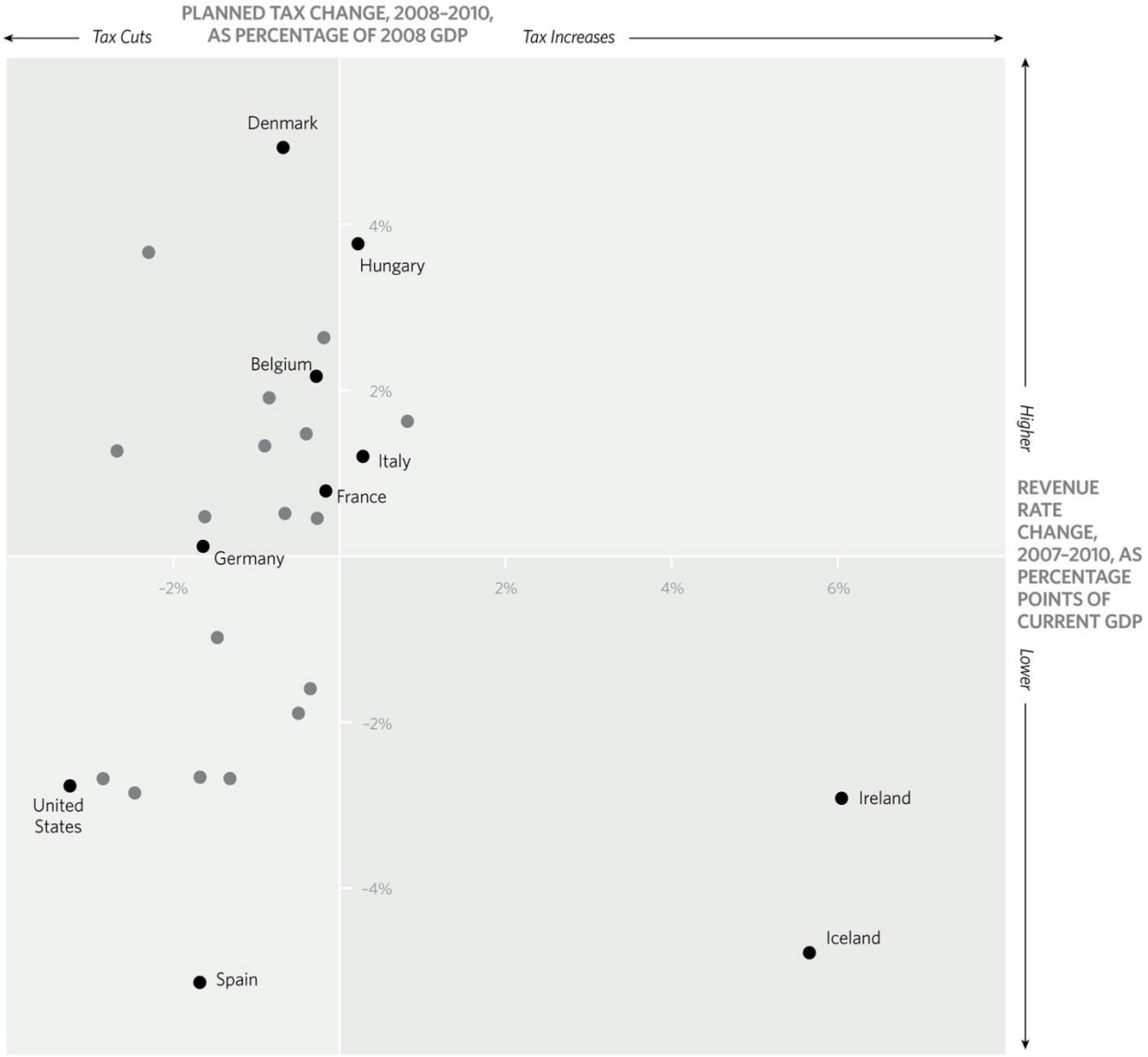
Of the revenue-rate increasers in Table 2-3, two clearly raised key tax rates: Estonia and Hungary.[84] The other ten could conceivably reflect GDP falling disproportionately in low-tax sectors. If that is the case, the high labor taxation and "social contributions" in Europe act as a sort of automatic *destabilizer*. It follows that one should see some revenue rates fall from 2009 to 2011 in the growing economies where it had previously risen. Instead, most revenue rates continue to rise, and were significantly higher in 2011 than in 2007 in nine of the ten. More broadly, the data across all countries does not exhibit the expected mean-reversion in revenue rate. The evidence is more consistent with policies toward higher revenue than it is with cyclical artifacts.

[83]That is, a regression of revenue rate change 2007–2010 on the tax stimulus plans and a constant term yielded coefficients of 1.1 on the tax stimulus plans and 1.4 on the constant terms, both significant at the 1 percent level.
[84]European Commission, "VAT Rates Applied in the Member States of the European Union," July 1, 2013, http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf (accessed September 19, 2013).

CHART 2–5

Comparing Tax Change Metrics, 2007–2010



Sources: OECD, *Economic Outlook*, Volume 2009, Issue 1, No. 85, June 2009, Appendix 1.A1, http://dx.doi.org/10.1787/eco_outlook-v2009-1-en (accessed October 18, 2013), and Jonas Fischer and Isabelle Justo, "Government Fiscal and Real Economy Responses to the Crises: Automatic Stabilisers Versus Automatic Stabilisation," European Union working paper, March 25, 2010, http://ssrn.com/abstract=1984670 (accessed October 11, 2013).

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It is noteworthy that most countries pursue mixed tax changes, with increases as well as decreases.[85] The complex, constant flux of tax law helps explain why it is so difficult to find discretionary tax-change measurements. Below, the statutory VAT and top marginal tax rates are reported, which are economically important and comparable across countries.

[85]European Commission, "Tax Reforms in EU Member States."

Considering the frequent departures from tax-cutting plans and the moderate correlation of spending plans with measured spending growth, one can use the stimulus plans as a rough estimate but not a final record. An accurate post-action report on enacted stimulus measures would be a valuable contribution, but I found none in preparing this report.

Measuring Fiscal Consolidation

Fiscal consolidation is more precisely and consistently measured than fiscal stimulus. The IMF's Fiscal Monitor "Taking Stock" report, published in October 2012, measures net discretionary fiscal policy changes relative to 2009 in 28 of the countries in the dataset used for this report.[86] One drawback to this measure is that, in many cases, 2010 was still a year of stimulus, so fiscal expansion and consolidation cancel each other out for countries like the U.S. and Germany, in which stimulus peaked in 2010 or later.

When using Fiscal Monitor data, I exclude changes in interest expenditure, which reflect market forces rather than policy decisions.

The three data sources on fiscal consolidation correlate closely: structural balance, core government spending, and Fiscal Monitor policy changes.

Total fiscal consolidation correlates at 0.93 with structural balance, and a dollar of fiscal consolidation is associated with 84 cents of structural deficit reduction. Splitting fiscal consolidation into revenue and expenditure components, I find that both translate into structural deficit reduction at 82 cents to 90 cents on the dollar.

Likewise, Fiscal Monitor non-interest expenditure change is correlated at 0.84 and associated with 82 cents on the dollar to core government spending change, a relationship illustrated in Chart 2-6.

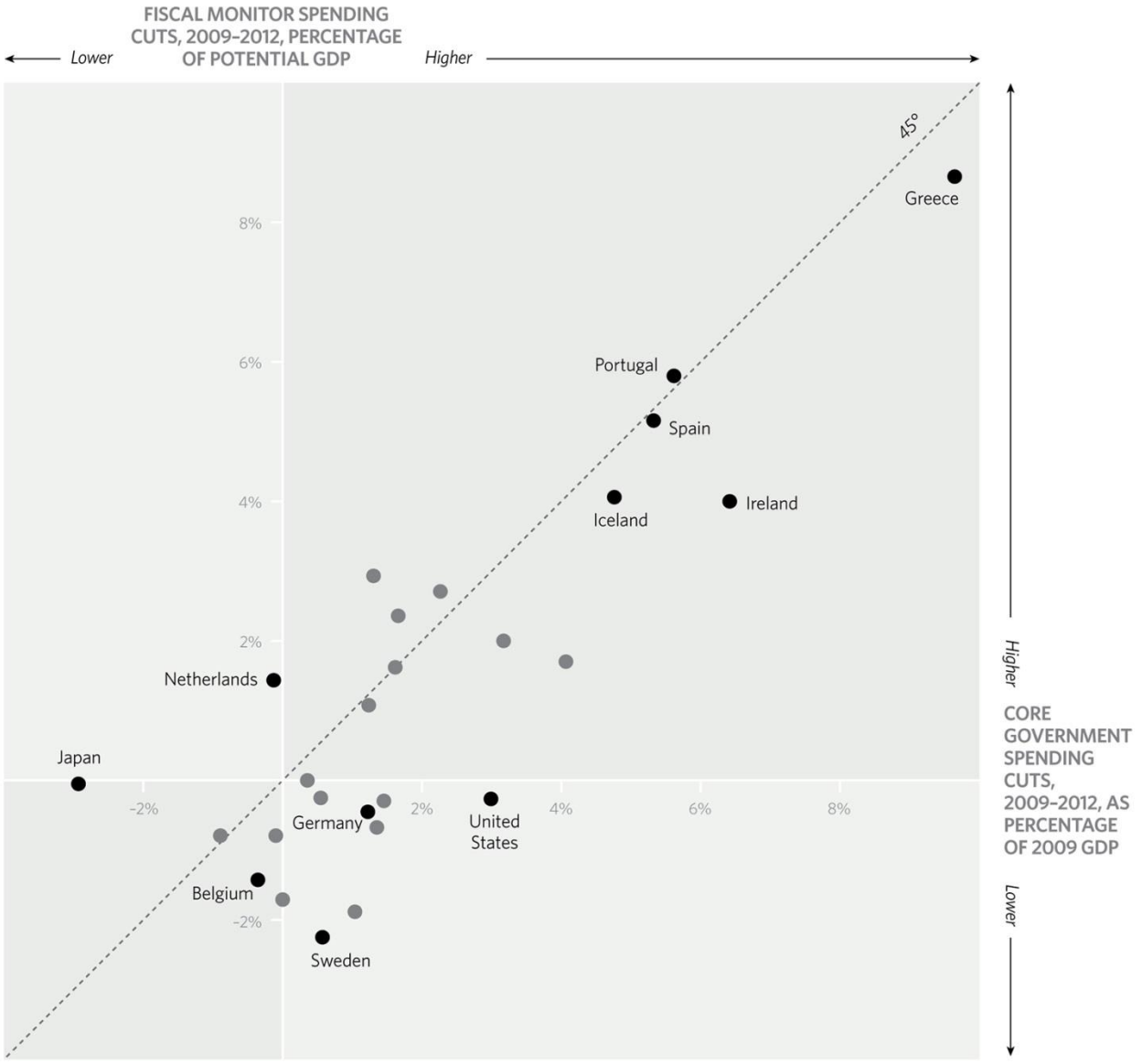
Core government spending and structural balance changes are linked at 98 cents to the dollar and correlated at 0.83, despite the fact that structural balance captures revenue changes as well as spending changes.

Fiscal Monitor data firmly supports the view that spending cuts have preponderated in recent fiscal consolidation. Among 22 countries who pursued net consolidation, the median spending share was 79 percent, but the distribution spans from the Netherlands and Belgium, which increased taxes and spending, to Germany, Canada, Sweden, and others, which cut taxes and spending. The more austere countries tended to pursue larger consolidations in both spending and taxes, but there is substantial diversity in the approach.

[86]The Fiscal Monitor lists the changes as "2009–2012." In personal communication, Marialuz Moreno Badia confirmed that the data refer to changes relative to 2009; hence policy actions in 2010 and beyond. International Monetary Fund, "Taking Stock." Data is from 2009–2012.

CHART 2–6

Comparing Spending Austerity Metrics



Note: Core spending data for some countries is only available through 2011.
Sources: OECD, Statistics OECD, Annual National Accounts, Table 12: "Government Deficit/Surplus, Revenue, Expenditures, and Main Aggregates, 2009–2012," http://stats.oecd.org/ (accessed October 18, 2013), and International Monetary Fund, World Economic Outlook, April 2013, http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx (accessed October 18, 2013).

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There is no correlation between the magnitude and composition of consolidation. Chapter 4 analyzes the relative impact of spending cuts and tax increases on growth. As one expects from the academic literature reviewed in Chapter 1, tax increases have a much more severe effect on growth.

Austerity Eurozone?

The Fiscal Monitor data on fiscal consolidation reveal little regularity in the geography of austerity. The three largest consolidations are in Euro members Greece, Portugal, and Ireland. But Spain's consolidation is similar to those of Romania and Iceland, non-Euro countries that experienced crises. The U.S. and Poland—steadily growing economies—had greater fiscal consolidation than the U.K. and Italy, which are stagnant. The bulk of the European economy[87]—Germany, Austria, the Netherlands, and Belgium—consolidated by a mere 1 percent of GDP. Finland acted like its non-Euro neighbors Sweden and Denmark in continuing expansionary policy.

Core government spending also shows several Eurozone crisis countries significantly cut spending from 2010 to 2012: Portugal, Spain, Greece, and Ireland all lowered spending by at least 3 percent of GDP. But Italy again is well short of the crisis group, with a 1.4 percent cut in spending. The core Eurozone again shows little austerity: Government spending fell 1.1 percent in the Netherlands and 0.2 percent in France, but rose slightly in Austria, Belgium, and Germany. New Euro member Estonia increased spending by 4.4 percent.

Outside the Eurozone, spending fell more than 1 percent in the U.K., Hungary, Poland, and the Czech Republic, and rose more than 1 percent in Norway and Sweden.

Europe, as such, has not engaged in severe fiscal consolidation, although several European countries have. Nor has the Eurozone distinguished itself by uniformity in fiscal policy. In light of the Fiscal Monitor data, claims that the U.S. economy is outpacing Europe's due to the former's lack of austerity are unconvincing.

What Precipitated Fiscal Consolidation?

Interest rate increases are one of the primary causal factors leading to fiscal consolidation, since higher interest rates make borrowing more expensive and signal the possibility of exclusion from borrowing markets and an accompanying debt crisis. Several countries cut spending and raised taxes in response to bond-market pressure, but in countries not facing interest rate pressure one finds only scattered evidence of mild fiscal consolidation following the financial crisis, but no examples that are clearly sustained and severe austerity.

Using annual averages of interest rate spreads,[88] one can easily identify cases where interest rates reached worrying levels for public borrowing. Just four of 34 countries had a year in which spreads averaged at least seven percentage points above the respective 2004–2006 average level: Greece, Latvia, Lithuania, and Portugal. Latvia and Lithuania experienced interest rate spread

[87]Fiscal Monitor has no data on France, but other data indicate that France is similar to the other core EU countries.
[88]The spread here is the difference between a country's 10-year borrowing rate and Germany's 10-year borrowing rate. Within the Eurozone, spread changes are dominated by risk concerns. Outside the Eurozone, expectations of currency movements can also play an important role, so spread levels and changes are less indicative of risk perceptions.

spikes around 10 points in 2009. Greece's spread kept spiking from 2010 to 2012, when it averaged 21 percent. Portugal's spread jumped in 2011 and remains elevated into 2013.

Less dramatic spread increases of at least three points occurred in five more countries. Bulgaria's spread jumped in 2009. Ireland's grew steadily by almost seven points, peaking in 2011. Italy, Spain, and Slovenia all peaked in 2012 near four points above baseline.

Other crisis countries—Iceland, Hungary, and Romania—did not satisfy the definitions above because their spreads were elevated during the baseline period. Iceland's spread reached its highest value in 2008, Romania's in 2009, and Hungary's in 2012, but each country had multiple episodes of rising and falling spreads.

Did austerity measures follow bond yield increases? Only core government spending, structural balance, and revenue rate measures are presented as annual data, and the latter two of these are strongly influenced by economic conditions as well as policy.

Looking at 100 annual observations from 20 European countries, one finds five observations of spreads increasing at least three percentage points, 11 observations of spreads increasing one to three points, and 48 observations of steady and moderate spreads.[89] The five extreme cases (from Greece, Portugal, and Ireland) were followed by sharp drops in GDP (−3.5 percent on average) and core government spending (−11.9 percent), and an increase in revenue rate (+0.5 percent of GDP) despite the shrinking economy. The eleven intermediate cases were still in the same vein—GDP (−2.4 percent) and spending (−4.6 percent) both down, and a slight decline in revenue rate (−0.2 percent of GDP).

Of the 16 observations with significant spread increases, only three were followed by rising government spending, and only seven had less than a 4 percent cut in government spending.

The 48 steady observations include great variety, but average to increasing GDP (+1.0 percent), spending (+1.3 percent), and revenue rate (+0.5 percent of GDP). Only five of these observations had core spending falling by more than 4 percent. Of the five, three were in 2010 and followed spending increases of similar magnitude in 2009.

The remaining two cases were Slovakia and the U.K. in 2011, each of which had rising GDP, a rising revenue rate, and had implemented only a small reduction in spending in 2010.

Looking at levels instead of changes, only one of 19 core spending reductions of at least 4 percent took place in countries with a spread below the median (0.63)—again, the U.K. in 2011.

[89]I measured interest rate spread versus Germany averaging over the 12 months from July of the previous year to June in order to better capture causal effects from spread change to other variables. The "steady and moderate spreads" are all those within 150 basis points of zero and with less than 25 basis points spread change in the previous year, including all of Germany's observations. This section uses 2008–2012 only. I do not use observations with spreads increasing between 25 and 100 basis points or steady at an elevated level.

The evidence turns up very few spending cuts that were not associated with high or rising interest rates. The U.K.'s spending cuts may be the closest thing to discretionary spending austerity, although core government spending in the U.K. in 2011 and 2012 was about equal to its pre-recession level and transfers have grown substantially.

In a different sample of 29 countries,[90] I estimate that eight faced substantial pressure from interest rates.[91] Among the 21 others, only the Czech Republic, the U.K., and Japan decreased core government spending, the latter two by less than 1 percent. Germany's 12 percent increase in spending was the median.

In conclusion, government spending cuts appear to occur in response to outside pressure from bond markets. There is little evidence of ample unforced spending cuts. However, the next section will show that tax increases have occurred more often in the absence of market pressure.

VAT Rate Changes

A major source of government revenues in most European countries is the value-added tax (VAT), which is comparable to a sales tax. In 2007, the EU's standard VAT rates were distributed between 15 percent and 25 percent.

During the crisis only Portugal and the U.K. temporarily lowered their standard VAT rate as a form of stimulus. But following the crisis, 17 of 27 EU countries raised the VAT, by an average of 2.9 points. Table 2-4 lists all the VAT increases.[92] Recalling that the deadweight loss caused by a tax is approximately proportional to its square,[93] the U.K. increased the harm done by its VAT by roughly 30 percent when it increased the VAT from 17.5 percent to 20 percent.

Not a single one of the 27 EU countries ended the crisis with a standard VAT lower than it had in 2007. Clearly, the VAT was not a preferred stimulus instrument, but has been a preferred consolidation instrument.

As Table 2-4 records, VAT increases usually followed substantial increases in the interest rate spread. (Because the data records when the tax increase took effect, markets may respond earlier, when the change is announced.)

At low spreads, however, VAT increases were more common than major spending cuts. Nine of the 27 VAT increases took place in countries with low spreads that were not rising noticeably.[94] Most striking is that in all seven cases through 2012, core government spending fell at least slightly in the same year as the tax increase. That suggests that VAT increases are part of broader

[90]Excluding, for example, Latvia and Lithuania, but including Estonia. This sample is based on OECD data.
[91]Greece, Hungary, Iceland, Ireland, Italy, Portugal, Slovenia, and Spain.
[92]I exclude temporary VAT cut reversals in Portugal and the U.K.
[93]James R. Hines Jr., "Three Sides of Harberger Triangles," *Journal of Economic Perspectives*, Vol. 13, No. 2 (Spring 1999), http://ideas.repec.org/a/aea/jecper/v13y1999i2p167-188.html (accessed October 11, 2013).
[94]I take the liberty of including Estonia, 2009, on this list. Estonia's lack of data reflects the fact that it had almost no public debt.

fiscal consolidation agendas, which in these cases are not forced by bond markets. However, the spending cuts that accompanied the unforced VAT increases were modest, amounting on average to a rollback of less than half the earlier increases in core government spending. In five of the seven, a major tax rate increase has accompanied an overall increase in government spending from 2007 to 2012.

Some countries apply a lower ("reduced") VAT rate to favored products or sectors. Reduced VAT rates were cut 6 times between 2007 and 2013, and were raised 22 times.

TABLE 2–4

VAT Rate Increases

Country	Date	Increase in Standard VAT Rate	Spread Movement (100 bp=1 percentage point)
Ireland	December 2008	0.5	Rose 100 bp in last 3 months; temporary: expired December 2009
Latvia	January 2009	3	Rose 500 bp in last 3 months
Lithuania	January 2009	1	Rose 900 bp in last 3 months
Estonia	July 2009	2	Lacking data, however, Estonia has nearly no debt
Hungary	July 2009	5	Peaked in March at 500 bp above July 2008 level
Lithuania	September 2009	2	Steady above 11 percent since February
Czech Republic	January 2010	1	Steady around 1 percent; peaked above 2 percent previous year
Greece	March 2010	2	Rose 150 bp in last 4 months; still a modest 3 percent
Finland	July 2010	1	Steady near zero
Greece	July 2010	2	Rose 340 bp since March VAT increase
Romania	July 2010	5	Steady around 4.5 percent; peaked above 8 percent in mid-2009
Spain	July 2010	2	Rose 100 bp in last 3 months
Latvia	January 2011	1	Declined 400 bp in last 2 months and 800 bp over last year
Poland	January 2011	1	Steady around 3 percent
Portugal	January 2011	2	Rose 100 bp in last 6 months
Slovakia	January 2011	1	Steady around 1 percent
United Kingdom	January 2011	2.5	Steady below 1 percent
Italy	September 2011	1	Rose 200 bp in last 3 months
Hungary	January 2012	2	Rose 300 bp over last 6 months
Ireland	January 2012	2	Declined 400 bp from July 2011 peak
Cyprus	March 2012	2	Lacking data
Spain	September 2012	3	Peaked two months prior above 5 percent
Netherlands	October 2012	2	Steady below 1 percent
Czech Republic	January 2013	1	Steady below 1 percent.
Cyprus	January 2013	1	Lacking data
Finland	January 2013	1	Steady near zero
Italy	July 2013	1	Steady around 3 percent

Note: Although Italy's interest rate spread in 2013 is moderate, this reflects the conditional backing of the European Central Bank. Thus, Italy's VAT increase took place under outside pressure, albeit indirect.
Sources: European Commission, "VAT Rates Applied in the Member States of the European Union," July 1, 2013, http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf (accessed October 18, 2013); European Central Bank, Statistical Data Warehouse, "11.15 Harmonised Long-Term Interest Rates for Convergence Assessment Purposes, 2004–2013," http://sdw.ecb.europa.eu/browse.do?node=bbn3146 (accessed October 17, 2013); and OECD, Economic Outlook, Volume 2013, Issue 1, No. 93, June 2013, Annex Table 35, http://www.oecd-ilibrary.org/economics/oecd-economic-outlook-volume-2013-issue-1_eco_outlook-v2013-1-en (accessed October 11, 2013).

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CHART 2–7

Changes to VAT Rates Relative to 2007 (Page 1 of 3)

The charts below show how 27 countries in Europe changed their Value-Added Tax (VAT) rates since 2007. Ten countries left their rates unchanged, but 17 others raised their rates.

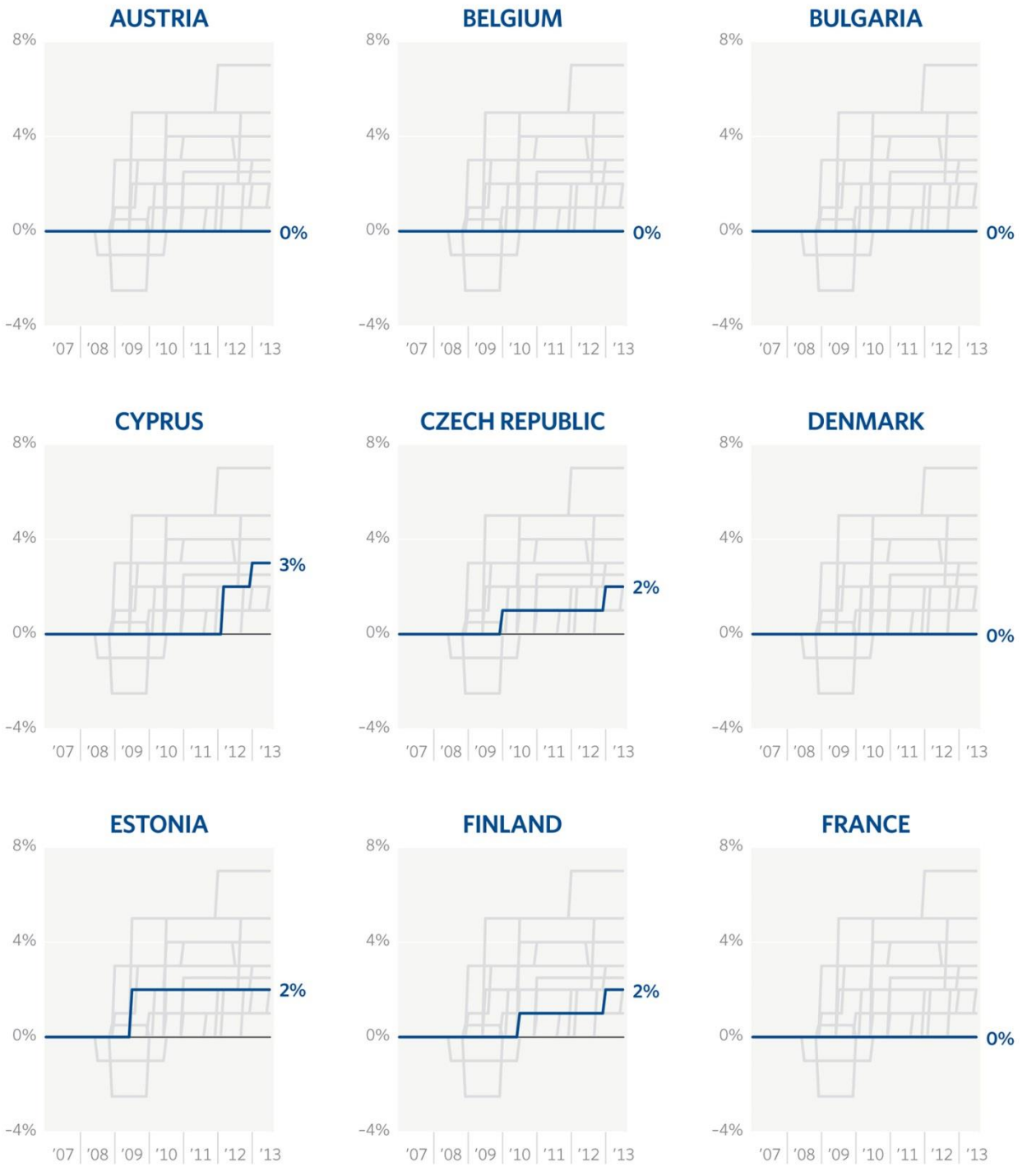

CHART 2–7

Changes to VAT Rates Relative to 2007 (Page 2 of 3)

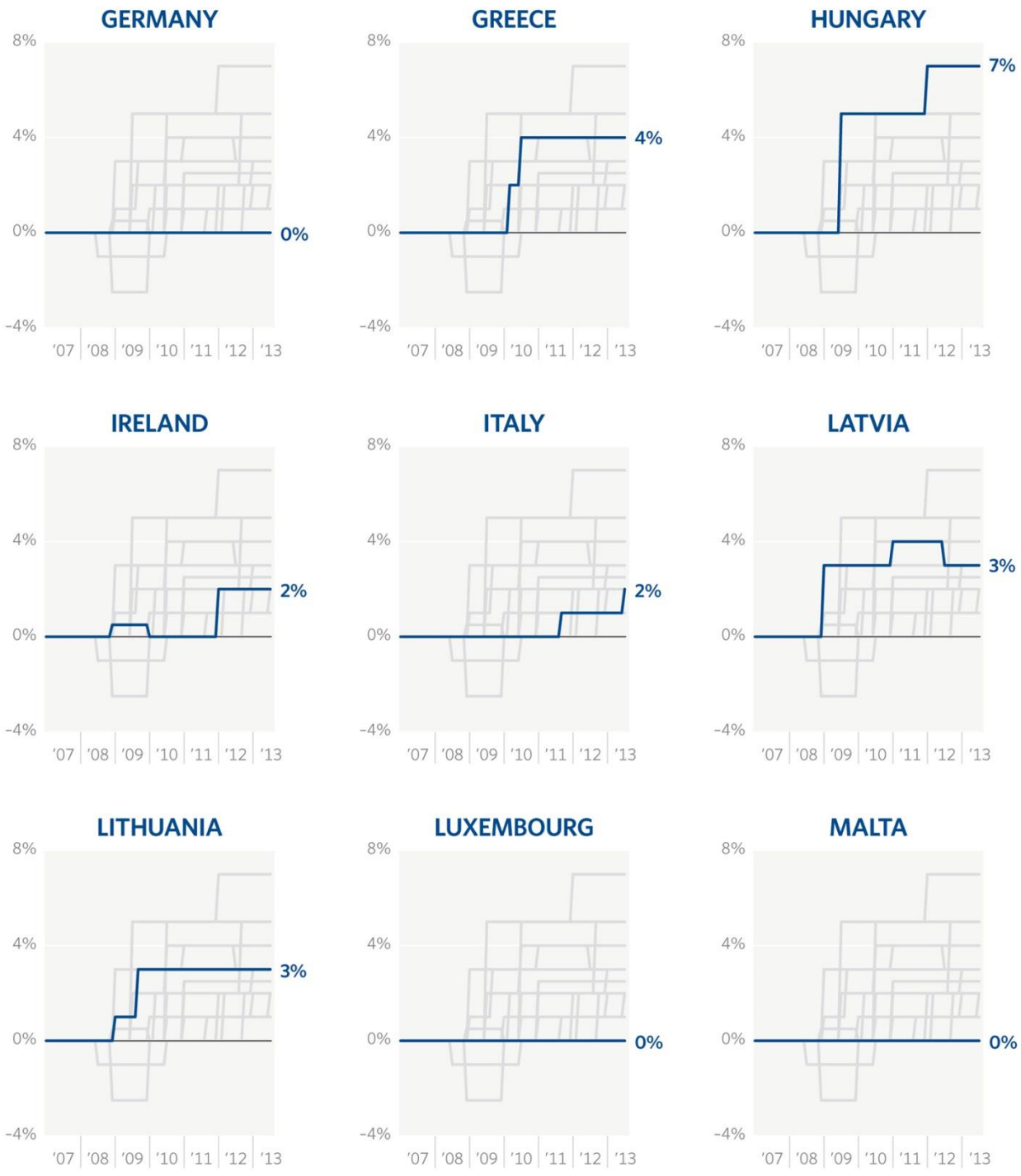

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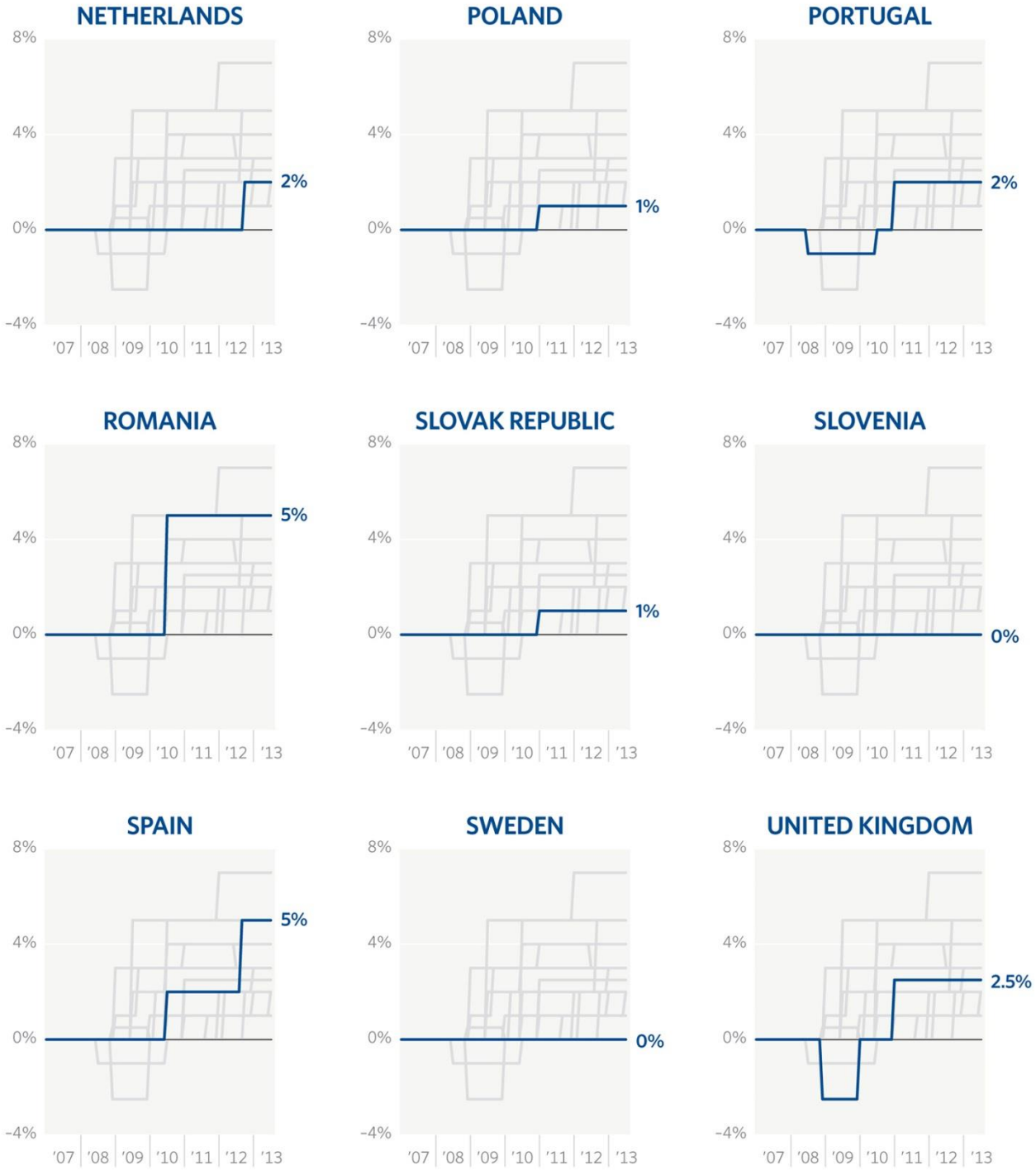
CHART 2–7

Changes to VAT Rates Relative to 2007 (Page 3 of 3)



Source: European Commission, "VAT Rates Applied in the Member States of the European Union," July 1, 2013, http://ec.europa.eu/taxation_customs/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf (accessed October 18, 2013).

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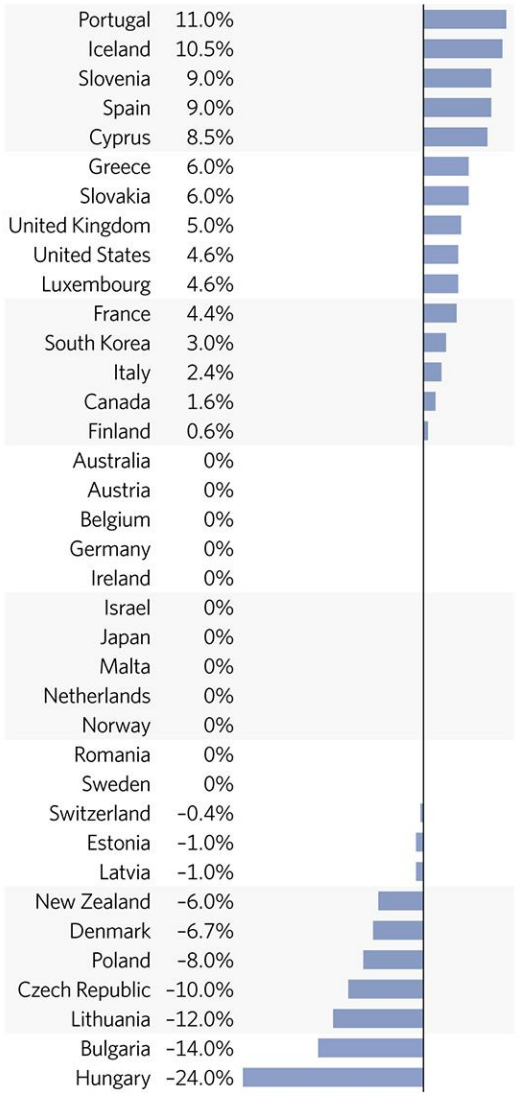
CHART 2–8

Top Marginal Tax Rate Change, 2007–2013



Sources: Eurostat, *Taxation Trends in the European Union: 2013 Edition* (Brussels: European Commission, May 2013), p. 35, http://ec.europa.eu/taxation_customs/taxation/gen_info/economic_analysis/tax_structures/index_en.htm (accessed October 18, 2013), and KPMG, "Individual Income Tax Tables," http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/individual-income-tax-rates-table.aspx (accessed October 18, 2013).

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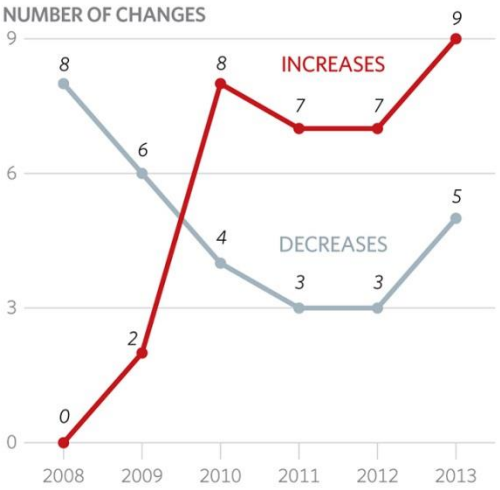
CHART 2–9

Changes to the Top Marginal Income Tax Rate



Note: Data are from 37 countries.
Sources: Eurostat, *Taxation Trends in the European Union: 2013 Edition* (Brussels: European Commission, May 2013), p. 35, http://ec.europa.eu/taxation_customs/taxation/gen_info/economic_analysis/tax_structures/index_en.htm (accessed October 18, 2013), and KPMG, "Individual Income Tax Tables," http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/individual-income-tax-rates-table.aspx (accessed October 18, 2013).

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Personal Income Tax Rate Changes

The top marginal personal income tax rate covers a much smaller share of the economy than the standard VAT, and its definition and application varies across countries.[95] But it captures attempts to finance government by taxing high earners or attempts to expand the economy by flattening the tax structure. Both types of tax changes took place between 2007 and 2013.

The top marginal rate was raised by 6 percentage points to 11 percentage points in seven countries

[95]Data for this section came from the EU's *Taxation Trends* 2013 and, for non-EU countries, from KPMG. Eurostat, *Taxation Trends in the European Union: 2013 Edition* (Brussels: European Commission, May 2013), p. 35, http://ec.europa.eu/taxation_customs/taxation/gen_info/economic_analysis/tax_structures/index_en.htm (accessed October 11, 2013), and KPMG, *Individual Income Tax Tables*, http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/individual-income-tax-rates-table.aspx (accessed October 11, 2013).

at risk of a sovereign debt crisis.[96] In addition, the United Kingdom, United States, and France enacted top marginal rate increases of 4 percentage points to 5 percentage points.

Hungary slashed a 40 percent top tax rate to 20 percent in 2011 and further to 16 percent in 2013. Large top rate cuts took place in Bulgaria and the Czech Republic when both enacted flat taxes in 2008. Other sizable tax cuts took place in Lithuania, Poland, Denmark, and New Zealand.

A few temporary increases and cuts have taken place and been (partially) reversed. The U.K. raised the top rate from 40 percent to 50 percent with a temporary surtax before returning to 45 percent. The Czech Republic originally set its flat rate at 15 percent and raised it to 22 percent in 2013. Israel had a small, temporary rate cut. Greece undid one-third of its original 9-point rate increase.

Over time, there is an apparent break in 2010 between a tax-cutting trend (which dates to before the crisis) and a tax-increase trend. However, most of the countries now increasing tax rates had not cut them in the recent past, so the trend break obscures diverging tax policies. Since 2004, the dispersion of top rates has risen by half.[97] There are more countries below 25 percent, but the median top rate has risen from 40 percent to 45 percent.

TABLE 2–5

Taxing Wages Summary Average and Marginal Tax Rates

This table refers to changes in average and marginal tax rates from 2007 to 2012 for a single adult earning the average wage and for an adult earning the average wage with two children and a spouse earning two-thirds of the average wage.

CHANGES FROM 2007 TO 2012

Four Tax Rates Falling	Mixed	Four Tax Rates Rising
Denmark	Australia	Belgium
Finland	Austria	Estonia
Germany	Czech Republic	France
Hungary	Greece	Iceland
Israel	Korea	Ireland
Netherlands	Norway	Italy
Poland	Portugal	Japan
Sweden	Slovakia	Luxembourg
Switzerland	Slovenia	Spain
United Kingdom		
United States		

Source: OECD, Statistics OECD, Taxing Wages: Comparative Tables, 2007–2012, http://www.stats.oecd.org (accessed October 18, 2013).

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The OECD's Taxing Wages provides taxpayer-level details on each member country's income tax policies.[98] The summary measures published by the OECD are expressed in terms of the taxes paid by someone at the average worker's income level, which make them endogenous to the business cycle. I used four summary measures of middle-class income tax to capture an aggregated sense of the overall direction of tax policy. The measures indicate, as usual, great diversity across countries, but these metrics indicate that middle-class income tax burden has fallen more widely than it has risen. With the strong caveat that average and marginal tax rates can be influenced by economic performance, I look at change from 2007 to

[96] Cyprus, Greece, Iceland, Ireland, Portugal, Slovakia, Slovenia, and Spain.
[97] The standard deviation of top marginal tax rates has risen from 10 percent to 14.5 percent.
[98] OECD, Statistics OECD, Taxing Wages: Comparative Tables, 2000–2012.

2012 in the net average and net marginal tax rates faced by a single adult earning the average income and by a parent of two earning the average income and married to someone earning 67 percent of the average income. In 11 of 29 countries, all four metrics showed declining taxes, and in nine countries all four metrics showed rising taxes. The other nine were mixed. Table 2-5 lists the countries in each category.

Among the reasons to be cautious drawing conclusions from the Taxing Wages summary measures is that they do not correlate as expected with other data. On both an annual and five-year basis, revenue rate change is uncorrelated with Taxing Wages tax changes. Controlling for GDP growth, one of the four measures has good explanatory power on the revenue rate,[99] but the other three are neither economically nor statistically significant. And two of the "usual suspects" for austerity, Greece and Portugal, give mixed results despite a steady diet of tax increases and higher top marginal rates recorded in European Commission publications,[100] perhaps indicating that falling incomes can overwhelm rising tax rates.

Spending Stimulus, Tax Austerity

Comparing changes in tax rates and core government spending reveals asymmetries in policymaking. Tax increases occurred much more than tax cuts. Stimulus efforts changed spending, but rarely taxes, at least as measured by VAT or top income tax rates, while fiscal consolidation often increased those key tax rates.

During periods of fiscal consolidation, there was a strong association between rising tax rates and lower core spending. But the reverse was not true in fiscal expansion. Of 19 cases in EU countries in which core spending fell at least 1 percent of GDP, the VAT rate rose in 12 cases.[101] By contrast, there were 35 fiscal expansion episodes in which core spending grew at least 1 percent of GDP, and only one of those was accompanied by a VAT decrease. Top marginal tax rates were also asymmetric: they were about twice as likely to be raised in the same year as a core spending cut as they were to be lowered when spending rose.[102]

When fiscal policies have changed during recessions, the change is more likely to be "austere" in tax rates but "stimulative" in spending. In countries with complete data, there were 45 country-years of falling gross domestic product (GDP). In those years there were 12 VAT increases and 6 top marginal tax rate increases, but only 5 VAT decreases and 4 top marginal tax rate decreases. But out of the 45 recession years, core spending rose 28 times and fell just 17 times.

[99]Regressing annual revenue rate change on GDP growth and change in net average tax rate for a single adult earning the average income yields a significant correlation. The correlation is robust to country fixed effects, and is not diminished by the inclusion of the other *Taxing Wages* measures I use. If one does not control for GDP growth, however, the correlation is insignificant.

[100]European Commission, "Tax Reforms in EU Member States," and Eurostat, *Taxation Trends in the European Union: 2013 Edition*.

[101]Specifically, the annual average rate rose, although in some cases the rate increase took place during the previous year.

[102]This is true for the 54 EU cases, and also when non-EU countries, for which I lack VAT data, are included.

Taking the full 2007–2012 period together, out of 29 countries, 18 saw increases in government revenue's share of GDP and 21 increased core government spending's share of GDP. The share of GDP going to government transfer spending increased in all 29 countries and by double digits in 24 countries, so transfers are a poor candidate for finding widespread austere spending policies. While tax austerity shows up frequently in every measure, spending austerity is elusive outside a well-defined set of crisis countries on Europe's periphery.

Chapter 3: Timing and Composition of European Austerity

Matthew Melchiorre[103]

The term "austerity" is bandied about a lot in politics and the media these days. But what does it mean? Almost every European country has declared that it has entered an age of austerity, yet European national government budgets have taken very different turns, and these different sets of policies have led to different outcomes in economic performance.

TABLE 3–1

Austerity Program Implementation Schedule, by Country

Country	Austerity Begins	Nearest Quarter
Austria	January 2011	Q1 2011
Belgium	January 2012	Q1 2012
Bulgaria	July 2009	Q3 2009
Cyprus	July 2011	Q3 2011
Czech Republic	January 2011	Q1 2011
Denmark	January 2010	Q1 2010
Estonia	January 2009	Q1 2009
Finland	January 2012	Q1 2012
France	June 2010	Q3 2010
Germany	December 2008	Q1 2009
Greece	February 2010	Q1 2010
Hungary	May 2009	Q2 2009
Ireland	January 2011	Q1 2011
Italy	July 2010	Q3 2010
Latvia	January 2009	Q1 2009
Lithuania	January 2009	Q1 2009
Luxembourg	January 2011	Q1 2011
Malta	January 2011	Q1 2011
Netherlands	January 2011	Q1 2011
Norway	n/a	n/a
Poland	January 2011	Q1 2011
Portugal	May 2011	Q2 2011
Romania	July 2010	Q3 2010
Slovakia	January 2011	Q1 2011
Slovenia	June 2011	Q3 2011
Spain	February 2010	Q1 2010
Sweden	January 2009	Q1 2009
Switzerland	January 2013	Q1 2013
United Kingdom	June 2010	Q3 2010

Source: Data provided by individual countries and various news media articles.

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[103]Matthew Melchiorre is the 2012–2013 Warren T. Brookes Journalism Fellow at the Competitive Enterprise Institute.

Analyses elsewhere, including other chapters in this report, typically measure austerity for different European countries from a single base year.[104] This can be imprecise for two reasons. First, not all European countries have implemented austerity programs at the same time. Second, "austerity" meant different sets of policies in each country. Therefore, many measurements of austerity capture the time before some countries began making budget cuts.

This chapter corrects the flawed portrayal of austerity that has become the conventional wisdom. It measures austerity and its effects from the time austerity was announced in each country, not from a single base year. Its analysis of individual country budget data and austerity programs finds that, contrary to the conventional wisdom, public spending has not necessarily decreased as a result of austerity and social spending has not borne the brunt of government spending cuts—in fact, it has actually increased in some countries.

TABLE 3–2

Austerity Categories and Country Groups

Group	Expenditures	Taxation	Countries
1	Decreased	Decreased	Bulgaria, Ireland, Latvia, Lithuania
2	Decreased	Increased	Estonia, Greece, Hungary, Portugal
3	Increased	Decreased	Sweden
4	Increased	Increased	Belgium, Czech Republic, France, Germany, Malta, Romania, Slovakia, Spain, United Kingdom
5	Decreased	Steady	Slovenia
6	Increased	Steady	Austria, Denmark, Finland, Luxembourg
7	Steady	Increased	Italy, Poland
8	Steady	Decreased	Netherlands
9	Steady	Steady	Cyprus

Source: See Tables 3–3 and 3–4.

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Austerity in Europe Is More Nuanced Than Is Commonly Believed

While many countries label their policies with the common term "austerity," their actions are far from similar. In Europe, four countries cut both spending and taxes after announcing austerity while nine others did just the opposite. The latter option—increasing both spending and taxes—was the form of "austerity" most popular among governments. Additionally, four countries decreased spending while increasing taxes while another four countries increased spending and

[104]For a sampling of the conventional wisdom on austerity and of analyses that use blanket base-year measurements, see Dylan Matthews, "Yes, Europe Really Is in the Throes of Austerity," *The Washington Post*, June 5, 2013, http://www.washingtonpost.com/blogs/wonkblog/wp/2013/06/05/yes-europe-really-is-in-the-throes-of-austerity/ (accessed October 11, 2013); Paul Krugman, "Austerity Europe," *The New York Times*, February 23, 2013, http://krugman.blogs.nytimes.com/2013/02/23/austerity-europe-2/ (accessed October 11, 2013); Brad Plumer, "Yes, There's Been Austerity in Europe," *The Washington Post*, May 8, 2012, http://www.washingtonpost.com/blogs/wonkblog/post/yes-theres-been-austerity-in-europe/2012/05/08/gIQAQ1NsAU_blog.html (accessed October 11, 2013); and Paul Krugman, "Austerity and Growth," *The New York Times*, February 18, 2012, http://krugman.blogs.nytimes.com/2012/02/18/austerity-and-growth/?_r=1 (accessed October 11, 2013).

left taxation unchanged. There are five other combinations of changes to spending and taxation as well, making a grand total of nine different types of "austerity" throughout Europe.

All nine categories of austerity programs and the countries that implemented them are listed in Table 3-2. Countries that qualify for an increase or decrease in either spending or taxation are those that experienced a change of at least a full percentage point in either measurement relative to its pre-austerity level for at least one year after austerity's implementation.[105] Otherwise, the measurement is listed as "steady."[106]

Table 3-3 shows the percentage change in government nominal expenditures by country relative to the respective pre-austerity level during each year of each country's austerity program. Expenditure decreases are marked in red. Steady values are marked in blue.

Table 3-4 measures the percentage change in the total tax burden during each year of each country's austerity program, relative to each country's pre-austerity level.[107] However, this does not measure the deadweight economic loss created by higher taxes—and thereby probably underestimates the economic impact of tax increases—but it does measure how much wealth the public sector is taking out of the economy, and does so in a consistent way that is comparable across countries.

[105]Defined as implementation of "austerity," "budget consolidation," or "fiscal retrenchment" that includes at least two proposed significant fiscal changes to social services, government administration, or the discretionary budget. In cases where a country's austerity program did not begin within the first annual quarter, this report measures each post-austerity year in four-quarter increments from austerity's implementation. For example, post-austerity year one or a country implementing austerity in the third quarter of 2009 would encompass Q3 2009 through Q2 2010.

[106]Some countries began implementing austerity much later than others, so spending and revenue data for these countries are not available for later years. Switzerland and Norway are excluded from this analysis because the former began implementing fiscal consolidation in January 2013, which yielded a mere two quarters of measurements, while the latter has yet to announce an austerity program at all. For categorization purposes, decreases are weighed more heavily than increases because austerity programs in which real cuts to spending, taxation, or both took place were also often accompanied by deregulation (the effect of which is not captured by spending and revenue statistics, so the weighting compensates for this underestimation in austerity's magnitude). To qualify for an "increased" categorization, the country must meet two conditions: (1) the number of post-austerity years of increased values must be greater than the number of post-austerity years of decreased values, and (2) the total net change for all post-austerity years must be positive and greater than 1.00 percent of the pre-austerity level.

[107]The European Commission's most recent tax report, *Taxation Trends in the European Union*, the most comprehensive set of tax reports for EU countries, only provides implicit tax burden data through 2011. Comparable data for each country's tax burden is only available through 2011, so this analysis uses revenues/GDP as a proxy for the total tax burden. European Commission, *Taxation Trends in the European Union: Data for the EU Member States, Iceland and Norway*, 2013 edition (Luxembourg: Eurostat Statistical Books, 2013), http://ec.europa.eu/taxation_customs/resources/documents/taxation/gen_info/economic_analysis/tax_structures/2013/report.pdf (accessed October 11, 2013).

Changes in Post-Austerity Policy-Driven Spending Are Largely the Same as Changes in Total Spending

Taking into account that unemployment benefits and aid to the poor automatically increase during economic downturns, Tables 3-5 and 3-6 show the country-by-country change in policy-driven spending[108] and the new austerity classifications. Parsing out the effect of automatic stabilizers is an important way to look at the austerity data, as the remaining change in government expenditures shows whether governments are actively pursuing more or less discretionary spending, even after declaring the beginning of austerity.

It is useful to separate government spending into two categories:

1) Spending already agreed to automatically adjust under changing economic circumstances; and
2) New changes in spending that include new programs, and existing programs that were either increased or cut due to government action.

The former is commonplace among advanced economies and is perhaps less indicative of whether austerity, however defined, is taking place, while the latter indicates whether policymakers are actively pursuing more or less spending.

Only two significant changes to the original austerity classifications occurred: Romania, which increased total spending but decreased policy-driven spending, moved from group 4 to group 2. And the Netherlands, which left total spending unchanged but cut policy-driven spending, moved from group 8 (thereby eliminating this austerity type entirely) to group 1.

[108]Policy-driven spending is a term that represents total general government expenditure minus spending on automatic stabilizers such as unemployment benefits, food stamps, and other income transfer programs that experience an increase in their use and spending during a recession without needing prior authorization. Excluding automatic stabilizers from total spending indicates the amount of spending that a government is expressly authorizing.

TABLE 3–3

Changes in Government Expenditures, Post-Austerity

NOMINAL AND SEASONALLY UNADJUSTED EXPENDITURES IN FOUR-QUARTER PERIODS FOLLOWING AUSTERITY AS A RATIO OF THE SUM OF EXPENDITURES IN THE FOUR QUARTERS PRECEDING AUSTERITY

Expenditure decrease | Steady value

Group	Country	Austerity Enacted	Years Post-Austerity 1	2	3	4
1	Bulgaria	Q3 2009	-5.21%	-9.28%	-5.96%	
	Ireland	Q1 2011	-25.97%	-33.43%		
	Latvia	Q1 2009	-9.48%	-12.42%	-13.04%	-9.16%
	Lithuania	Q1 2009	-0.92%	-3.03%	-0.83%	-1.62%
2	Estonia	Q1 2009	-5.14%	-9.51%	-5.14%	6.91%
	Greece	Q1 2010	-8.33%	-13.09%	-14.91%	
	Hungary	Q2 2009	-5.42%	-5.58%	-4.87%	
	Portugal	Q2 2011	-5.39%			
3	Sweden	Q1 2009	-6.67%	6.47%	15.12%	23.39%
4	Belgium	Q1 2012	4.61%			
	Czech Republic	Q1 2011	2.15%	3.36%		
	France	Q3 2010	1.64%	3.76%		
	Germany	Q1 2009	5.55%	9.22%	7.71%	9.12%
	Malta	Q1 2011	4.01%	11.71%		
	Romania	Q3 2010	-0.55%	3.32%		
	Slovakia	Q1 2011	0.62%	1.63%		
	Spain	Q1 2010	0.15%	-0.96%	1.84%	
	United Kingdom	Q3 2010	4.43%	6.14%		
5	Slovenia	Q3 2011	-4.34%			
6	Austria	Q1 2011	0.82%	5.30%		
	Denmark	Q1 2010	4.99%	6.70%	12.09%	
	Finland	Q1 2012	4.42%			
	Luxembourg	Q1 2011	4.09%	11.55%		
7	Italy	Q3 2010	0.13%	0.39%		
	Poland	Q1 2011	-0.32%	0.19%		
8	Netherlands	Q1 2011	-0.43%	0.41%		
9	Cyprus	Q3 2011	-0.58%			

Source: Eurostat, quarterly non-financial accounts for general government, 2006–2012, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (accessed June 12, 2013).

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TABLE 3–4

Changes in Government Revenue/GDP, Post-Austerity

PERCENT CHANGE IN REVENUE AS A PERCENT OF GDP, FROM FOUR QUARTERS PRIOR TO AUSTERITY TO FOUR-QUARTER PERIODS FOLLOWING AUSTERITY

Expenditure decrease | Steady value

Group	Country	Austerity Enacted	Years Post-Austerity 1	2	3	4
1	Bulgaria	Q3 2009	-9.29%	-15.32%	-9.10%	
	Ireland	Q1 2011	-1.05%	-1.79%		
	Latvia	Q1 2009	-2.49%	1.26%	0.03%	1.06%
	Lithuania	Q1 2009	4.41%	3.58%	-1.80%	-3.37%
2	Estonia	Q1 2009	7.49%	11.34%	7.49%	9.57%
	Greece	Q1 2010	5.93%	10.54%	16.66%	
	Hungary	Q2 2009	1.79%	24.57%	13.55%	
	Portugal	Q2 2011	6.80%			
3	Sweden	Q1 2009	0.02%	-3.05%	-5.03%	-5.02%
4	Belgium	Q1 2012	2.79%			
	Czech Republic	Q1 2011	2.33%	3.05%		
	France	Q3 2010	0.45%	2.99%		
	Germany	Q1 2009	2.55%	-1.01%	1.23%	2.62%
	Malta	Q1 2011	1.95%	4.85%		
	Romania	Q3 2010	8.74%	8.01%		
	Slovakia	Q1 2011	2.98%	2.43%		
	Spain	Q1 2010	4.36%	1.78%	3.77%	
	United Kingdom	Q3 2010	1.34%	6.89%		
5	Slovenia	Q3 2011	-0.60%			
6	Austria	Q1 2011	-0.11%	0.91%		
	Denmark	Q1 2010	-0.64%	0.65%	0.13%	
	Finland	Q1 2012	-0.41%			
	Luxembourg	Q1 2011	-0.98%	0.45%		
7	Italy	Q3 2010	1.27%	3.32%		
	Poland	Q1 2011	2.46%	2.12%		
8	Netherlands	Q1 2011	-1.60%	0.46%		
9	Cyprus	Q3 2011	-0.82%			

Source: Eurostat, quarterly non-financial accounts for general government, 2006–2012, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (accessed June 12, 2013).

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TABLE 3–5

Austerity Categories and Country Groups, Policy-Driven Spending

Group	Expenditures	Taxation	Countries
1	Decreased	Decreased	Bulgaria, Ireland, Latvia, Lithuania, Netherlands
2	Decreased	Increased	Estonia, Greece, Hungary, Portugal, Romania
3	Increased	Decreased	Sweden
4	Increased	Increased	Belgium, Czech Republic, France, Germany, Malta, Slovakia, Spain, United Kingdom
5	Decreased	Steady	Slovenia
6	Increased	Steady	Austria, Denmark, Finland, Luxembourg
7	Steady	Increased	Italy, Poland
8	Steady	Steady	Cyprus

Source: See Tables 3–6 and 3–8. heritage.org

Table 3-6 shows the same information as Table 3-3, but measures changes in policy-driven spending instead of total spending.

Social-Spending Cuts Have Not Been a Central Feature to European Austerity Programs

Contrary to popular belief,[109] social benefits and automatic stabilizers have not been the main targets of spending cuts, but neither have they been the main component of increased spending.

Table 3-7 shows the composition of cuts or increases[110] in government expenditure since austerity began in each country, by austerity grouping. Changes in expenditure are divided into two categorizations: (1) policy-driven, meaning changes in spending that must be authorized by policymakers before taking place, and (2) social, representing the change in spending on social programs and income-transfer schemes that do not require prior policymaker approval.

[109]For media claims of significant cuts to social benefits, see Paul Taylor, "After the Great Recession, the Great Regression," *The New York Times*, February 7, 2011, http://www.nytimes.com/2011/02/08/business/global/08inside.html?_r=0 (accessed October 11, 2013); "Before Austerity, Sizeable Social Benefits," *The Washington Post*, April 24, 2011, http://www.washingtonpost.com/world/before-austerity-sizable-social-benefits/2011/04/24/AF22IvdE_graphic.html (accessed October 11, 2013); and Jeff Madrick, "How Austerity Is Killing Europe," *The New York Review of Books*, January 6, 2012, http://www.nybooks.com/blogs/nyrblog/2012/jan/06/europe-cutting-hope/ (accessed October 11, 2013). Madrick is especially incorrect when he claims that Ireland paid for its bank bailouts by cutting social spending. As Table 6 shows, Irish austerity has actually entailed an *increase* in social spending. David Francis, "Euro Crisis Forces Deep Cuts in Social Benefits," *The Fiscal Times*, January 1, 2010, http://www.thefiscaltimes.com/Articles/2010/06/02/Euro-Crisis-Forces-Deep-Cuts-in-Social-Benefits.aspx#page1 (accessed October 11, 2013).

[110]Negative percentage values indicate that the change was opposite to the change in total spending. For example, Estonia cut total spending since austerity's implementation and shows a negative percentage value representing the portion of the spending cuts that contained social spending. Therefore, Estonia's total social spending actually increased despite its total spending having decreased. Percentage values above 100 percent indicate that the change was greater than the total net spending change.

TABLE 3–6

Changes in Government Expenditures, Post-Austerity

NOMINAL AND SEASONALLY UNADJUSTED POLICY-DRIVEN EXPENDITURES IN FOUR-QUARTER PERIODS FOLLOWING AUSTERITY AS A RATIO OF THE SUM OF POLICY-DRIVEN EXPENDITURES IN THE FOUR QUARTERS PRECEDING AUSTERITY

Expenditure decrease | Steady value

Group	Country	Austerity Enacted	Years Post-Austerity 1	2	3	4
1	Bulgaria	Q3 2009	-9.38%	-5.59%	-5.88%	
	Ireland	Q1 2011	-27.48%	-35.58%		
	Latvia	Q1 2009	-7.35%	-13.91%	-12.18%	-8.43%
	Lithuania	Q1 2009	-0.54%	-2.01%	-1.78%	-1.92%
	Netherlands	Q1 2011	-1.83%	-1.69%		
2	Estonia	Q1 2009	-6.47%	-10.58%	-6.47%	6.21%
	Greece	Q1 2010	-9.13%	-13.47%	-13.92%	
	Hungary	Q2 2009	-5.23%	-5.37%	-4.55%	
	Portugal	Q2 2011	-5.17%			
	Romania	Q3 2010	-4.36%	-0.20%		
3	Sweden	Q1 2009	-7.59%	4.95%	13.64%	21.92%
4	Belgium	Q1 2012	4.65%			
	Czech Republic	Q1 2011	1.40%	2.64%		
	France	Q3 2010	1.58%	3.58%		
	Germany	Q1 2009	5.11%	8.78%	6.38%	7.34%
	Malta	Q1 2011	4.27%	12.12%		
	Slovakia	Q1 2011	-0.11%	1.77%		
	Spain	Q1 2010	0.58%	-0.33%	3.61%	
	United Kingdom	Q3 2010	4.47%	6.05%		
5	Slovenia	Q3 2011	-4.90%			
6	Austria	Q1 2011	0.30%	5.23%		
	Denmark	Q1 2010	5.14%	7.00%	12.54%	
	Finland	Q1 2012	4.39%			
	Luxembourg	Q1 2011	3.05%	10.19%		
7	Italy	Q3 2010	0.44%	0.77%		
	Poland	Q1 2011	-0.58%	-0.57%		
8	Cyprus	Q3 2011	-0.49%			

Note: Policy-driven expenditures equals total general government expenditures minus transfers.
Source: Eurostat, quarterly non-financial accounts for general government, 2006–2012, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (accessed August 5, 2013).

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TABLE 3–7

Composition of Austerity

MEDIAN COMPOSITION OF SPENDING CHANGE ACROSS FOUR-QUARTER PERIODS FOLLOWING AUSTERITY

Group	Country	Overall Spending Change	Composition	
			Policy-Driven	Social
1	Bulgaria	CUT	88.37%	11.63%
	Ireland	CUT	100.18%	-0.18%
	Latvia	CUT	81.97%	18.03%
	Lithuania	CUT	84.74%	15.26%
	Average		*88.81%*	*11.19%*
	Median		*86.56%*	*13.44%*
2	Estonia	CUT	109.41%	-9.41%
	Greece	CUT	94.14%	5.86%
	Hungary	CUT	85.90%	14.10%
	Portugal	CUT	81.92%	18.08%
	Average		*92.84%*	*7.16%*
	Median		*90.02%*	*9.98%*
3	Sweden	INCREASE	81.61%	18.39%
4	Belgium	INCREASE	80.70%	19.30%
	Czech Republic	INCREASE	59.67%	40.33%
	France	INCREASE	79.75%	20.25%
	Germany	INCREASE	68.76%	31.24%
	Malta	INCREASE	98.65%	1.35%
	Romania	INCREASE	-371.44%	471.44%
	Slovakia	INCREASE	37.70%	62.30%
	Spain	INCREASE	176.07%	-76.07%
	United Kingdom	INCREASE	93.45%	6.55%
	Average		*50.00%*	*64.08%*
	Median		*79.75%*	*20.25%*
5	Slovenia	CUT	103.37%	-3.37%
6	Austria	INCREASE	57.18%	42.82%
	Denmark	INCREASE	95.54%	4.46%
	Finland	INCREASE	88.94%	11.06%
	Luxembourg	INCREASE	66.18%	33.82%
	Average		*76.96%*	*23.04%*
	Median		*77.56%*	*22.44%*
7	Italy	INCREASE	202.59%	-102.59%
	Poland	CUT	220.54%	-120.54%

Note: Data are nominal and seasonally unadjusted.
Source: Eurostat, quarterly non-financial accounts for general government, 2006–2012, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (accessed August 5, 2013).

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The two austerity groupings that are often derided in the media for their harshness have actually had very low levels of social-spending cuts. Austerity in countries that cut both spending and taxes (group 1) has been composed of roughly 87 percent policy-driven cuts and 13 percent

social-spending cuts.[111] Meanwhile, austerity in countries that cut spending but increased taxes (group 2) has been composed of roughly 90 percent policy-driven cuts and 10 percent social-spending cuts (with Estonia actually having increased social spending and decreased total spending). In countries that increased both taxes and spending (group 4), social spending comprised less than one-quarter of that increase, with the bulk going to higher spending on discretionary programs.

Different Forms of Austerity Have Resulted in Different Rates of Economic Growth

This report assesses economic growth for the six years following austerity's implementation in each European country, using a combination of GDP growth rates through the fourth quarter of 2012, as reported by the European Union's statistics agency, Eurostat, and projected growth rates through 2017 from the International Monetary Fund.[112] Median post-austerity growth rates for each country were calculated,[113] and those figures were averaged by austerity group.

Table 3-8 shows the results of this analysis for all austerity groupings containing at least four countries (and therefore large enough for their averages to be meaningful).[114]

TABLE 3–8

Average Median Post-Austerity Growth Rates by Austerity Group

Group	Expenditures	Taxation	Average Median 6-Year Growth Rate
1	Decreased	Decreased	2.65%
2	Decreased	Increased	-0.32%
4	Increased	Increased	1.46%
6	Increased	Steady	1.40%

Notes: GDP growth is the median growth and projected growth rate of the six four-quarter periods following the introduction of austerity. Data after Q4 2012 uses pro-rated quarterly Eurostat 2012 GDP values by IMF projected annual growth rates. Data are nominal and seasonally unadjusted.
Sources: Eurostat, Quarterly National Accounts, 2006–2013, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (accessed June 12, 2013), and International Monetary Fund, "World Economic Outlook: April 2013," gross domestic product, constant prices, percent change, 2013–2018, http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx (accessed October 18, 2013).

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[111] According to median values, which is a better statistical aggregator than simple averages when values diverge significantly and have different signs.

[112] The IMF reported GDP figures in annual denominations. Therefore, each 2012-quarter GDP value from Eurostat is adjusted by the annual change in GDP as projected by the IMF. These calculations resulted in quarterly GDP value projections for the period 2013–2017.

[113] Using median growth rates prevents the growth data from being skewed in misleading ways by extreme transitory values. For example, several countries experienced severe economic contraction during the first year of their austerity programs, because austerity, carried out properly, entails retrenchment for both the public and private sectors, and therefore acts as a sudden but temporary shock to the economy as markets clear out inefficiencies to make way for more productive activities. Thus, if the growth rate for the first year after the implementation of austerity was highly negative and subsequent years were positive, using a six-year growth rate average would bias the average down. This report seeks to measure the results of austerity, and as such, must allow time for markets to complete their clearing process.

[114] Austerity groupings with fewer than four countries are unlikely to be representative in any meaningful sense. For example, the average median growth rate for Group 7, a two-country group of countries that implemented "austerity" consisting of steady expenditures and increased taxes, was 1.32 percent, but its component countries' median growth rates were 0.15 percent for Italy and 2.46 percent for Poland. Therefore, the 1.32 percent value is not an accurate representation of growth within the austerity group. There was too great a divergence between country growth rates and too small a sample size to identify and adjust the results for the outlier. Nonetheless, no austerity grouping of any size, besides Group 1, which decreased both expenditures and taxes, managed to achieve an average median six-year growth rate above 2 percent.

TABLE 3–9

Average Median Post-Austerity Growth Rates by Austerity Group, Policy-Driven Spending

Group	Expenditures	Taxation	Average Median 6-Year Growth Rate
1	Decreased	Decreased	2.33%
2	Decreased	Increased	0.13%
4	Increased	Increased	1.40%
6	Increased	Steady	1.40%

Notes: GDP growth is the median growth and projected growth rate of the six four-quarter periods following the introduction of austerity. Data after Q4 2012 uses pro-rated quarterly Eurostat 2012 GDP values by IMF projected annual growth rates. Data are nominal and seasonally unadjusted.
Sources: Eurostat, Quarterly National Accounts, 2006–2013, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database, (accessed June 12, 2013), and International Monetary Fund, "World Economic Outlook: April 2013," gross domestic product, constant prices, percent change, 2013–2018, http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx (accessed October 18, 2013).

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The only austerity group that experienced an average median GDP growth rate above 2 percent—generally considered the standard threshold for healthy economic growth—was group 1, which cut both spending and taxes. The countries in group 4, which implemented austerity programs of spending and tax increases, grew at an average median growth rate of less than 1.5 percent.[115]

Table 3-9 considers the austerity groupings based on policy-driven spending instead of total spending. The results are very similar to those in Table 3-8. Group 1 is the only group of countries to maintain a growth rate above 2 percent, though it is slightly lower than when only considering total spending.[116]

Conclusion

A careful examination of each European country's taxing and spending changes since its announcement of austerity reveals that "austerity" takes many different forms. More often than not, austerity has not applied to the public sector through reduced spending and/or taxes. Instead,

[115]Group 1 experienced a growth rate that was statistically significant at the 10 percent confidence level while groups 4 and 6 had the same at the 95 percent confidence level. Group 2's growth rate was not statistically significant at any acceptable level of confidence (90 percent, 95 percent, and 99 percent). Statistical significance is defined as being 90 percent–95 percent confident that the actual growth rate is not equal to zero and any variation is not due to simple random chance.

[116]All groups, except for group 2, experienced growth rates that were statistically significant at the 95 percent confidence level. As before, group 2 experiencing a zero percent growth rate could not be ruled out with any acceptable level of confidence (90 percent, 95 percent, and 99 percent).

[14]In an effort to reduce its deficit, the Hungarian government effectively nationalized the country's private pensions on February 1, 2011. Media outlets, such as *The Economist*, estimated the revenue gained through obtaining private pension assets at roughly €10 billion (off-balance sheet). Because the nationalization amounts to a 100 percent tax on private pension disbursements from Q1 2011, the €10 billion figure was divided equally during the five remaining quarters of austerity measurement and added to the figures for general government revenue. Poland also effectively nationalized its private pension system, to occur over 10 years beginning in September 2013. This was not factored into revenue measurements because the third year after austerity's implementation, which is the first year that this measure impacts, cannot be measured until Q4 2013 data is available. "When Solidarity Is Obligatory," *The Economist*, November 25, 2010, http://www.economist.com/blogs/easternapproaches/2010/11/hungarian_pensions (accessed October 11, 2013).

belt-tightening in Europe has mostly occurred in the private sector, falling on businesses and individuals who trim their budgets for recession while facing increased taxation.

Contrary to popular belief, allowing the public sector to share in the austerity that its private-sector counterpart endures by way of recession need not necessitate gutting the social safety net. Of the countries that did not shield the public sector from austerity measures, social spending comprised a small fraction of the overall cuts. These countries also experienced the highest rates of economic growth post-austerity.

In Europe, reducing spending and taxation during recession—austerity for both the public and private sectors—has led to the best economic results.

Chapter 4: Growth Effects of Taxation and Spending

Salim Furth, PhD

Does the data from the past several years confirm or refute previous economic research? As Alesina and de Rugy show in Chapter 1, tax increases are empirically more harmful to growth than spending cuts. Using the data presented in Chapter 2, I find that recent history reaffirms the research on fiscal consolidation.

Two common fallacies have cropped up in analyzing the poor growth record of the past several years. The first is averaging: The analyst takes the average policy and average growth record across all European countries and concludes that the former causes the latter. But the averages mask wide and important dispersion. The second fallacy is to lump tax increases and spending cuts together, implicitly assuming that the two have the same effect, despite an extensive literature to the contrary.[117]

This chapter explores a few of the simpler ways in which the data presented in this report can be used.

Stimulus

Determinants of Stimulus. It is broadly accepted that fiscal policy is responsive to economic conditions. A country that believes it is facing a deeper recession will enact a larger stimulus. But fiscal policy is also responsive to the fiscal situation. The 2008 interest rate spread and pre-crisis structural balance, both of which reflect fiscal flexibility, can explain 57 percent of the size of planned stimulus packages. Countries with deficits under control and low borrowing costs enacted larger stimulus policies.

Examining the portion of the stimulus unexplained by fiscal conditions,[118] the countries that had early crises stand out: Hungary, Iceland, and Ireland all planned large consolidations instead of expansions. Switzerland enacted much less stimulus than its strong fiscal position could have supported. The Scandinavian countries, Japan, and Canada were also on the low end of stimulus efforts. The largest stimulus plans were in Australia, Korea, and the U.S. Among European countries, Greece and Spain had the highest residuals, indicating that their planned fiscal expansions were larger than they could afford.

[117]Menzie Chinn provides examples of both fallacies. His analyses are fine as far as they go, but would be inappropriate to use, for example, as evidence on the effects of spending cuts. Menzie Chinn, "Lehman Plus Five," *Econbrowser*, September 17, 2013, http://www.econbrowser.com/archives/2013/09/lehman_plus_fiv.html (accessed September 25, 2013), and Menzie Chinn, "GDP Growth and the Change in the Cyclically Adjusted Budget Balance," *Econbrowser*, September 18, 2013, http://www.econbrowser.com/archives/2013/09/gdp_growth_and.html (accessed September 25, 2013).

[118]The residual of a regression of planned stimulus on interest rate, pre-crisis balance, and euro membership.

The Growth Effects of Stimulus. One method of disentangling the causal knot and estimating the effect of fiscal policy on contemporaneous or subsequent growth is to use instrumental variables, an econometric technique. Fiscal space—the ability to borrow—is a good instrument for subsequent stimulus, so one can use interest rate spread (averaged over 2004 to 2006) and structural balance (2006–2007)[119] as instruments for stimulus spending in 2009–2010.[120]

Contemporaneous growth from 2007 to 2010 shows very little impact of total stimulus on growth (multiplier = 0.4) when instrumenting for the OECD plans of stimulus.[121] Future growth, from 2010 to 2012, has a similar relationship to the instrumental variables: The multiplier is 0.5, and would be 0.1 in the absence of outlier Greece.[122] These estimates have a reasonable degree of precision by the standards of the fiscal multiplier literature, with standard errors below 0.5. Narrowing consideration to spending stimulus only,[123] the contemporaneous multiplier is 0.6 and the future multiplier is 0.7.

Unfortunately, while the instruments predict stimulus spending plans reasonably well, they fail to predict structural deficits, core spending growth, and planned tax stimulus. This may reflect the ways that countries departed from their stimulus plans or may merely indicate that the instruments are a poor measure of fiscal space.

However, fiscal space may plausibly affect growth through avenues other than stimulus. Thus, it might be more appropriate to directly investigate the impact of pre-crisis fiscal responsibility and space, instead of implicitly assuming that structural balance and interest rate spread only impact subsequent GDP growth through stimulus. I find that structural balance in 2006–2007 has a significant positive association with growth from 2007 to 2012, but that the interest rate spread has no effect.

In addition to using the amount of the stimulus, one can investigate its composition, taking the ratio of spending stimulus to total stimulus.[124] Spending-focused stimulus during 2009 and 2010 is loosely associated with lower growth.

A simple regression of contemporaneous growth (2007–2010) on the OECD plans of tax and spending stimulus show that both multipliers are less than one, and that the spending multiplier is

[119]I choose the earlier dates for interest rate spread to avoid contaminating the data with early warnings of the crisis. The choice of dates does not significantly impact the results.
[120]Public debt is another potential instrument but has less predictive power, probably reflecting the wide range of debt tolerance levels across countries.
[121]These regressions are two-stage least squares with robust standard errors. The first stage has an R^2 of 0.36.
[122]I also used change in structural balance as a dependent variable, but found that the first stage had an R^2 below 0.1. Those regressions estimate a contemporaneous multiplier of 1.4 and a future multiplier of 2.6, although neither is statistically significant and both fall by half when Greece is excluded. Standard errors are above 1.6.
[123]Here, I am on thinner theoretical ice, since tax stimulus is an omitted variable. For the record, the residuals from the second stage are correlated at 0.36 with the measure of tax stimulus, and fiscal space is a much better predictor of spending than of tax stimulus.
[124]Some countries planned spending stimulus but tax austerity at the same time, or vice versa. I hand-coded these at 100 percent and 0 percent spending, respectively. Countries that planned stimulus in neither area are excluded here.

significantly less than one. However, this approach cannot be interpreted causally, because economic conditions and fiscal flexibility impact the size of stimulus measures.

Another approach is to control for the total amount of the stimulus, and assume that its composition reflects policy preferences.[125] Estimates are imprecise, but a stimulus plan composed just 20 percent of extra spending is associated with about equal contemporaneous growth and half a standard deviation higher subsequent (2010–2012) growth than a stimulus plan composed of 80 percent of extra spending.[126] This is consistent with the idea that government spending crowds out private economic activity less in the short run and in recessions.

It appears that spending stimulus may contribute to a rising interest rate spread, although estimates are again statistically imprecise.[127] For a stimulus of a given size, 60 percentage points more from spending is associated with 180 basis points in the growth of the spread, or seven-tenths of a standard deviation. The effect is somewhat stronger among euro countries and is negligible among non-euro countries.

Austerity

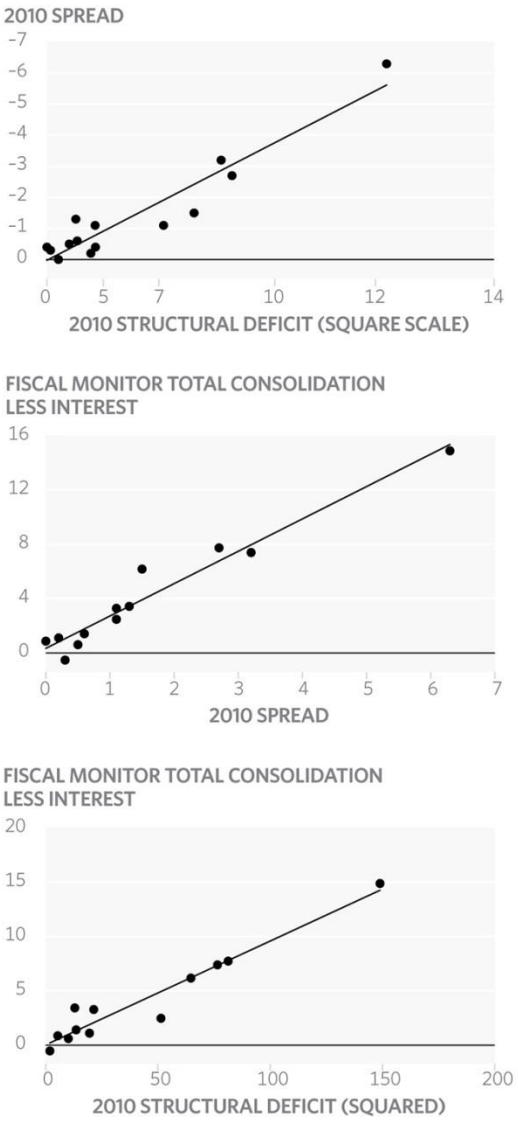
Fiscal Consolidation and Bond Market Vigilantes. Like stimulus, fiscal consolidation was primarily responsive to short-term fiscal flexibility. In a multiple regression, interest rate spread growth, structural balance, and euro membership were all significant predictors of fiscal consolidation as measured by the IMF's Fiscal Monitor. Those three factors explained 87 percent of the variation in fiscal consolidation undertaken by 2012 within the EU and 67 percent of the variation in a broader sample. Within the EU, the European Commission's "S2" measure of long-term fiscal sustainability[128] was significant, but added little explanatory power.

Some economists have worried that austerity is driven by self-fulfilling pessimism in the bond market and is disconnected from economic fundamentals. Paul De Grauwe and Yuemei Ji raise this question in two papers.[129]

[125]The correlation between size and spending's share of stimulus plans is just –0.16.
[126]Half a standard deviation of 2010–2012 growth is about 2 percent over the two-year period. The estimate is economically but not statistically significant (p=0.17).
[127]Ten-year borrowing spread versus Germany. Estimates are similar in three specifications, with p-values between 0.12 and 0.18.
[128]European Commission, "Fiscal Sustainability Report 2012," *European Economy*, No. 8 (December 2012), http://ec.europa.eu/economy_finance/publications/european_economy/2012/fiscal-sustainability-report_en.htm (accessed October 11, 2013).
[129]Paul De Grauwe and Yuemei Ji, "Self-Fulfilling Crises in the Eurozone: An Empirical Test," June 2012, Centre for European Policy Studies *Working Paper* No. 366, http://aei.pitt.edu/35633/1/WD_No_366_PDG_%26_YJ_Empirical_Test_Fragility_Eurozone.pdf (accessed August 22, 2013), and Paul De Grauwe and Yuemei Ji, "Panic-Driven Austerity in the Eurozone and Its Implications," February 21, 2013, VoxEU, http://www.voxeu.org/article/panic-driven-austerity-eurozone-and-its-implications (accessed August 22, 2013).

CHART 4–1

Structural Balance, Interest Rate Spread, and Fiscal Consolidation Closely Linked in the Euro Area



Notes: Structural Deficit is the negative of IMF Structural Balance, 2010, and is displayed on a squared axis. Spread is 10-year bond versus Germany in 2010, from OECD and ECB data. Fiscal consolidation is total IMF Fiscal Monitor fiscal consolidation less interest payments.
Sources: International Monetary Fund, European Central Bank, and OECD.

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As Chart 4-1 shows, structural balance, interest rate spread, and fiscal consolidation were extremely closely linked within the Eurozone.

In nine non-euro EU countries, interest rates contribute little, and 73 percent of variation in consolidation can be explained by structural balance and long-run fiscal sustainability (S2). This is consistent with De Grauwe and Ji's 2012 finding that factors unique to the Eurozone rapidly raised borrowing costs there, contributing to the downward spiral in the weak economies.

De Grauwe and Ji also measure the interest rate spread improvement among 10 Eurozone countries after the European Central Bank (ECB) committed "to unlimited support of the government bond markets."[130] They find it a "surprising phenomenon" and "remarkable feature" that the ECB announcement caused spreads to decline proportionally. But a proportional decline is exactly what one should expect if investors become partially protected from solvency crises.[131] The finding is valuable, even if unsurprising, because it shows that markets reacted rationally to the ECB's announcement, and is equally consistent with a bond market priced by risk-return fundamentals or by panicked bond vigilantes.[132]

Austerity and Growth. Tax austerity is very harmful to growth, while spending cuts are partially replaced by private-sector activity, and thus less harmful.

Using revenue-based fiscal consolidation data (2009–2012) from the Fiscal Monitor, I find that

[130]De Grauwe and Ji, "Panic-Driven Austerity in the Eurozone and Its Implications."
[131]The fact that the decline was not near 100 percent indicates that some risk remains.
[132]I am not hereby taking the position that interest rate spreads in Europe reflect market fundamentals.

tax increases have a multiplier of –2.2 and spending cuts have a multiplier of 0.8 on contemporaneous growth (2009–2012).[133] If I substitute core government spending growth for discretionary spending cuts, the revenue and spending multipliers are both around 1.4.

Controlling for the growth in the interest rate spread, the effects of fiscal consolidation shrink to –1.4 (taxes) and zero (spending), respectively. Alternatively, excluding outlier Greece has roughly the same effect, bringing the multipliers down to –1.3 and 0.4.

There is considerable variance in the timing of the beginning of austerity. Thus, using GDP growth from 2010 to 2012 may better capture the post-crisis era in many countries, and doing so results in smaller multipliers for all measures.

Taking the total amount of fiscal consolidation as a given, and considering only countries which enacted net fiscal consolidation, fiscal consolidation that relied 22 percentage points more on spending cuts was associated with 1 percentage point more in growth from 2010 to 2012, when average growth was just 1.7 percent over the entire period.

Confirming the Literature

The experience of the global crisis and aftermath confirm the findings of previous research. As detailed by Andrew Biggs, Kevin Hassett, and Matthew Jensen, among others, there is a substantial research consensus that fiscal consolidation through spending cuts is less contractionary than fiscal consolidation through tax increases.[134] Barro and Redlick found that tax multipliers were larger than the multiplier for military purchases,[135] and Romer and Romer defend a tax multiplier considerably higher than the usual range of spending multipliers.[136]

Thus, it is not unexpected to find that tax policy was more potent than spending policy: Tax cuts did more to aid the recovery and tax increases were more harmful in the consolidation. The exception from the primacy of taxes is that spending-focused stimulus was slightly more expansionary during the first years of the recession. Although all the estimates are imprecise, they are consistent with most of the literature on fiscal policy—government spending boosts GDP instantly and then crowds out private spending slowly. The incentive effects of taxation may take effect over several years, but they are permanent. If anything, this recent crisis shows

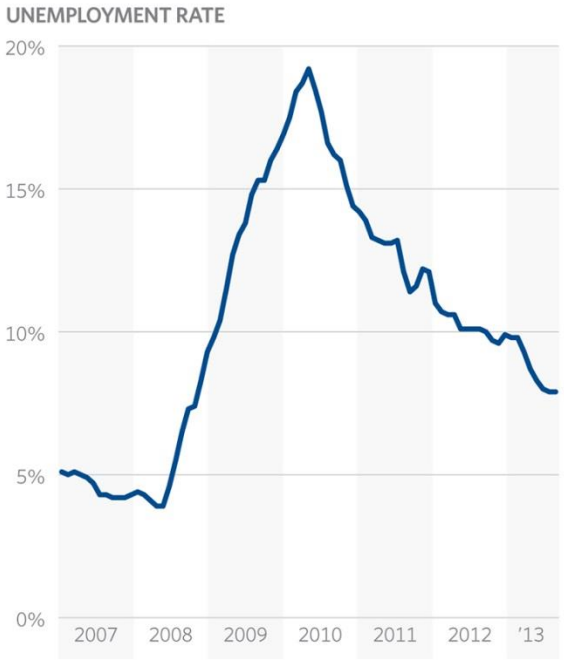
[133]Robust standard errors are 0.8 and 0.3, respectively.
[134]Andrew G. Biggs, Kevin A. Hassett, and Matthew Jensen, "A Guide for Deficit Reduction in the United States Based on Historical Consolidations That Worked," American Enterprise Institute *Economic Policy Working Paper* 2010-04, December 2010.
[135]Robert J. Barro and Charles J. Redlick, "The Macroeconomic Effects from Government Purchases and Taxes," *The Quarterly Journal of Economics*, Vol. 126, No. 1, (2011), pp. 51–102, http://intl-qje.oxfordjournals.org/content/126/1/51.full (accessed October 17, 2013).
[136]Christina D. Romer and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," *American Economic Review*, Vol. 100, No. 3 (June 2010), pp. 763–801, http://www.aeaweb.org/articles.php?doi=10.1257/aer.100.3.763 (accessed October 11, 2013).

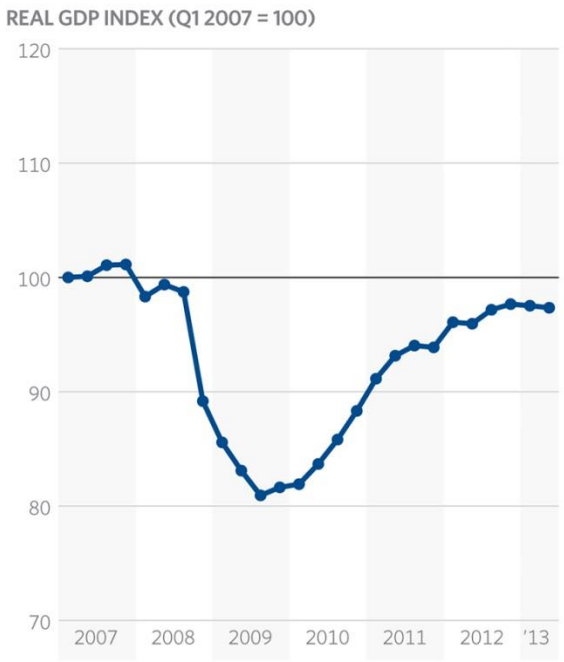
how brief the short run is: Countries whose spending-focused stimulus put them one step ahead in 2010 were already two steps behind in 2012.

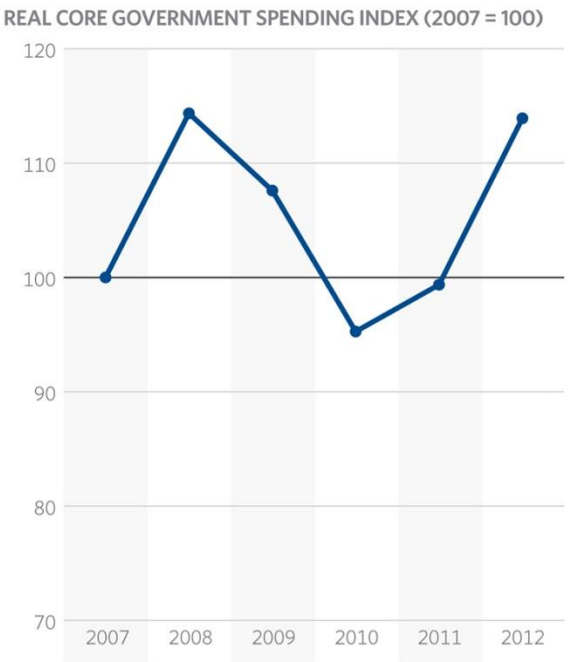
Making policy based only on one recent and incomplete historic episode would be a mistake. But it is nonetheless comforting to know that the data from the most recent years are broadly consistent with economic theory and empirics from prior decades.

APPENDIX CHART 1

Estonia: Key Metrics, 2007–2013







Sources: Eurostat, OECD, and Heritage Foundation calculations.

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Estonia

Salim Furth, PhD

Center for Data Analysis, The Heritage Foundation

Estonia's fiscal policy has been dramatic, even operatic.[137] Estonia exacerbated its recession by raising taxes at the bottom of its deep recession. However, a commitment to near-zero debt before and during the crisis leaves Estonia with all policy options available going forward.

Boom and bust

Estonia's economy grew rapidly during the 2000s, although it remained one of Europe's poorest countries. A housing bubble led to a quadrupling of home prices in five years even as construction soared.[138] Estonia joined the EU (2004) and then the Eurozone (2011). The boom kept government finances in surplus, but rapidly expanding government transfers pushed the underlying fiscal balance into deficit in 2006, at the height of the boom.[139]

Then the housing market crashed. In the second half of 2008, gross domestic product dropped like a stone, down 13 percent from 2007Q4 to 2008Q4. Investment dropped 20 percent and exports and consumption began headlong falls. Yet government consumption and revenues grew slightly, and transfers leapt 20 percent in a single year, largely due to a 20 percent increase in the size of the average state-funded pension.[140] Despite steady tax revenue, the fiscal balance dropped by 5.5 percent of GDP, greater than U.S. deficit growth in 2008 or 2009.

Policy reaction

As the crisis progressed, Estonia's lawmakers strove to maintain their annual balanced-budget fiscal rule. Several measures were one-time budget boosters: sales of public land and accounting gimmicks with pension plans and national companies artificially increased 2009 and 2010

[137] The cantata *Nostra Culpa* was written and performed to commemorate the argument between Paul Krugman and President Toomas Henrik Ilves. See Michael Amundsen, "Estonian austerity, Paul Krugman, and Twitter: All the elements of an opera?" The Christian Science Monitor, March 13, 2013, http://www.csmonitor.com/World/Europe/2013/0313/Estonian-austerity-Paul-Krugman-and-Twitter-All-the-elements-of-an-opera.

[138] Baudouin Lamine, "Estonia: analysis of a housing boom," ECFIN Country Focus Vol. VI, Issue 7, July 2009, http://ec.europa.eu/economy_finance/publications/publication15590_en.pdf.

[139] Author's calculations based on OECD data and OECD, "Economic Survey of Estonia 2012: Overview," October 2012, Figure 5B, http://www.oecd.org/eco/surveys/Estonia%20overview.pdf.

[140] The Ministry of Social Affairs of the Republic of Estonia, "Health, Labour and Social Life in Estonia 2000-2008," 2009, http://www.sm.ee/fileadmin/meedia/Dokumendid/V2ljaanded/Publikatsioonid/2009/esinduskogumik_2009eng.pdf. Table 2, page 98, shows that the average pension increased 14 percent in 2007 and 20 percent in 2008 (nominal Estonian Kroons). The total number of pensioners was steady (Table 1, page 97).

revenue.[141] Hours and wages for public employees were frozen or cut.[142] Pension reform limited a promised 14 percent annual pension boost to 5 percent during the recession.

The most durable fiscal consolidations, unfortunately, took the form of tax increases. The unemployment insurance contribution increased from 0.9 percent to 4.2 percent of payrolls, effectively undoing the last three income tax cuts. The standard value-added tax (VAT) rate rose by 2 points and some tax exemptions were canceled. Scheduled income tax cuts were canceled.[143] Even as Estonia's economy recovers, its revenue rate appears to be permanently, substantially higher than before the crisis. Government's share of the economy has risen concomitantly.

The OECD has criticized Estonia for its "pro-cyclical" fiscal policy: spending in the boom, cutting in the bust.[144] Likewise, tax cuts during the boom and tax increases during the bust amplify the business cycle. But the trend – toward higher taxes and larger government – is a greater danger to Estonia's long-term growth than poor cyclical financing.

Structural reforms

The most encouraging Estonian policy changes are permanent reforms to the labor market and pension system. The retirement age will be raised to age 65 by 2026, easing the strain of funding pensions. A 2009 employment protection reform eased hiring and firing, allowing employers and employees to find good matches more quickly and efficiently.[145] As the OECD emphasizes in its 2009 report, flexibility is particularly important after a major economic dislocation.

Estonia's broader challenge in the 21st century is to stem its population decline, due both to emigration and a high abortion rate.[146] Labor market flexibility, low taxes, and low prices may improve family finances and encourage family formation and discourage emigration at the margin.

Rebound

[141] OECD, "Economic Survey of Estonia 2011," April 2011, http://www.keepeek.com/Digital-Asset-Management/oecd/economics/oecd-economic-surveys-estonia-2011_eco_surveys-est-2011-en.
[142] The OECD's 2011 Economic Survey reports a 25 percent drop in "[s]tate budget expenditures" from 2008 to "the second half of 2009." But OECD statistics show smaller cuts. In real terms, government wage payments fell 6 percent from peak to trough, government output fell 18 percent, and non-transfer primary expenditure fell 17 percent. The latter two drops were from 2007 to 2009.
[143] OECD, "Economic Survey of Estonia 2011," April 2011, http://www.keepeek.com/Digital-Asset-Management/oecd/economics/oecd-economic-surveys-estonia-2011_eco_surveys-est-2011-en.
[144] OECD, "Economic Survey of Estonia 2012: Overview," October 2012, http://www.oecd.org/eco/surveys/Estonia%20overview.pdf.
[145] OECD, "Economic Survey of Estonia 2009," April 2009, http://www.keepeek.com/Digital-Asset-Management/oecd/economics/oecd-economic-surveys-estonia-2009_eco_surveys-est-2009-en.
[146] The Ministry of Social Affairs of the Republic of Estonia, "Health, Labour and Social Life in Estonia 2000-2008," 2009, http://www.sm.ee/fileadmin/meedia/Dokumendid/V2ljaanded/Publikatsioonid/2009/esinduskogumik_2009eng.pdf.

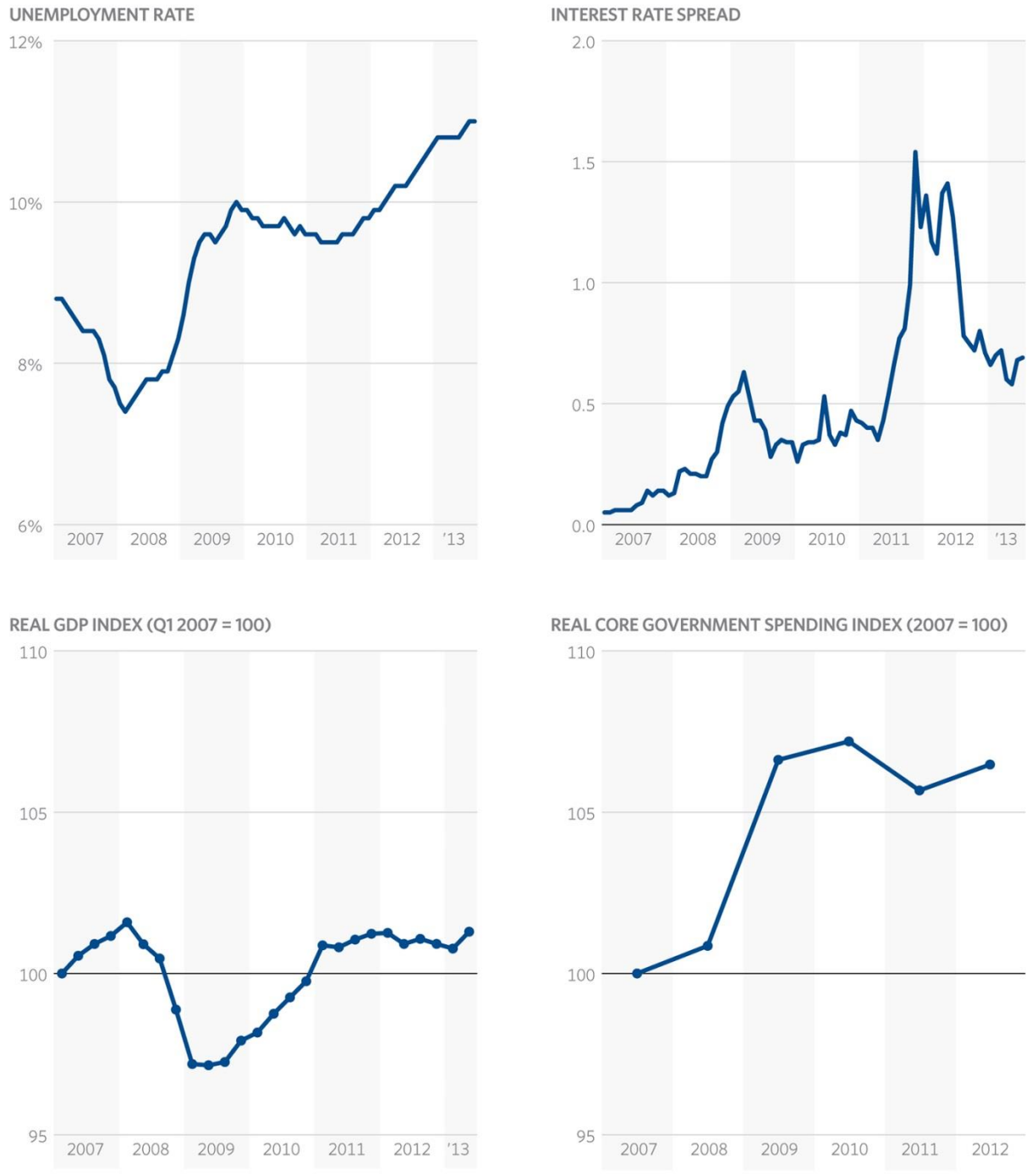
Estonia's growth since the economy cratered in 2010 has been exceptional. The economy could exceed its pre-crisis peak in 2014, and unemployment fell below 8 percent in 2013 from a high of 19 percent in 2010.[147] Trade has been the primary growth area in the economy, underlining Estonia's position as a small open economy. Estonia has broad financial flexibility, and earned trust among global investors by following through on its promise to maintain a balanced budget. Estonia's voters endorsed the government's handling of the recession by returning the conservative governing coalition in 2011 elections.

The challenge for Estonia going forward is to maintain momentum in bringing its productivity (and thus wages) up to the technological frontier. Textbook economic theories suggest that countries further behind will grow quickly as long as they have access to advanced technology and do not have institutional barriers to growth. If Estonia expands economic freedom, curtails the growth of the welfare state, lowers taxes, and maintains open borders with Europe, it will be able to continue the rapid growth of the last twenty years.

[147] Eurostat, Unemployment rate by sex and age groups - monthly average, %, July 2013 (accessed October 9, 2013).

APPENDIX CHART 2

France: Key Metrics, 2007–2013



Sources: Eurostat, OECD, European Central Bank, and Heritage Foundation calculations.

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France

By Veronique de Rugy, PhD

Mercatus Center

When the French elected President François Hollande, putting in power a Socialist president for the first time since the 1980s, many pegged his victory to his rejection of austerity measures. According to Hollande, spending cuts had failed and it was time to adopt "pro-growth" spending increases. However, this was hardly a break from the policies implemented by his predecessor, President Nicolas Sarkozy. Sarkozy's response to the crisis mostly took the form of increased government spending and higher taxes. In other words, Hollande is mostly continuing in Sarkozy's steps — only with a greater emphasis on tax increases.

A look at the data shows that there is very little that is austere about France's spending. According to Eurostat data, in 2012 French public spending reached 56.6 percent of GDP, up from 52.6 percent in 2007.[148] In fact, Sarkozy's main response to the financial crisis took the form of the adoption of spending stimulus bills in hopes jump-starting the economy. In 2008 and 2009 the government announced that it would spend €26.5 billion over that period.[149] However, a report by the French Court Auditors revealed that the stimulus ended up costing €34 billon.[150]

Other measures were adopted to stimulate the economy, which according to a document released by the French Senate, led to total cumulative effort of €47.2 billion over 2009 and 2010.[151] This figure is to be added on top of the measures the French government adopted in 2008 to stabilize its banking system. In recent months, Hollande also announced a plan to spend an additional €12 billion to stimulate the economy in 2013.[152]

France has relied heavily on tax increases to contain the deficits exacerbated by stimulus spending. In 2007, total revenue stood at 49.9 percent of GDP, but it has since increased to 51.8 percent.[153]

While the tax burden in France had decreased in the 2000s, taxes have increased in France between 2009 and 2012. The data shows that the average worker in France faced a tax burden on labor income of 50.2 percent in 2012, much higher than the OECD average of 35.6 percent.[154]

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[148] European Commission, Eurostat, Total General Government Expenditure 2001-2012.
[149] Library of Congress, "Financial Stimulus Plans", Law Library of Congress, August 15, 2013, http://loc.gov/law/help/financial_stimulus_plan.php#France (accessed October 10, 2013).
[150] Didier Migaud, "Report from the Court of Auditors," testimony before the Committee on Finance, National Assembly of France, September 14, 2010, http://www.assemblee-nationale.fr/13/cr-cfiab/09-10/c0910102.asp#P2_91 (accessed October 17, 2013).
[151] French Senate, *Projet de loi de finances pour 2010 : Plan de relance de l'économie*, http://www.senat.fr/rap/l09-101-319/l09-101-3199.html (accessed October 16, 2013)
[152] Hugh Carnegy, "France outlines 12bn investment plan to help modernize economy," *Financial Times*, July 9, 2013, http://www.ft.com/cms/s/0/c72efe7a-e8a0-11e2-aead-00144feabdc0.html#axzz2hzD8ktqM (accessed October 17, 2013).
[153] European Commission, *Eurostat*, October 10, 2013.
[154] Organisation for Economic Co-operation and Development, "Tax Burden on Labour Income – France," *Taxing Wages*, http://www.oecd.org/ctp/tax-policy/taxingwages-france.htm, (accessed October 10, 2013).

In addition, data compiled by taxpayers' watch groups and newspapers show that between 2007 and the end of 2012, taxpayers were subjected to 205 separate increases in their tax burden.[155] The list of tax increases spans from excise levies on televisions, tobacco, and diet soda to an increase in the value-added tax (VAT) and the wealth tax. Also noticeable is an increase in the top marginal income tax rate from 40 to 41 percent in 2010 and again to 45 percent in 2012.[156]

In a special report published in *Le Monde* in September 2013, the liberal newspaper used data from the Ministry of Finance to show that 84 new taxes have seen the light of day since 2009 under presidents Sarkozy and Hollande.[157] The article also notes that Sarkozy increased tax revenue by €16.2 billion in 2011 and €11.7 billion in 2012 while Hollande added another €7.6 billion on top of that as soon as he was elected and is planning to raise an additional €20 billion in 2013. That's €55.5 billion in new tax revenue in four years with more than half of the total collected from businesses.

Sadly for French taxpayers, taxes are set to go up even further in 2014. For instance, Hollande campaigned for and proposed a 75 percent tax rate on personal income above €1 million.[158] Objections from the Constitutional Council posed an obstacle to Hollande initially, but he plans to revive the 75 percent tax rate by 2014. Even worse, the VAT, which has been stable at 19.6 percent since 2007,[159] is scheduled to increase in 2014.[160]

A list of noteworthy French policies adopted since the beginning of the global crisis reveals a strong tilt toward higher spending and higher taxes.

Year 2008

In October 2008, the French Parliament passed a law aimed at restoring trust in the French banking and financial system and guaranteeing the good functioning of the economy. The plan included loans up to €360 billion for refinancing and recapitalization.[161]

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[155] Wikistrike, "Ma déListe complète des 205 impôts et taxes augmentées ou créées en France depuis 2007 envoyée au Papa Noël" http://www.wikistrike.com/article-la-liste-horrible-et-complete-des-205-impots-et-taxes-augmentees-ou-creees-en-france-depuis-2007-113728603.html (accessed October 15, 2013), and: Impôts-économie, "Toutes les Taxes de Sarkozy," http://www.impots-economie.com/toutes-les-taxes-de-sarkozy/ (accessed October 15, 2013).

[156] KPMG International, *Individual Income Tax Rates Table*, http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/individual-income-tax-rates-table.aspx (accessed October 10, 2013).

[157] Patrick Roger, "Pluie d'Impots Sur La France," *Le Monde*, September 3, 2013, http://www.lemonde.fr/economie/article/2013/09/03/l-il-du-monde-pluie-d-impots-sur-la-france_3470469_3234.html.

[158] Charles Riley, "France's Hollande wants 75% tax on rich," *CNN Money*, March 29, 2013, http://money.cnn.com/2013/03/29/news/economy/france-tax-hollande/ (accessed October 17, 2013)

[159] European Commission, "*Tax reforms in EU member states, 2013,",* p.115 Table A2.7 Standard and reduced VAT rates in the EU, http://ec.europa.eu/taxation_customs/resources/documents/taxation/gen_info/economic_analysis/tax_papers/taxation_paper_38.pdf (accessed October 10, 2013).

[160] "France's economy - Budgetary Blues," *The Economist*, September 28, 2013. http://www.economist.com/news/europe/21586892-tax-rises-have-reached-their-limit-budgetary-blues (accessed October 11, 2013)

[161] Library of Congress, "Financial Stimulus Plans"

In addition at the end of 2008, the French government announced that it would put forth a Stimulus Plan totaled €26 billion. [162]

Many small taxes were increased during 2008.[163]

Year 2009

In February, the government unveiled a series of measures totaling €26.5 billion (about US$34 billion) to support the economy over 2009 and 2010.

The plan included 3 sections:[164]

- €11.4 billion towards improving businesses' cash flow and allowing them to invest,
- €11.1 billion for direct state investment, and
- €4 billion from large state-run companies to improve rail and energy infrastructures and the postal service.

However, an October 2010 report by the French Court of Auditors (*Cour des comptes*) assessed that the stimulus plan ended up costing €34 billion over the course of 2009 and 2010, with the lion's share spent in 2009.[165] Many of the transfers in the stimulus plan took place through the tax code, but without lowering tax rates to enhance economic incentives. Among other things added to the plan were loans to the automobile industry and households and transfers to lower income individuals.

Year 2010

The original stimulus plan was augmented by a few additional items. For instance, as part of the revisions made to the 2009 stimulus plan in March 2009, the government had announced that it would subsidize new car purchases by €1,000. The measure was extended in 2010 but the subsidy was cut to €700 in January 2010 and to €500 in June 2010. The total cost of the subsidy was €900 million over 2009 and 2010 up from the original projected cost of €220 million.[166]

Taxes were increased in 2010, including:

- A 6 percent increase of the tobacco tax,[167]
- Several taxes on health insurance,[168]

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[162] European Commission, Directorate General – Economic and Financial Affairs, "France: Macro Fiscal Assesment," March 4, 2009, p. 4, http://ec.europa.eu/economy_finance/economic_governance/sgp/pdf/20_scps/2008-09/02_technical_assessment/fr_2009-03-04_ta_en.pdf (accessed October 10, 2013).
[163] Impôts-économie, "Toutes les Taxes de Sarkozy"
[164] Library of Congress, "Financial Stimulus Plans"
[165] Didier Migaud, "Report from the Court of Auditors."
[166] Emilie Leveque, "Le Vrai Bilan Du Plan De Relance," *L'Expansion*, 14 September 2010, http://lexpansion.lexpress.fr/economie/le-vrai-bilan-du-plan-de-relance-francais_238929.html#EfASWxL6hzg4GD4v.99 (accessed October 17, 2013).
[167] Impôts-économie, "Toutes les Taxes de Sarkozy"

- A special 50 percent tax on bonuses to French traders in financial instruments above €27,500,[169] and
- Extension of a 15-year-old "temporary" social security tax.

Year 2011

Taxes were increased again in 2011. Among other tax increases:

- The period over which the capital gains tax applies to real estate rose, in the case of a second home, to 30 years,
- Some tax deductions for large corporations and wealthy individuals were removed,
- The 2007 reform exempting workers and employers from taxes on overtime pay was partially reversed,
- The reduced VAT rate rose from 5.5 percent to 7 percent,[170] and
- A new tax on hotel rooms was introduced. [171]

Year 2012

The Finance Law of 2012 increased many taxes. [172] Here is a partial list compiled by *Tax Notes International*:[173]

- A lower ceiling on the inheritance tax exemption, from €159,000 to €100,000 per child,
- A new 3 percent surcharge on cash dividends,
- A new top tax bracket (for those earning above €1 million annually) of 75 percent,
- The introduction of Europe's first financial transaction tax (FTT) on share purchases,
- A wealth tax for 2012, using a progressive scale between 0.55 and 1.80 percent,
- A new 15.5 percent "social tax" on income and gains from vacation homes, paid on top of the usual 20 percent income tax and 19 percent capital gains tax,
- The dividends withholding tax rate was increased to 21 percent, and higher for non-residents,
- The tax rate for income paid to residents of non-cooperative states rose to 55 percent,
- Tax niches (exceptional regimes) were reduced by 15 percent with a 4 percent global ceiling on taxable income, and
- The cigarette tax was substantially increased.

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[168] Ibid.
[169] Editorial, "Taxe sur les Bonus des Tradeurs," *FiscalOnline.com*, http://www.fiscalonline.com/La-taxe-sur-les-bonus-des-traders,1919.html (accessed October 17, 2013).
[170] Editorial, "TVA : le taux réduit passe de 5,5% à 7% sauf pour les cantines scolaires," *Le Parisien,* December 1, 2011, http://www.leparisien.fr/economie/tva-le-taux-reduit-passe-de-5-5-a-7-sauf-pour-les-cantines-scolaires-01-12-2011-1747293.php (accessed October 17, 2013).
[171] Impôts-économie, "Toutes les Taxes de Sarkozy"
[172] KPMG International, STC Partners, "*Second Amended Finance Law for 2012*," July 31, 2012, http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/taxnewsflash/Documents/france-aug10-2012.pdf (accessed October 10, 2013).
[173] Sophie Borenstein, France A Year in Review 2010. Tax Notes Int'l, December 24, 2012, p. 1206 http://www.reedsmith.com/files/Publication/6c642ab9-d168-446f-8be1-3c769689c87a/Presentation/PublicationAttachment/13e8584c-77eb-4fd6-b80c-454dd3d89ac2/68TI1206-Borenstein.pdf (accessed October 17, 2013).

In addition, Hollande reversed a reduction of the wealth tax adopted under Sarkozy in 2007 that was to be implemented in 2012.[174]

Year 2013

More tax increases have been announced:

- A 75 percent tax on salaries over €1 million which will only be levied on corporations in 2013 and 2014. The shift happened after the French judiciary declared the 75 percent tax rate on personal income unconstitutional.[175] (Under the new proposed payroll tax, employers would be required to pay an additional, temporary tax on salaries exceeding €1 million. The tax would apply on top of the 45 percent top income tax rate, surcharges, and social contributions, bringing to 75 percent the rate on high incomes).[176]
- A carbon tax and nuclear power levy was imposed.[177]
- Under the Finance Act for 2013, the flat rates previously applied to stock options and share grants will be repealed and such gains will be taxed based on the normal progressive income tax scale. [178]

President Hollande also announced a €12 billion ($15 billion) stimulus plan focusing on new technology and ecology. [179] The plan will be financed partially with revenue from the sale of state stakes in *private companies* to avoid adding too much to the deficit. The *Wall Street Journal* reported that Hollande is planning to spend an additional €20 billion ($26 billion) over the next decade on infrastructure projects such as revamping roads and power networks.[180]

Year 2014

More tax changes are proposed in the 2014 Budget Bill:[181]

- The higher VAT rate will increase from 19.6 percent to 20 percent.[182]

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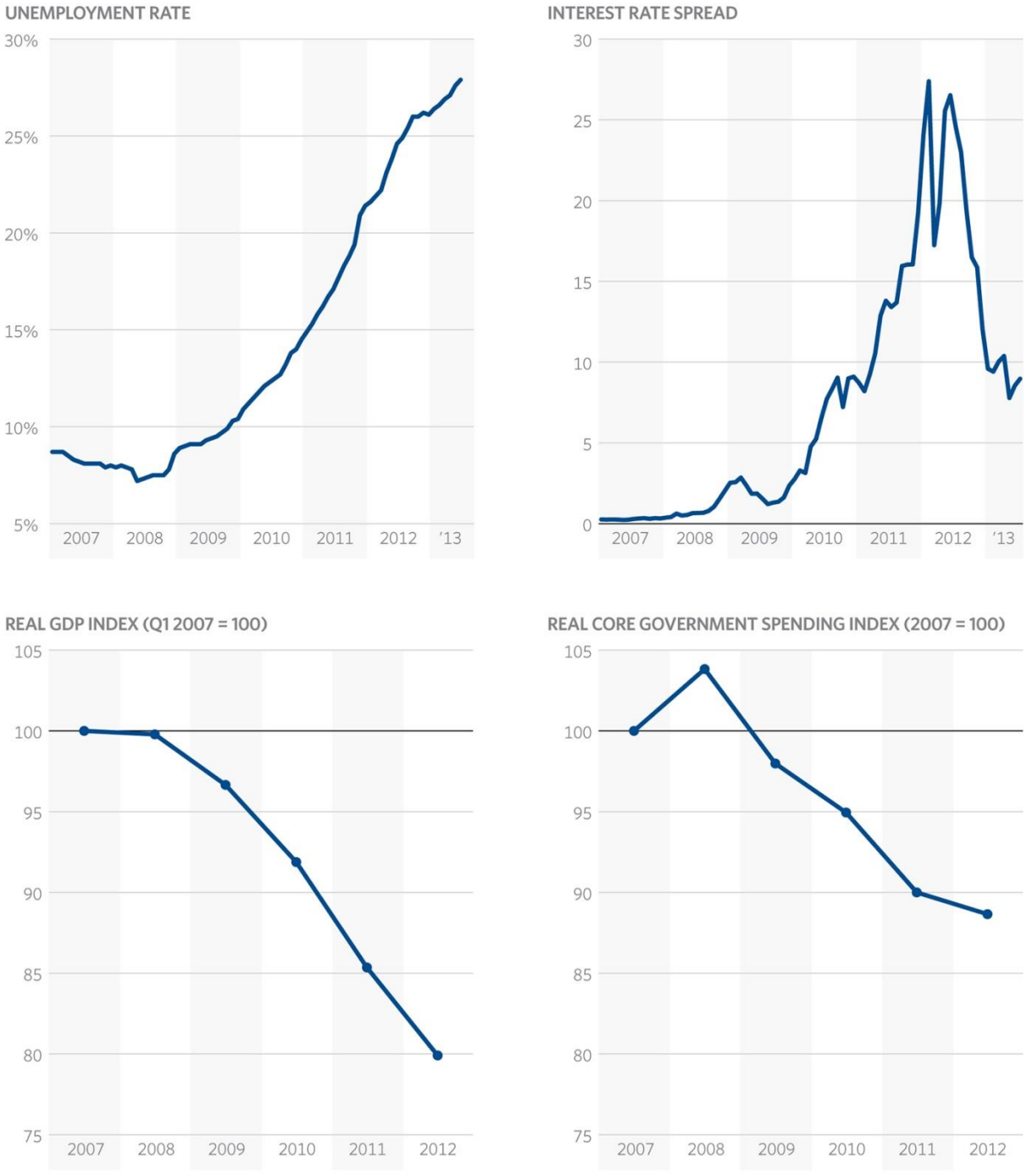
[174] Tim Gregory, "French Wealth Tax: How It Affects the UK," *BBC*, September 6, 2012, http://www.bbc.co.uk/news/business-19464110 (accessed October 17, 2013).
[175] KPMG International, "flash International Executive Alert," April 3, 2013, p. 1, http://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/flash-international-executive-alert/Documents/flash-international-executive-alert-2013-014-jan.pdf
[176] Ibid.
[177] Tara Patel, "France Plans Carbon Tax, Atomic Cap in $27 Billion Energy Shift," *Bloomberg*, September 20, 2013, http://www.bloomberg.com/news/2013-09-20/france-plans-carbon-tax-atomic-cap-in-27-billion-energy-shift.html.
[178] KPMG International, "flash International Executive Alert," p. 2.
[179] Editorial, "French Stimulus Focuses on Technology," *phys.org*, July 9, 2013, http://phys.org/news/2013-07-french-stimulus-focuses-technology.html (accessed October 17, 2013)
[180] Stacy Meichtry and Gabriele Parussini, "France Looks for New Stimulus," *The Wall Street Journal*, May 6, 2013, http://online.wsj.com/news/articles/SB10001424127887323372504578467041614956044, (accessed October 17, 2013)
[181] Ulrika Lomas, "French households face higher tax bills in 2014," *Tax-News.com*, September 9, 2013, http://www.tax-news.com/news/French_Households_Face_Higher_Tax_Bills_In_2014____61992.html (accessed October 10, 2013).

- The intermediary VAT rate will increase from 7 percent to 10 percent.[183]
- The lowest VAT rate will decrease from 5.5 percent to 5 percent.[184]
- The "family quotient" income tax exemption will fall.[185]
- Personal pension contributions will rise.[186]
- The transfer tax on property acquisition will rise from 3.8 percent to 4.5 percent
- Some tax deductions, including one for school costs, are also to be abolished.[187]

[182] Louis Morice, "5%, 10% et 20%, les trois nouveaux taux de TVA," *Nouvel Observateur*, November 8, 2012,http://tempsreel.nouvelobs.com/economie/20121106.OBS8223/5-10-et-20-les-trois-nouveaux-taux-de-tva.html (accessed October 17, 2013)
[183] Ibid.
[184] Ibid.
[185] Ulrika Lomas, "French households face higher tax bills in 2014"
[186] Ibid.
[187] Editorial, "French Income Tax Rates for 2014," *French Property.com*, October 7, 2013, http://www.french-property.com/news/tax_france/income_tax_bands_2014/ (accessed October 17, 2013)

APPENDIX CHART 3

Greece: Key Metrics, 2007–2013



Sources: Eurostat, OECD, European Central Bank, and Heritage Foundation calculations.

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Greece

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Greece's economic collapse in the past several years has been unlike any other country's record. With a continuous decline of GDP for five years, record-breaking 27.9 percent unemployment, and gross government debt exceeding 179 percent of GDP,[188] it is unlikely that this epic Greek tragedy will conclude in the near future.

Early growth in government spending

Prior to the 2000s, Greece attempted to keep its budget near balance in order to meet the required 3 percent deficit-to-GDP benchmark for membership in the Euro Area. When they failed in their fiscal responsibilities, they used questionable reporting to make the numbers work.[189] Between 1999 and 2004 government expenditures grew more than 50 percent, while GDP increased 23 percent over the same time period.

In 2005, Greece's government implemented half-hearted spending cuts that delayed the growth in the structural deficit. One segment of the reforms was an attempt to end "jobs for life" in the public sector by legalizing government layoffs. These reforms were met with resistance and protests in the major cities throughout Greece.[190]

Pushing the limits on spending and depressing economy

From 2005 to 2009, Greece's structural deficit grew steadily from 6.7 to 19.1 percent of potential GDP.[191] These spending policies pushed the gross government debt-to-GDP ratio to its height in 2011 of 170 percent. A significant amount of this spending went for public sector wages which rose by 40 percent in real terms from 2003 to 2009[192] and pension increases that were exacerbated by the growing number of retirees.

Since its 2007 peak, Greece's economy has contracted over 23 percent, and there are still no clear signs that the economy has reached bottom. The most recent data show mid-2013 GDP 3.8

[188] Unless otherwise specified, figures are from the International Monetary Fund, World Economic Outlook, 1995 to 2013.
[189] Editorial, "Greece admits fudging euro entry," *BBC*, November 15, 2004, http://news.bbc.co.uk/2/hi/business/4012869.stm, (accessed September 17, 2013).
[190] Editorial, "Unions protest as Greece targets public-sector jobs," *Orlando Sentinel*, September 11, 2005, http://articles.orlandosentinel.com/2005-09-11/news/WORLD11_4_1_greece-public-utilities-caramanlis (accessed September 17, 2013).
[191] International Monetary Fund, World Economic Outlook, Structural Deficit, 2005-2012.
[192] Organisation for Economic Co-operation and Development, Statistics OECD, 2003-2009. Heritage Foundation calculations.

percent below where it was in 2012,[193] while unemployment rose to 27.9 percent in its last report.[194] Greece's inability to pay its debts has led to two sovereign defaults and Greece is effectively shut out of international borrowing markets.

The decline in Greece's economy is further fueled by the political instability and unrest. With the numerous protests and violence in the streets, the tourism industry suffered a severe drop of 1.5 million tourists in 2012.[195] Political instability and chronic lack of political will to follow through with promised reforms drove investors further away by increasing uncertainty. Since 2007, investment has fallen by more than half.

Restructuring and bailouts

Given all the civil unrest that followed the bailout and austerity plans, it is doubtful that Greece would have attempted to restructure its public sector if it were not for pressure from the international community.[196] Despite two bailouts and a default allowing a 50 percent write-down of debt, Greece still has not been able to get its deficit below the 3 percent target. In order to continue to receive the bail-out funds, Greece has to adhere to the international agreements which require substantial reforms in the public sector of the economy, more effective tax collection, some privatization of public property, and other fiscal adjustment measures.[197]

The Greek government has adopted the Economic Adjustment Programme in order to implement reforms that would improve the business climate, restore competitiveness, and ensure growth.[198] Thus far they have made reforms in the following sectors:

Public Service

Public sector jobs took a general wage cut of 10 percent for salaries above 1,800 euros a month. Jobs for life were – in theory – abolished in the public sector. Only about 20 percent of retiring employees are being replaced in order to decrease the number of public sector jobs.[199] Most recently, public employees lost a "hardship" bonus of 6 extra vacation days per year for anyone

[193] Hellenic Statistical Authority, *Press Release: Quarterly National Accounts: 2nd Quarter 2013,* September 6, 2013, http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0704/PressReleases/A0704_SEL84_DT_QQ_02_2013_01_P_EN.pdf (accessed October 2, 2013).

[194] Hellenic Statistical Authority, *Press Release: Labour Force Survey June 2013,* Table 4, http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0101/PressReleases/A0101_SJO02_DT_MM_06_2013_01_F_EN.pdf (accessed October 17, 2013).

[195] "Alkman Granitsas and Laura Stevens, "Tourists also tell Greece 'No,'" *Wall Street Journal*, May 25, 2012, http://online.wsj.com/article/SB10001424052702304065704577424310175114578.html (accessed September 17, 2013).

[196] Historically, Greece has evaded its debts through devaluing its currency, something that is not an option now that Greece is a member of the Euro Area.

[197] International Monetary Fund, *Greece: Memorandum of Economic and Financial Policies*, July 17, 2013, http://www.imf.org/external/np/loi/2013/grc/071713.pdf.

[198] Hellenic Republic Ministry of Finance, *Hellenic National Reform Programme 2011-2014*, p. 10, http://ec.europa.eu/europe2020/pdf/nrp/nrp_greece_en.pdf

[199] OECD, *Restoring Public Finances*, 2011, pp. 122-124 http://www.oecd.org/governance/budgeting/47840787.pdf

working with a computer. In April 2013, the latest attempt[200] at public sector layoffs targeted 15,000 public sector jobs, including many at the state-owned TV station.

Pension Reform

The retirement age is being increased to age 67, although many workers retire early and these reforms do not affect civil servants.[201] One policy target is to increase the average age of retirement from 61 to 63.[202] Reforms have also attempted to make early retirement less attractive. Furthermore, pensions will now be calculated based on average pay over the career instead of on the last five years of pay, which are much higher than career average pay.[203]

Taxation

In January of 2011, the Greek government increased the standard value-added tax (VAT) to 23 percent. New taxes on gasoline were introduced. A new property tax is to be introduced in January of 2014.[204] New luxury taxes on vehicles, swimming pools, and aircraft have been introduced.[205] Greece's tax revenues have fallen overall due to the weak economy, but have risen sharply from 40 percent to 46 percent of GDP.[206]

Privatization of State Assets

In 2011, Greece established the Hellenic Republic Asset Development Fund (HRADF) which was tasked with overseeing the privatization program. The target of the HRADF was to generate 5 billion euros in revenues for 2011 (and 50 billion by 2015).[207] However, they managed to raise only 1.7 billion in 2011 and 0.7 billion in 2012. [208] As of early 2013, the government of Greece has sold the Mobile Telephony Licenses, 10 percent of the Hellenic Telecommunications Organization (OTE), a third of the state lottery OPAP, a 120-acre parcel of land on the island of

[200] http://online.wsj.com/article/SB10001424127887324731304578193840094267034.html
[201] "Greece MPs approve new austerity budget amid protests," BBC, http://www.bbc.co.uk/news/world-europe-20293058
[202]Editorial, "Greece plans to ban early retirement," *BBC*, February 9, 2010, http://news.bbc.co.uk/2/hi/europe/8506142.stm, (accessed October 1, 2013).
[203] Ibid.
[204] International Monetary Fund, *Greece: Memorandum of Economic and Financial Policies*.
[205] Andy Dabilis, "Rich Greeks Face Luxury Tax," *Greek Reporter*, September 13, 2013, http://greece.greekreporter.com/2013/09/13/rich-greeks-face-luxury-tax/, (accessed October 1, 2013).
[206] Organisation for Economic Co-operation and Development, Statistics OECD, 2003-2009. Heritage Foundation calculations.
[207] Ministry of Finance of Greece, *Medium Term Fiscal Strategy*, June 2011, p. 45, http://www.minfin.gr/content-api/f/binaryChannel/minfin/datastore/8d/78/0e/8d780e3337a1e1cb20d1a1707686d7399be4913a/application/pdf/MTFS.pdf
[208] Hellenic Republic Asset Development Fund, *Progress Report May 2013*, pp. 4-5, http://www.hradf.com/uploads/files/20130531-progress-report-may-2013-en1.pdf.

Corfu, [209] four real estate properties in London, Belgrade, Brussels, and Nicosia[210] and four Airbus A340s.[211]

Structural Reforms

The Greek government has begun a process of integrating several agencies, particularly in the revenue collecting sectors. The Fiscal Management Law requires an annual rolling three-year budgetary strategy with expenditure ceilings. Liberalization of regulated professions is also planned.[212]

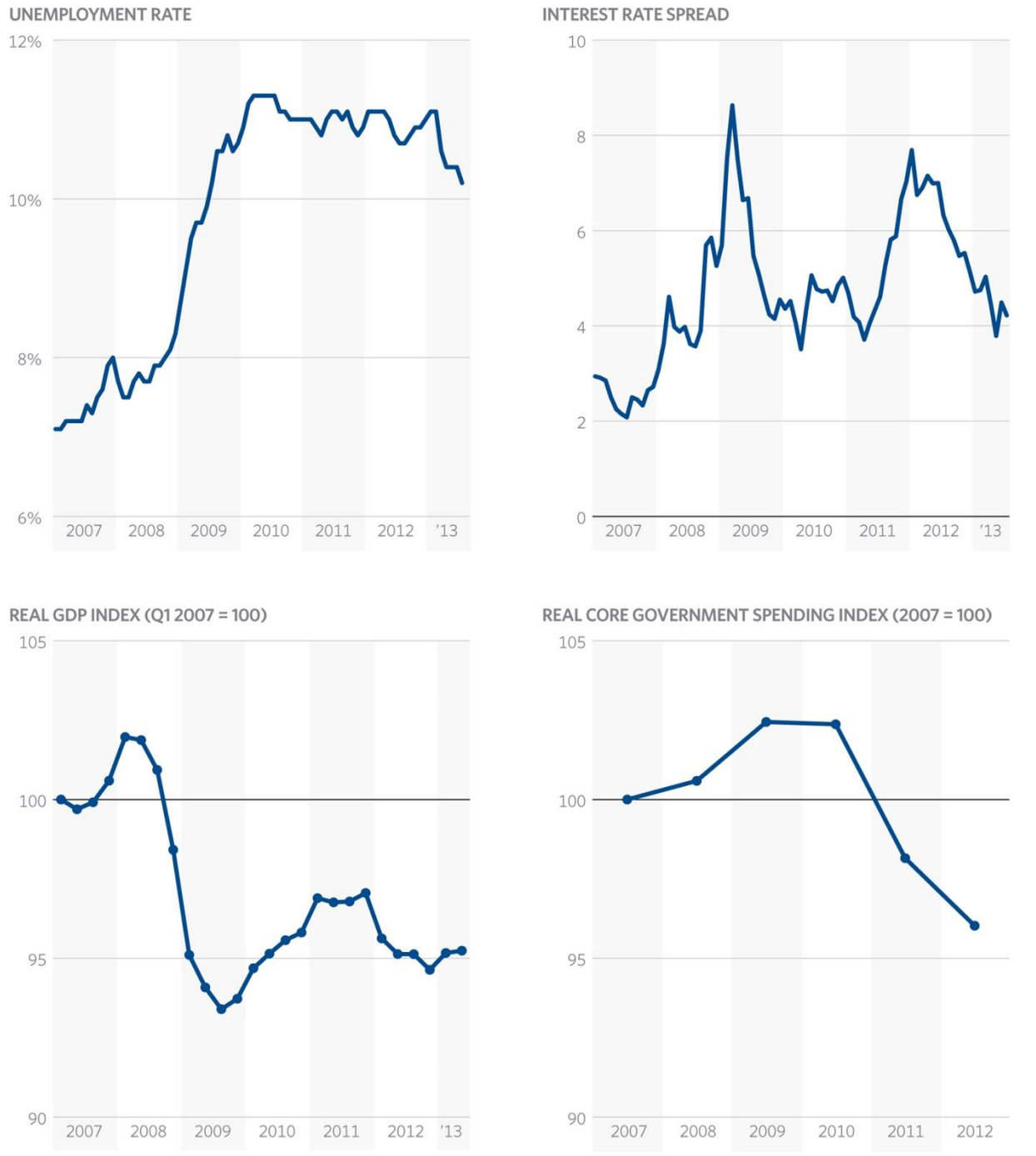
Outlook

Despite a five-year depression, there have been few signs of improvement. With youth unemployment over 60 percent and total unemployment at 28 percent, rising tax rates, and falling real GDP, it is very likely that private consumption will further decrease. Furthermore, this year's IMF estimate is that gross government debt will surpass 179 percent of GDP, leading some such as Germany's Minister of Finance Wolfgang Schaeuble to raise the prospect of a third bailout for Greece.[213]

[209] "Greece Closes Privatization Deal On Kassiopi, Corfu," *Greek Travel Pages Headlines*, http://news.gtp.gr/2013/02/01/greece-closes-privatization-deal-on-kassiopi-corfu/ (accessed October 2, 2013).
[210] Hellenic Republic Asset Development Fund, *Progress Report May 2013.*
[211] Tom Stoukas, "Greece Sells Four Airbus A340-300 Aircraft, Ministry Reports," *Bloomberg*, January 2, 2012, http://www.bloomberg.com/news/2012-01-02/greece-sells-four-airbus-a340-300-aircraft-ministry-reports.html, (accessed October 1, 2013).
[212] International Monetary Fund, *Greece: Memorandum of Economic and Financial Policies.*
[213] Editorial, "Greece will need new bailout, says Germany's Schaeuble," *BBC*, August 20, 2013, http://www.bbc.co.uk/news/business-23774633 (accessed September 17, 2013)

APPENDIX CHART 5

Hungary: Key Metrics, 2007–2013



Note: Hungary does not use the Euro, so its spread can move for reasons other than fiscal risk.

Sources: Eurostat, OECD, European Central Bank, and Heritage Foundation calculations.

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Hungary

Dalibor Roháč

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Introduction

Notwithstanding its reform successes in the 1990s, Hungary's economy prior to the financial crisis of 2008 was characterized by high levels of household indebtedness, unsustainable public finances, and structural problems particularly in the labor market. The policy response to the crisis was unsystematic and worsened the perceptions of legal protection of private property and investors. The government also failed to shrink government spending and instead attempted to consolidate public finances through revenue increases.

Economic performance prior to the crisis

In the early 1990s, Hungary was seen as one of the most successful transitional countries of Central and Eastern Europe. Due to reforms adopted in the 1980s, Hungary had direct experience with private markets even before the collapse of communism.

Given Hungary's starting position and its early progress in the transition, its economic performance of the 1990s and the 2000s seems a disappointment. Between 1995 and 2008, annual growth rates averaged just three percent.[214] Various structural problems persisted – most prominently on the labor market, characterized by extremely low rates of labor force participation. Throughout the 2000s, the government's fiscal situation was worsening, with public debt rising by almost 30 percentage points between 2001 and 2008. Simultaneously, Hungarian households accumulated large foreign-denominated debts, primarily in Swiss francs. By 2008, foreign-currency loans constituted almost 30 percent of GDP, compared to less than 10 percent in the Czech Republic and Slovakia.[215]

The crisis of 2008

The combination of high public debt and high external debt made Hungary financially vulnerable. The dramatic depreciation of the Hungarian forint relative to the euro and the Swiss franc in 2008 and 2011 not only increased the relative size of foreign-denominated loans but has also led to an explosion of non-performing loans (NPL). While in 2007 around 2 percent of all loans were non-performing, by 2011 that figure reached 14 percent.[216]

[214] EEAG, "The Hungarian Crisis," The EEAG Report on the European Economy, CESifo, Munich, 2012, p. 115.
[215] Ibid., p. 125.
[216] International Monetary Fund, *Hungary: Selected Issues Paper*, IMF Country Report No. 13/86, International Monetary Fund, 2013, p. 3.

The combination of the effects of the global financial crisis and depreciation on Hungary's financial system made it more difficult for the Hungarian government to issue bonds, which prompted the government to request an aid package from the International Monetary Fund, the European Union, and the World Bank. The stand-by loan of $15.7 billion approved in November 2008 was thus the first in the series of rescue packages provided to EU countries in financial distress.

Unsurprisingly, the crisis in the financial sector had its repercussions on the real economy. Hungary's economy contracted by 6.8 percent in 2009 and has never resumed pre-crisis growth rates. The average economic growth rate in the recovery has been around half a percent per year. Unemployment increased from 7.4 percent in 2007 to 11.2 percent in 2009 and has remained in double digits since then.

Policy response

Financial sector

The policy response to the crisis in the financial sector consisted of a series of negotiated measures aimed at reducing the burden of debt on households. Three key measures have been put in place. First, a repayment program was negotiated between the government and financial institutions, which has given households an option to use a fixed discounted exchange rate to repay their loans until the end of 2014. Second, the government and the banks agreed on a conversion of loans that have been non-performing for more than 90 days into Hungarian forints, with a 25 percent haircut imposed on financial institutions. More controversially, in September 2011, the government – without consulting the financial industry – adopted legislation that enabled households to make one-off repayments of their foreign loans at a discounted exchange rate, forcing the resulting losses on banks.

Fiscal consolidation

Since the crisis, the Hungarian government has slightly cut public spending. In real terms, non-interest government expenditures shrank less than $1 billion since 2007, while revenue grew more than $5 billion.[217] As a proportion of GDP, Hungarian public spending hovers below 49 percent. The country has traditionally had the highest public spending in the region, compared to Slovakia where government spending was 37.4 percent in 2012, the Czech Republic with spending at 44.6 percent, or Poland at 42.3 percent.[218]

The fiscal adjustment that occurred in Hungary was thus focused almost exclusively on the revenue side. The revenue increases came primarily from ad hoc financial levies on the financial, telecommunications, and retail sectors. Simultaneously, the government cut income taxes by introducing a 16-percent flat tax rate on wages, but the cut was overwhelmed by a VAT rise and

[217] In 2005 U.S. dollars using current PPP. Source: Heritage Foundation calculations using OECD data.
[218] Figures from Eurostat.

other tax increases, so total tax revenues rose. The attempted fiscal consolidation involved a nationalization of $14 billion worth of assets of private pension funds in 2011 – a measure that increased revenue in the immediate short term, but cannot be expected to be a systemic remedy to the deficit problem plaguing the country.[219]

As part of a more systematic effort to bring public finances under control, in 2008, Hungary introduced a Fiscal Council, a nominally independent body that was supposed to assess the effects of policy changes on the government budget both in the short and the longer term. After the Council criticized the adopted tax increases as unsustainable in 2011, the government of Viktor Orbán stripped it of its powers and replaced it with a three-member panel with much narrower remit.[220] In December 2011, Hungary also adopted a Financial Stability Act, which puts in place an automatic formula that should limit the growth of nominal debt whenever debt-to-GDP ratio exceeds 50 percent, to be applied from 2015 onwards.

Structural reforms

The financial crisis exacerbated the structural problems of the Hungarian economy, particularly the labor force participation rate, which remains among the lowest in the European Union.[221] This is driven by the heavy tax burden imposed on labor and also by the effects of country's minimum wage, which interacts with the tax system. In Hungary, firms typically underreport salary expenditures, with official earnings being complemented with cash-in-hand wages. Increases in the minimum wage – from €260 monthly in 2007 to €341 in 2013[222] – are forcing firms to report a greater portion of their salary expenditure, thus increasing the tax burden they face,[223] while the tax reforms adopted between 2010 and 2012 have only partly reduced the significant employment disincentives facing Hungarian workers and firms.[224]

Furthermore, Hungary's regulatory burden has traditionally been heavy. According to the Global Competitiveness report, for instance, the burden of regulation in Hungary is among the heaviest

[219] Jan Iwanik, "European nations begin seizing private pensions," *Christian Science Monitor*, January 2, 2011. http://www.csmonitor.com/Business/The-Adam-Smith-Institute-Blog/2011/0102/European-nations-begin-seizing-private-pensions

[220] Akos Valentinyi, "The Hungarian Crisis," *VoxEU*.org, March 19, 2012, http://www.voxeu.org/article/hungarian-crisis

[221] Eurostat, *People Outside the Labour Market*, July 2013, http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Labour_market_participation_by_sex_and_age

[222] Eurostat, Database of Minimum Wages in the EU, http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/earnings/database

[223] Gabor Kertesi and Janos Köllo, *Labour Demand with Heterogeneous Labour Inputs after the Transition in Hungary, 1992–1999 – and the Potential Consequences of the Increase of the Minimum Wage in 2001 and 2002*, Budapest Working Papers on the Labour Market 2002/5, Institute of Economics, Hungarian Academy of Sciences, Budapest.

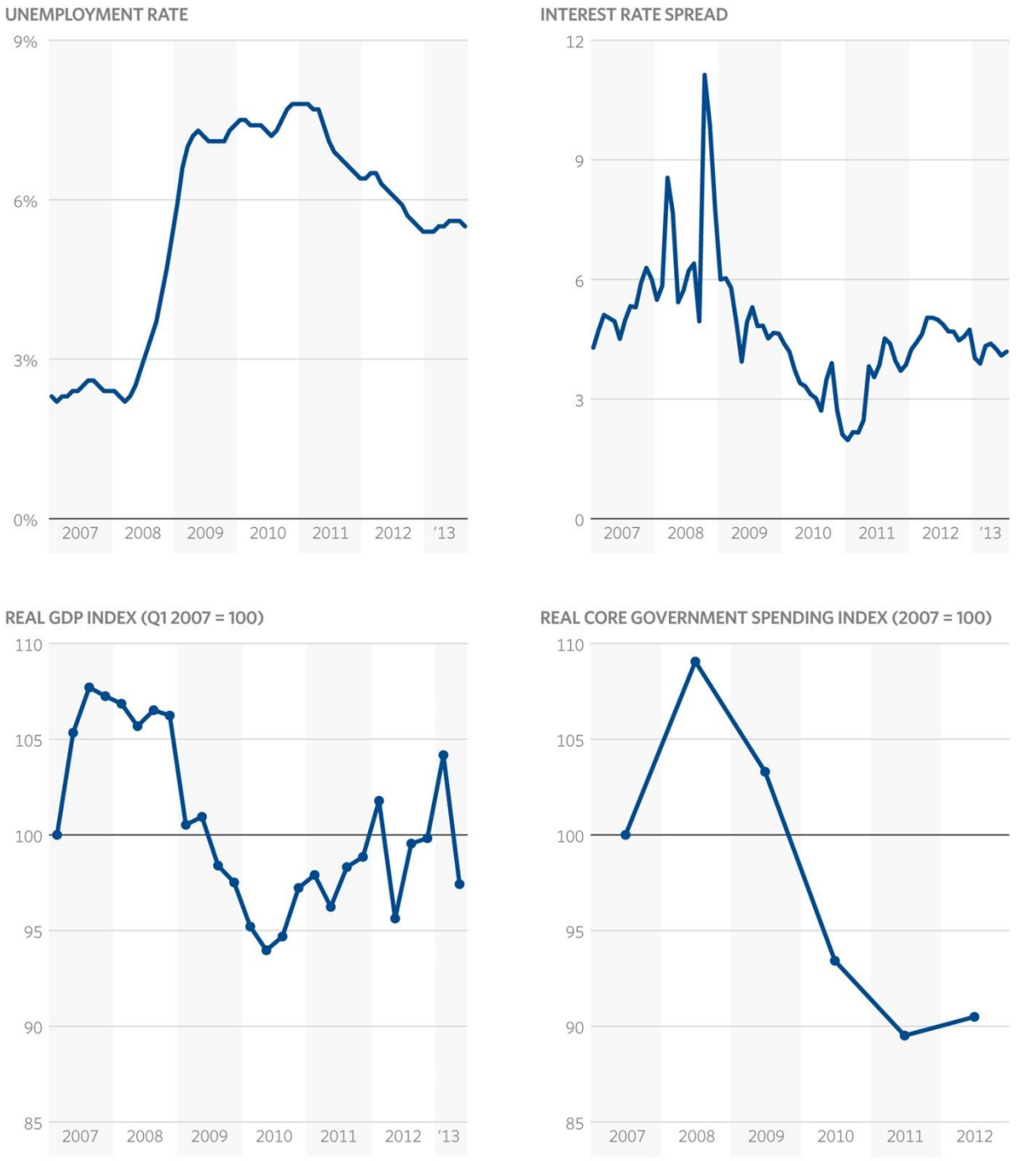
[224] Tímea Ladányi and Rafal Kierzenkowski, *Work Incentives and recent Reforms of the Tax and Benefit System in Hungary*, OECD Economics Department Working Paper No. 944, 2012, http://search.oecd.org/officialdocuments/displaydocumentpdf/?cote=ECO/WKP(2012)21&docLanguage=En

in the world – the country ranks 138th of 144 on this measure.[225] The business environment has been seen as deteriorating as a result of growing legal uncertainty, driven largely by the unconventional policy response to the crisis.

[225] Klaus Schwab, *The Global Competitiveness Report 2012–2013*, World Economic Forum, p. 396, http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2012-13.pdf

APPENDIX CHART 6

Iceland: Key Metrics, 2007–2013



Note: Iceland does not use the Euro, so its spread can move for reasons other than fiscal risk.

Sources: Eurostat, OECD, European Central Bank, and Heritage Foundation calculations.

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Iceland

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Iceland became the first developed country in over 30 years to request IMF aid during its economic and financial crisis of 2008. In terms of stock market decline and output lost, the small island nation's recession over the past five years has been rivaled only by those in Greece and Ireland. By not bailing out its banks, the government avoided an indebted fate that would have left taxpayers on the hook for a generation, as was the case in Ireland.[226] Today the country's recovery is a success story, though there is still work to be done on the policy front.

Boom and Bust

Iceland's growth over the early 2000s was a European success story. Yearly real GDP growth averaged two percent and the stock market's capitalization as a percent of GDP grew by about 11 percent per year. Strong economic growth kept government finances largely under control, with the public debt to GDP ratio dropping to 40 percent by 2005.

Economic growth proved to be largely illusory, with large increases in the money supply playing a key role.[227] Between 2001 and 2008, the money supply (M1) increased at an average annual rate of 33 percent. Supported by a wide-reaching mortgage support system via the government's Housing Financing Fund, real-estate prices averaged double digit growth throughout the decade, and homeowners cashed out their equity to increase consumption.[228]

Low interest rates, largely promoted by the accommodative monetary policy of the Central Bank of Iceland (CBI), enticed large amounts of borrowing. Real borrowing rates remained negative for 2004-08 as the CBI overshot its inflation target. An expansive deposit insurance plan increased the perceived risk-adjusted returns on bank investments and also enticed banks to set up foreign subsidiaries to offer higher Icelandic interest rates to foreigners. Funding to these subsidiaries was funneled back into Iceland, creating the "carry trade." By converting the foreign deposits to Icelandic króna, Icelandic banks ensured the króna remained strong on foreign exchange markets and that domestic Icelanders had ample access to credit.

By 2008, international debt issues amounted to almost 400 percent of Icelandic GDP, with another 360 percent of GDP by way of domestic private and government debt. The country had

[226] David Howden. 2013. Separating the Wheat from the Chaff of the Icelandic and Irish Policy Responses to the Banking Crisis. *Economic Affairs* 33 (3): 348-360. http://onlinelibrary.wiley.com/doi/10.1111/ecaf.12044/abstract.
[227] Philipp Bagus and David Howden. 2011. *Deep Freeze: Iceland's Economic Collapse*. Auburn, AL: Ludwig von Mises Institute.
[228] David Howden. 2013. The Icelandic and Irish Banking Crises: Alternative Paths to a Credit-Induced Collapse. *Independent Review* 18(3): 1-19.

grown reliant on short-term funding, which dried up with the collapse of Lehman Brothers in September 2008.

Lacking funding, Iceland's largest banks collapsed. Though the government initially attempted to save them, it was soon clear that their size dwarfed the small island's fiscal capabilities. By the end of 2009, the Icelandic government was indebted over 100 percent of GDP and requested assistance from foreign governments to remain solvent.

Policy Reaction

In the early stages of the crisis, the Iceland government and CBI both remained committed to aiding the ailing financial sector. The CBI did not back away from its pledge to honor deposit insurance, even though the banks held more than 14 times the available deposit insurance funding in their foreign subsidiary accounts. With a banking sector 11 times the size of Iceland's 2007 GDP, any bailout would imperil the government's finances.[229]

Early commitment to saving the banking sector soon gave out, and Iceland's financial supervisor placed the big three banks (which held more than 80 percent of the country's banking assets) into receivership. The supervisor than proceeded to ring fence the banks along the standard lines of a good and bad bank, though Iceland differed from most countries as it divided the assets along geographic lines. "Bad" banks included foreign subsidiaries, and would not be eligible for government assistance. "Good" banks included the domestic operations, which the government backstopped with €7.96 billion of loans. This undertaking saved depositors in the domestic banking sector from losses, but set the government's finances on an unsustainable trajectory.

In a bid to forestall a sovereign default, the Icelandic government commenced seeking outside assistance. To secure a requested IMF stand-by-agreement, Iceland had to agree to certain policies. Chief among these were capital controls, ensuring public finances return to a sustainable path and restructuring the financial sector.

Getting public finances on a sustainable path has been a slow process, though after several years of double digit deficits, the government was able to end 2012 with a only a modest budgetary shortfall of 1.5 percent of GDP. Iceland's fiscal consolidation came primarily on the spending side, with cuts amounting to more than 4 percent of GDP.[230] Tax increases have been largely isolated to financial and tourism industries, with most businesses paying a flat 20 percent corporate rate. (Individuals pay the same amount on capital gains, though a highly progressive income tax system claims 46.22 percent of income above $60,000 (739,000 Icelandic króna).

[229]Willem H. Buiter and Anne Sibert. 2008. The Iceland banking crisis and what to do about it: The lender of last resort theory of optimal currency areas. *CEPR Policy Insight*, 26.

[230] International Monetary Fund, "Taking Stock: A Progress Report on Fiscal Adjustment", *Fiscal Monitor*, October 2012, Figure 15, p. 21, http://www.imf.org/external/pubs/ft/fm/2012/02/pdf/fm1202.pdf.

Structural Reforms

Major reforms moving forward will involve removing the capital controls imposed by the IMF to promote trade. Prior to 2008, Iceland's economy enjoyed large capital inflows which halted with the end of the carry trade in September of that year. Capital inflows are now severely hampered by capital controls which ration access to foreign currency and set an onshore króna exchange rate typically 30-40 percent lower than offshore rates.[231]

While the capital controls were originally implemented to avoid a sharp depreciation of the currency, they are quickly outliving whatever usefulness they once had. Evidence now suggests that foreign investment is being shunned as foreigners are unsure of whether or to what extent they will be able to draw on their investments in the future. One area where the ailing economy can generate an export-led recovery is through its ample fishing sector. Unfortunately, Icelandic authorities have not been traditionally open to foreign investors in this sector,[232] and some evidence suggests the government is using the capital controls to further dissuade foreign encroachment in this area.[233]

Perhaps most troubling is that the controls are slowing the needed restructuring of the banking sector. The three "new" banks created from the ashes of the 2008 receiverships are still controlled by the Icelandic government, which retains veto powers on the boards of directors. Without foreign funding entering the country to rebuild the banking sector, the emphasis is on recovering distressed assets and minimizing short-term losses.[234] While avoiding losses is not necessarily unwarranted, the goal has conflicted with banks returning to normalcy and has promoted a dysfunctional banking sector unfocused on core operations.[235]

One example of this dysfunctional behavior is rolling over loans which might otherwise be written down as losses. This practice, known as "evergreening," has now become the norm rather than the exception. In addition, firms that escaped default during the crisis are at a competitive disadvantage compared to those that did fail, as the latter passed into the hands of the banking establishment. The new banks allocate credit to their own favored companies, thus making for difficult competition in the credit markets. This vicious spiral has discouraged recovery as any

[231] Jon Daniellson. 2011. Was the IMF Programme in Iceland Successful? *VoxEU*, Oct. 27. http://www.voxeu.org/article/iceland-was-imf-programme-successful
[232] OECD. 2010. OECD's FDI Restrictiveness Index: 2010 Update", by Kalinova, Blanka Angel Palerm, and Stephen Thomsen, OECD Working Papers on International Investment, No. 2010/3, OECD Investment Division, June.
[233] Jon Daniellson. 2011. Was the IMF Programme in Iceland Successful? *VoxEU*, Oct. 27. http://www.voxeu.org/article/iceland-was-imf-programme-successful.
[234] Jon Danielsson. 2011. How Not to Resolve a Banking Crisis: Learning from Iceland's Mistakes. VoxEU, Oct. 26. http://www.voxeu.org/article/how-not-resolve-banking-crisis-learning-iceland-s-mistakes
[235] David Howden. forthcoming. Separating the Wheat from the Chaff of the Icelandic and Irish Policy Responses to the Banking Crisis. *Economic Affairs*.

firm needing banking services must seek funding from a bank which is, at least in part, also competing against it.[236]

Rebound

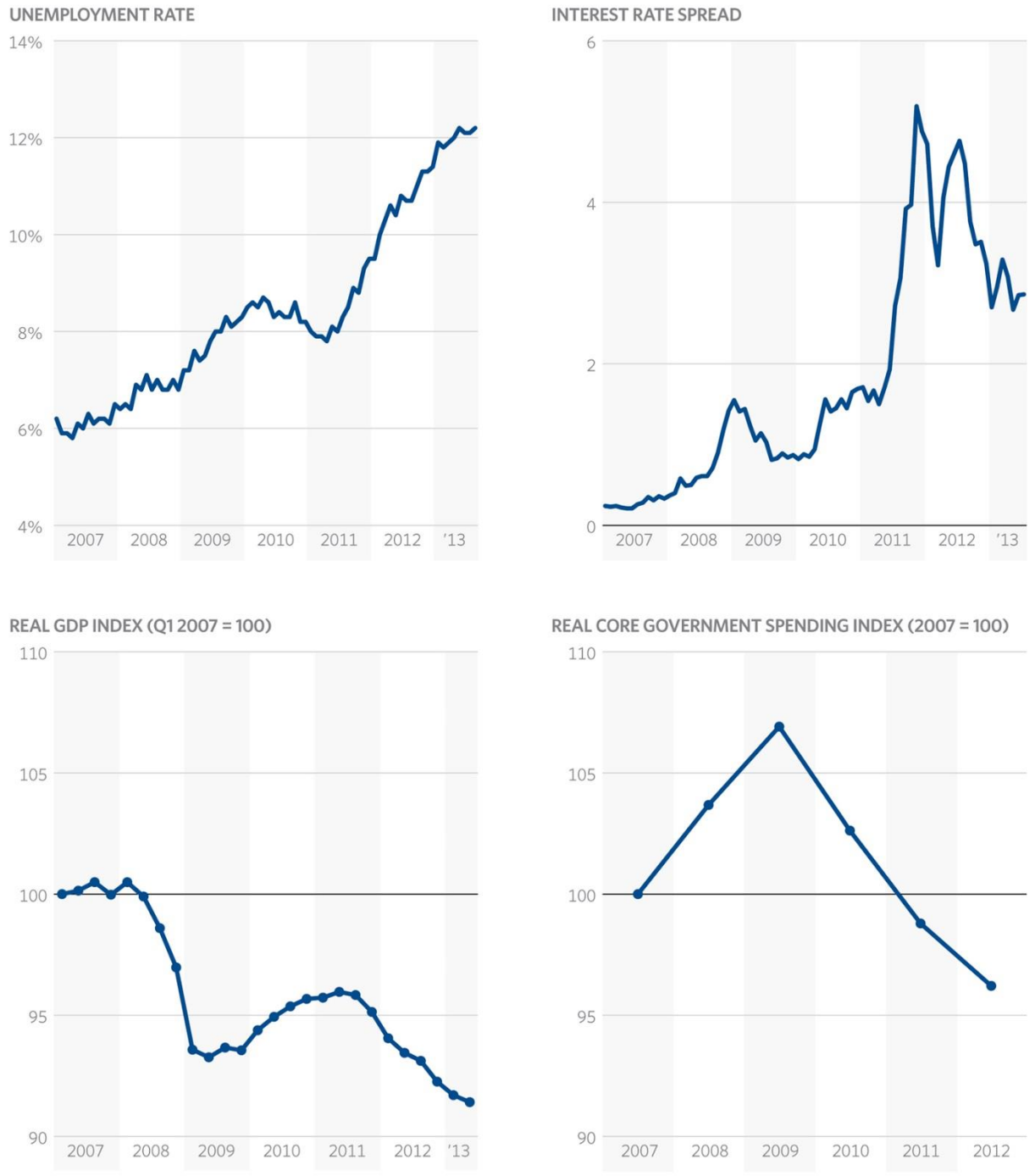
Despite the hardships created by its capital controls, the Icelandic recovery has been formidable. Inflation is coming under control, the trade balance was 6.3 percent of GDP in 2012, unemployment is hovering around 6 percent and income is recovering, up over 2 percent in real terms last year. The recovery has been led through the export sector and fisheries exports have provided some of the green shoots in the once bleak economy.

Moving forward, the Icelandic economy faces three challenges. Removing capital controls to further promote inward investment will require more effort the longer they remain in place and domestic business grows accustomed to a lack of foreign competition. Getting government finances under control is already underway, though with a public debt to GDP ratio over 130 percent, there is still much to be done to completely ease investors' fears of a sovereign default. Finally, getting banks to sustainability is an ongoing struggle, but one that will have the largest payoffs for the economy as a whole. Removing the dependence on cheap short-term credit by the CBI and allowing foreign capital to take its place would do much to reduce the engrained nature of the banking establishment. In this regard, softening or eliminating the capital controls would have the twofold benefit of increasing inward investment while also reducing the stronghold of the existing banking establishment.

[236] Jon Danielsson. 2011. How Not to Resolve a Banking Crisis: Learning from Iceland's Mistakes. VoxEU, Oct. 26. http://www.voxeu.org/article/how-not-resolve-banking-crisis-learning-iceland-s-mistakes

APPENDIX CHART 7

Italy: Key Metrics, 2007–2013



Sources: Eurostat, OECD, European Central Bank, and Heritage Foundation calculations.

heritage.org

Italy

Matthew Melchiorre

Competitive Enterprise Institute

Italy's current economic problems are the result of a decades-old web of business-stifling regulation and a sclerotic bureaucracy. Unfortunately, special interests' dominance of Italian politics makes reform and fiscal consolidation extremely difficult. All three Italian prime ministers throughout the almost five years of the euro crisis have failed to enact substantive changes.

Italy's Economic Malaise Is Rooted in Its Past

Italy was a major manufacturer and exporter during the 1950s and 1960s. Labor markets were flexible, productivity was high, and bureaucracy was relatively small.

However, in the early 1970s, the Italian government responded to inflation and recession by introducing a slew of strict labor regulations that gave unions more power to represent workers and act as their intermediary between employers and courts. Labor costs skyrocketed and Italy's productivity shriveled, along with its export market share.

Public employment became a kind of social benefit for the unemployed and a tool for political patronage. The efficiency of Italy's bureaucracy suffered and taxes increased to pay for more unemployed dressed as government employees.

Rigid labor rules and bureaucratic growth remain constant problems. Italy now maintains the second-highest public debt burden of all European Union countries and second-worst business climate in the developed world.

Italy and the Euro Crisis

In the wake of the global recession, financial turmoil originating in Ireland and Greece soon spread to Italy, as Rome's ability to fulfill its debt obligations came under the scrutiny of international financial markets.

With the spread between Italian and German 10-year treasury bonds having nearly doubled between January and July 2010, Parliament passed Italy's first "austerity" plan: a three-year pay freeze for public sector employees, a 10 percent reduction in ministry budgets, cuts to local government budgets, and a gradual three-year increase in the male and female ages of eligibility for public and private pensions by 2050 (currently at 65 and 60, respectively). For the first time, total government spending remained unchanged from the previous year instead of increasing. But this did not ease worries in bond markets, as Italy needed a spending cut, not just a freeze.

By August 2011, the European Central Bank (ECB) had become so frustrated with Italy's floundering on reform that ECB President Jean-Claude Trichet and Italian Central Bank President Mario Draghi sent Prime Minister Silvio Berlusconi an official letter sternly recommending "full liberalization" of the labor market, pension reform, and a bureaucratic overhaul to improve efficiency.

Berlusconi's government barely survived a vote of confidence in October and a fistfight broke out over pension reform on the Parliament floor between two deputies from the governing coalition. When the Berlusconi government failed in November to agree on reforms aligned with the ECB's recommendations, markets had had enough. And the ECB, fed up with the political infighting of Berlusconi's coalition government that was blocking reform, did not stop markets from pushing the interest rate on Italian debt higher than it had ever been as a euro member. Berlusconi resigned as prime minister and his government collapsed.

Italian President Giorgio Napolitano appointed economics professor Mario Monti to lead a technocratic government, which would soon run into the same political paralysis as its predecessor.

Monti passed an austerity plan though Parliament in December 2011 that consisted of tax increases and pension reform. While calming for financial markets, this was the first of several measures that tested Italians' patience.

By January 2012, Monti proposed liberalization of Italy's heavily cartelized professional service sector—beset with the highest level of regulations and standards in the developed world. His plans fell flat, as no meaningful legislation abolishing maximum licensing quotas or simplifying the long list of minimum standards for professions passed Parliament. Lawyers and pharmacists protested while taxi and truck drivers threw up roadblocks.

The final blow to Monti's government came in spring 2012, when he attempted to reform burdensome labor laws that have remained untouched since the 1970s. Monti's government did eventually pass reforms, but union power and the politicians who benefited from the older, less efficient system took the country a step backward: Temporary work became more expensive and layoffs became legal, but subject to a bureaucratic web of hurdles making it a de facto impossibility. Laws prohibiting the dismissal of workers for poor performance remained intact, as did the severe penalties for violating these rules. As Emma Marcegaglia, then-President of the Italian employers' association, said: "It would be better to have nothing."

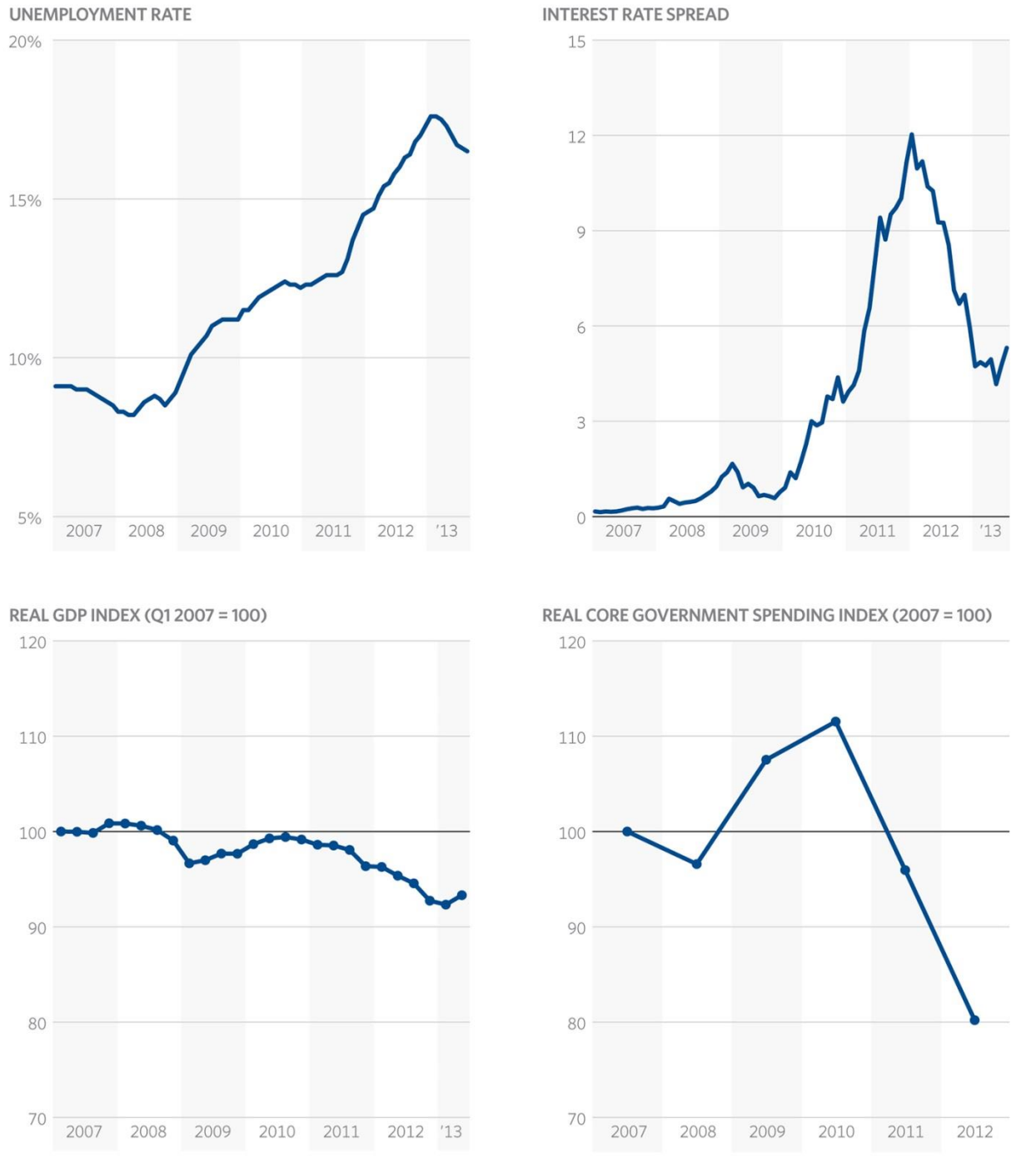
As shown in Chapter 3 of this report, Italy's tax burden as a share of GDP (Table 3-4) grew and its level of government spending (Table 3-3 and Table 3-6) was steady in the two years following its enactment of austerity. Pension reforms lowered social spending, but that cut was outweighed by an increase in non-social spending (Table 3-7). By 2012, tax revenues as a share of GDP had risen 3 percent.

New elections in 2013 yielded even less progress on reform. The new government led by Prime Minister Enrico Letta—formed out of a shaky compromise between center-left and center-right coalitions that were deadlocked at the polls—does not have the strength to implement the reforms that would ensure Italy's fiscal sustainability and economic vitality going forward.

Despite all three prime ministers' claims since July 2010 that Italy has embarked upon a new age of austerity, government spending has not yet decreased below pre-austerity levels. Taxes, on the other hand, have increased relative to the pre-austerity level. Attempts to liberalize Italy's rigid labor market have been unsuccessful and the Italian bureaucracy has not changed in any appreciable way. In Italy, austerity has meant tax increases with no change in the size of government. As a result, markets have remained skeptical of Italy's path to fiscal sustainability, and Italy's borrowing costs remain elevated.

APPENDIX CHART 8

Portugal: Key Metrics, 2007–2013



Sources: Eurostat, OECD, European Central Bank, and Heritage Foundation calculations.

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Portugal

Salim Furth, PhD[237]

Center for Data Analysis, The Heritage Foundation

In five years, Portugal's unemployment rate had doubled,[238] its debt had grown substantially, and gross domestic product (GDP) per capita had advanced just $150.[239] Productivity was stagnant while wage growth had exceeded two percent every year.[240] Olivier Blanchard forecast "a period of sustained high unemployment, leading to lower nominal wage growth until relative unit labor costs have decreased… typically a long and painful process."[241] Those five years ended in 2006.

The Slump

Expanding on Blanchard's work, Ricardo Reis has investigated the curious and sad case of Portugal. While neighboring Spain grew rapidly, Portugal slumped through the 2000s. Joining the European Monetary Union in 1999 did not spur growth in Portugal, in contrast to the gains from earlier integration episodes.[242]

Integration into the euro led to large capital inflows in southern Europe that financed a boom in consumption and sustained investment in spite of falling domestic savings. Due to Portugal's weak financial markets and laws that favor small businesses and prevent a healthy rate of labor market turnover, those capital inflows were channeled into sectors in which productivity was falling: wholesale and retail trade and community services. Reis notes an abundance of small, low-productivity establishments and hypothesizes that they received much of the new financing, increasing wages while decreasing average productivity. Financial integration with the rest of Europe came before Portuguese financial markets were deep, and the incoming investment was misallocated.[243]

Portugal's fiscal policy was the second contributor to the slump. Repeatedly during the 2000s, labor taxes increased. Portugal's entitlement state made generous retirement promises that began to come due in the 2000s, crowding out other government spending and pushing taxes higher, even as deficits increased, and the "higher taxes depressed employment and ensured that in spite

[237] The author thanks Ricardo Reis for valuable comments and revisions.
[238] Olivier Blanchard, "Adjustment within the euro. The difficult case of Portugal," *Portuguese Economic Journal*, Vol. 6, No. 1 (April, 2007), p. 5, http://link.springer.com/article/10.1007%2Fs10258-006-0015-4.
[239] World Bank, World Development Indicators, GDP per capita (constant 2005 U.S. dollars) data series, 2001 to 2006.
[240] Blanchard, "Adjustment within the euro. The difficult case of Portugal," p. 5.
[241] Blanchard, "Adjustment within the euro. The difficult case of Portugal," p. 7.
[242] Ricardo Reis, "The Portuguese Slump-Crash and the Euro-Crisis," Brookings Institute *Panel on Economic Activity*, March 2013, pp. 3-4, http://www.brookings.edu/~/media/Projects/BPEA/Spring%202013/2013a_reis.pdf (accessed September 10, 2013).
[243] Reis, "The Portuguese Slump-Crash and the Euro-Crisis," pp. 16-18.

of the capital inflows, the economy went into a slump."[244] Reis documents that the pension payment increases were due to the growing size of each pension, not just demographics.[245] Pension reform finally arrived in 2007 and the economy recorded its first 2-plus percent growth in the decade, but by then it was too late as the worldwide financial crisis arrived: "earlier reforms of pensions, other cuts in spending programs, and less distortionary tax increases would have been more effective ways to deal with the old-age pensions problem, and may have prevented the slump."[246]

Bad to worse

Like most of Europe, Portugal entered a recession in 2008. Things did not look particularly bleak: the recession was less severe than for many other countries, and recovery came promptly in 2009, despite major problems in the banking sector. The Socialist government was reelected and increased public spending.[247] But the hangover from the slump – high public and private debt, high taxes, and high unemployment – had left Portugal on the brink.

Despite the improving economy, Portugal's government did not shrink its structural deficit, which remained at 9 percent of GDP annually. Instead, government purchases and transfers rose, and government revenue rose to 44 percent of GDP, even higher than the pre-crisis level.

When Greece's sovereign debt crisis began in 2010, investors began to attach a greater risk premium to Portuguese debt. The rising interest rates increased fiscal pressure on the Portuguese government, which enacted fiscal consolidation for 2011, including spending cuts and yet more tax increases. A "diabolic loop" between banks and government, deeply indebted and hopelessly intertwined,[248] led to a "sudden stop" and "current account reversal," phenomena most often associated with crises in emerging economies.

Portugal was shut out of international capital markets in April, 2011, and received a bailout from multinational institutions in May, 2011.[249] But the financial rescue did not end Portugal's economic troubles. GDP continued to fall while unemployment and interest rates continued to rise.

Recovery?

[244] Reis, "The Portuguese Slump-Crash and the Euro-Crisis," p. 23.
[245] Reis, "The Portuguese Slump-Crash and the Euro-Crisis," p. 20.
[246] Reis, "The Portuguese Slump-Crash and the Euro-Crisis," p. 21.
[247] Reis, "The Portuguese Slump-Crash and the Euro-Crisis," p. 36.
[248] Markus Brunnermeier , Luis Garicano, Philip R. Lane, Marco Pagano, Ricardo Reis, Tano Santos, David Thesmar, Stijn van Nieuwerburgh, and Dimitri Vayanos, "European Safe Bonds (ESBies)," September 2011, http://euro-nomics.com/wp-content/uploads/2011/10/06e-Esbies_document.pdf (accessed September 11, 2013).
[249] Philip R. Lane, "The European Sovereign Debt Crisis," *Journal of Economic Perspectives*, Vol. 26, No.3 (Summer 2012), pp. 56-57, http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.26.3.49 (accessed September 11, 2013).

As the crisis developed, Portugal and Ireland faced the same growing pressure in the bond market. But after receiving bailouts, the countries diverged. Ireland's path to fiscal solvency convinced investors enough that its 10-year bond spread fell quickly and steadily. But Portugal's fiscal and economic failure pushed interest rates higher. By January 2012, Portugal's bond spread[250] was twice Ireland's, and Portugal's spread remains around 5 percent in 2013.

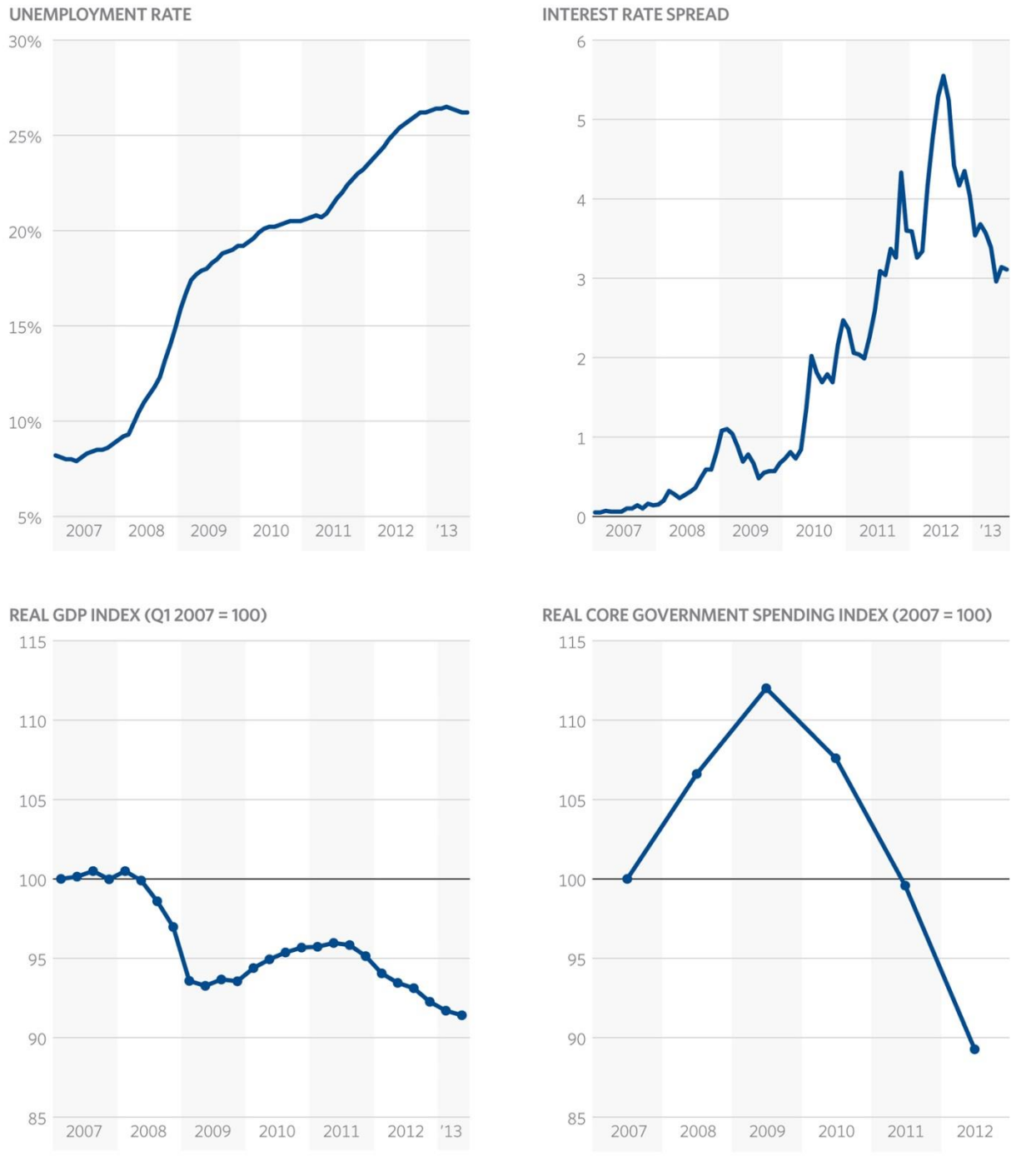
The underlying rigidities of Portugal's labor market, though less severe than in the past, made the unemployment problem much worse. Even during the GDP recovery of 2009-2010, unemployment continued to rise. Labor laws prevent wages (and thus prices) from falling to allow re-employment. In the construction sector, "nominal wages in the sector are fixed by collective bargaining and still have not fallen a single cent," contributing to the destruction of a third of all construction jobs in Portugal.[251]

Portugal's new government, elected in 2011, has made real cuts to government wages and investments, but transfers remain far above pre-crisis levels. In exchange for bailouts, Portugal's parliament has passed a variety of structural reforms and improved its labor market, making far more progress than Greece.[252] Unfortunately, the most significant cuts in spending were blocked by the Constitutional Court.[253] There are some signs for hope: exports have grown rapidly and the current account deficit has turned to a likely 2013 surplus. However, sustained growth still eludes Portugal fourteen years into its membership in the euro.

[250] Spread is defined here as the difference between Portugal's 10-year borrowing rate and Germany's 10-year borrowing rate.
[251] Reis, "The Portuguese Slump-Crash and the Euro-Crisis," p. 39. Construction had not boomed in Portugal as it had in Spain, so this does not merely represent a bubble bursting.
[252] Reis, "The Portuguese Slump-Crash and the Euro-Crisis," p. 38.
[253] Peter Wise, "Court delivers blow to Portugal bailout programme," *Financial Times*, August 29, 2013, http://www.ft.com/intl/cms/s/0/822dfd4c-10e8-11e3-b5e4-00144feabdc0.html (accessed September 30, 2013).

APPENDIX CHART 9

Spain: Key Metrics, 2007–2013



Sources: Eurostat, OECD, European Central Bank, and Heritage Foundation calculations.

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Spain

Miguel Marin

FAES Foundation[254]

The period between 2007 and 2012 in Spain offers one of the most dramatic cases of an extreme economic crash in such a short time span. Never before had the Spanish economy undergone such a thorough and fast deterioration of economic fundamentals.

The double dip recession shattered the "Spanish miracle," dropped gross domestic product (GDP) by 7 percent since 2008 according to the government's estimate of 2013 economic growth,[255] boosted unemployment to 26 percent, and increased both the public deficit and debt. In only three years, public accounts went from a surplus of 1.9 percent of GDP to a deficit of 11 percent in 2009. In 2007, the debt of the Spanish central government accounted for only 36 percent of GDP, just half the Euro Area average. As of 2013, Spain is approaching 100 percent of GDP in debt, having tripled its debt ratio since the beginning of the crisis. [256]

Origins and specific factors

The Spanish economic crisis was an archetype of the 2000s crisis narrative: a huge accumulation of risk fuelled by a too-expansive monetary policy over an extended period of time distorted the behavior of investors, consumers, savers, and — most dangerously — government. In such circumstances, governments tend to believe that the economic cycle can be controlled and that they can do so. But when problems appear, they lose control.

The imbalances accumulated by the Spanish economy before the crisis, including a current account deficit of 10 percent of GDP[257] and huge exposure of the financial sector to real estate loans, are less likely to have been financed in a country with its own currency. The entrance of Spain into the euro increased the capacity for creating a bubble. Foreign investment poured into the country despite its shallow financial institutions. When the bubble burst and financial markets refused further loans to Spanish borrowers, the Spanish government began to bail out banks and local governments, taking more of the external debt onto its own balance sheets. The real estate decline turned into a systemic financial crisis and then into a sovereign debt crisis.

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[254] The *Fundación para el Análisis y los Estudios Sociales* (FAES) is a Madrid-based think tank linked to Spain's Popular Party. The author's opinions are his own and do not necessarily reflect those of The Heritage Foundation.
[255] Spanish Statistical Office, National Accounts Statistics.
[256] Ministry of Economy and Competitiveness, *Setting the Foundations for Sustainable Growth*, p. 10, August 2013, http://www.thespanisheconomy.com/SiteCollectionDocuments/en-gb/Economic%20Outlook/Investors%20Presentation_August%202013.pdf.
[257] Organisation for Economic Co-operation and Development, Trade: Key Tables for OECD, Table 5, 2007, http://www.oecd-ilibrary.org/trade/current-account-balance-of-payments_20743920-table5 (accessed October 15, 2013).

From an economic perspective, four main problems can explain the bulk of the deceptive performance of the Spanish economy before the crisis:

- Rigidities in the real estate sector, mainly due to municipal and regional government intervention, prevented the supply from adjusting agilely to the sharp increase in demand between 2000 and 2008. As a result, home prices rose rapidly.

- Labor market regulation creates a dual system, with insiders (permanent employees) and outsiders (temporary employees). The duality allows the insiders to bargain for higher wages at the expense of creating higher unemployment for the outsiders.

- The oversized administration and welfare state are extremely expensive for citizens, choking potential economic growth and job creation and distorting the natural allocation of rights and responsibilities.

- The financial sector's exposure to loans to developers increased from 78 billion euros in 2003 to 324 billion euros in 2009.[258] Many of these loans were issued by savings banks later implicated in dishonest corporate governance.

The sluggish reaction of the Eurozone in taking the necessary decisions, such as implementing a real banking union, continues to hinder the economic recovery.

The political response to the economic crisis

In addition to the economic and administrative causes, Spain's Socialist government from 2004 to 2011 put off needed reforms in favor of increasing the size of government. Even as real-estate-enhanced GDP grew more than 3 percent per year from 2004 to 2008, the size of government grew faster. In 2008, government spending and transfers had risen to 41 percent of GDP, up from 35 percent in 2004.[259]

When markets forced Spain to cut its budget deficit in 2010 and 2011, the government responded primarily with tax increases. The value-added tax was increased, as were capital gains and income taxes. Some spending cuts were enacted, and a new reform increased the standard retirement age to 67, but left an option for many workers to retire at 65. Structural balance barely improved from 2009 to 2011, remaining near 8 percent.

The Popular Party won a large electoral mandate in 2012, replacing the Socialists. The new government has been focused on stabilizing the economy and recovering lost credibility. Its policies have been based on three main pillars.

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[258] Luis de Guindos, *Spain's Economic Policy Strategy: a lecture at the London School of Economics,* Ministry of Economy and Competitiveness, October 4, 2012, p. 2, http://marcaespana.es/upload/subhomes/documentos/[MEJORA%20LA%20COMPETITIVIDAD]%20Presentacion%20luis%20de%20guindos.pdf (accessed October 15, 2013).

[259] Organisation for Economic Co-operation and Development, Statistics OECD, 2003-2012. Heritage Foundation calculations.

First is a clear commitment to the sustainability of public finances, including a fiscal adjustment that reduced the structural deficit by 2 percentage points in 2012.[260] At the end of 2011, the Spanish parliament passed a constitutional reform in order to include a balanced budget concept in the Constitution and to set limits on the public debt and deficit allowed at the different levels of the administration. The subsequent law passed in mid-2012 seems to be working properly as all levels of government are fulfilling the requirements of fiscal consolidation. However, the composition of the fiscal adjustment remains excessively based on raising taxes rather than spending reductions, further harming already depressed domestic demand.

Second is cleaning up and recapitalizing banks in order to strengthen the financial system. The advances in the creation of a European Banking Union, although very slow, have added value to the thorough overhaul of the financial sector in Spain. The restructuring of the sector reduced the number of financial entities from 45 to 12 and the recapitalization process sharply reduced banks' exposure to the real estate sector. The enhanced transparency framework should restore confidence in Spanish banks.

Third are structural economic reforms to boost competitiveness and productivity. The labor market reform implemented at the beginning of 2012 is the most important economic achievement of the new government so far. It has triggered a sharp decline in unit labor costs and led to increasing competitiveness and exports. Whereas before the reform it was estimated that GDP growth above 2 percent was necessary for net job creation, now jobs can be created on net even if GDP grows as little as 1 percent.[261]

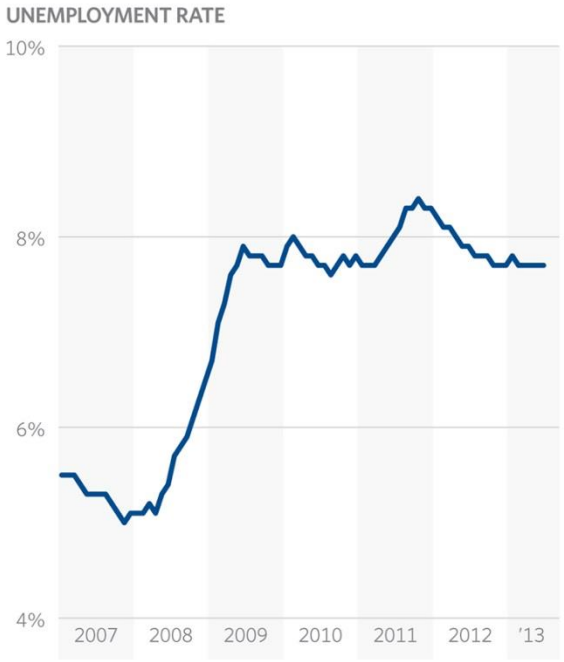
Conclusion

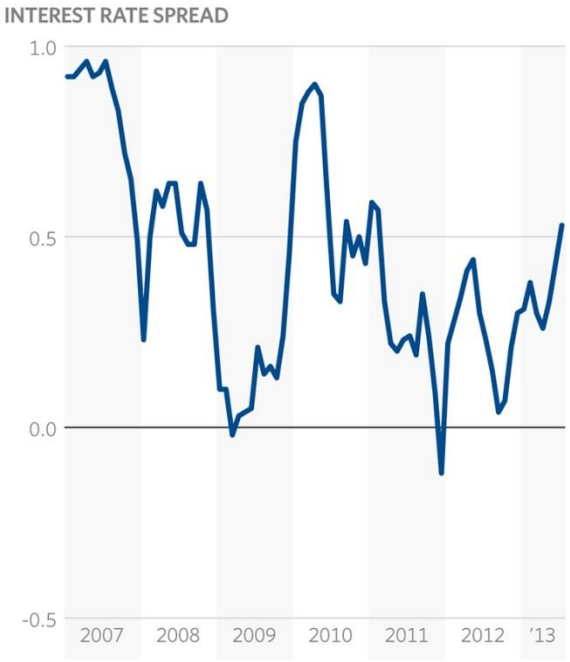
Spain seems to have left the worst of its crisis behind. After seven quarters of economic recession, the Spanish economy, fuelled by exports and tourism, is projected to grow again in the third quarter of 2013. However, there is little room for optimism or complacency. The worst scenario for Spain would be an accommodating government postponing the reforms yet to be carried out. The overhaul of the fiscal system, the deep reductions necessary to make the welfare state sustainable, additional reforms of the labor market to create work incentives, and the modernization of the bureaucracy are only some of the urgent tasks that must not be put off.

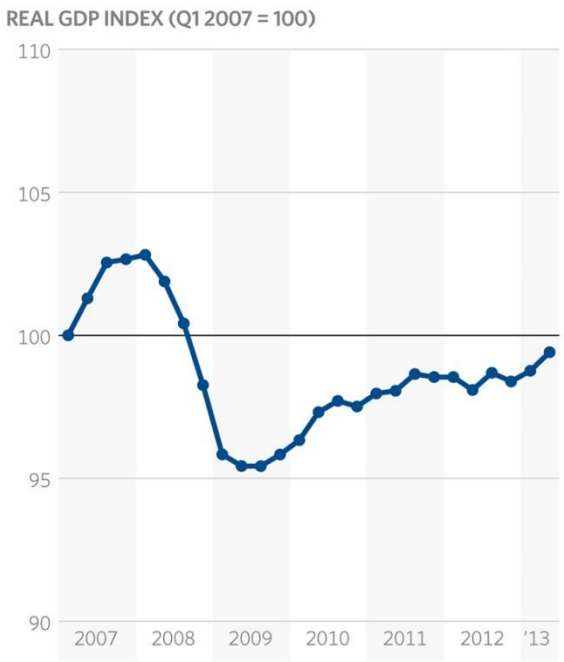
[260] International Monetary Fund, World Economic Outlook database, 2011-2012.
[261] Ministry of Employment and Social Security, *Report Evaluating the Impact of the Labour Reform,* August 2013, pp. 14-15, http://www.thespanisheconomy.com/SiteCollectionDocuments/en-gb/Economic%20Outlook/Report_evaluating_the_impact_of_the_Labour_Reform.pdf.

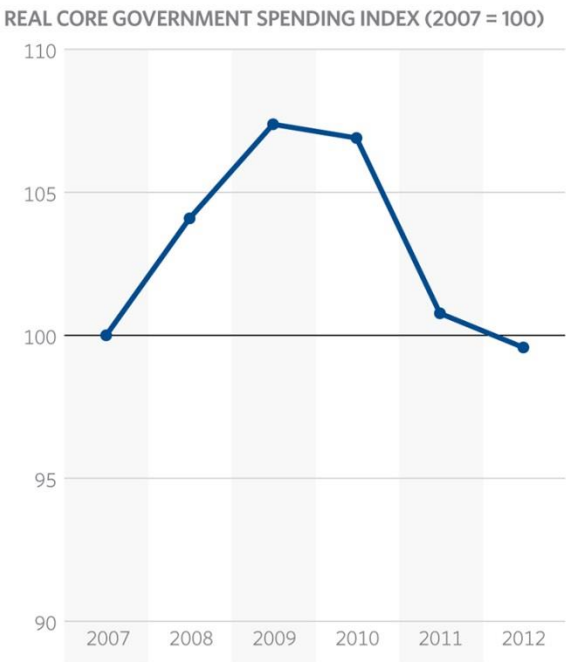
APPENDIX CHART 10

United Kingdom: Key Metrics, 2007–2013









Note: The United Kingdom does not use the Euro, so its spread can move for reasons other than fiscal risk.

Sources: Eurostat, OECD, European Central Bank, and Heritage Foundation calculations.

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United Kingdom

Ryan Bourne

Centre for Policy Studies

The UK's economy grew healthily at an average rate of 3.2 percent per annum between 2000 and 2007, but this was at least in part driven by a huge build-up of private sector debt.[262] Rather than using this period of growth to get the public finances into surplus and reduce the size of government relative to the economy, the Labour government increased spending by more than the growth of the economy – increasing general government total outlays from 36.5 percent of GDP in 2000 to 43.7 percent by 2007, and leaving the UK with a structural deficit of 4.5 percent of GDP going into the crisis (the underlying primary balance in 2007 – adjusting for all one-offs and interest payments — was 2.8 percent of GDP).[263]

Due to its high indebtedness and large financial sector, the UK was hit hard by the credit crunch and then financial crisis, suffering a 7.2 percent fall in real GDP between 2008 Q1 and 2009 Q3.[264] The Labour government, already running a deficit through the good years, abandoned its fiscal framework and allowed borrowing to expand hugely in response to the crisis, by increasing spending and cutting the main rate of VAT from 17.5 percent to 15 percent (subsequently reversed back to 17.5 percent in 2010). These discretionary measures plus the effects of the recession saw the actual deficit increase to 10.8 percent of GDP (using OECD figures).[265] Recognizing the unsustainability of this level of borrowing, the government symbolically raised the top marginal rate of income tax to 50 percent (effective from 2010), reversed the temporary VAT cut and in the 2010 General Election pledged to take steps to halve the budget deficit within four years (i.e. by 2013/14).[266]

A new Conservative-Liberal Democrat Coalition government was formed in 2010, and its Emergency Budget of June 2010 set out plans to accelerate deficit reduction whilst supporting "monetary activism" from the Bank of England.[267] Against the backdrop of huge uncertainty in the Eurozone owing to the Greek crisis, the parties thought a credible plan to reduce the budget

[262] See, for example, McKinsey Global Institute, "Debt and deleveraging: Uneven progress on the path to growth," January 2013, http://www.bruegel.org/fileadmin/bruegel_files/Events/Presentations/130121_AEEF/Session_4/Charles_Roxburgh_20130122_Debt___deleveraging_AEEF_Bruegel.pdf (accessed August 28, 2013).
[263] OECD, Economic Outlook Tables, Fiscal Balances and Public Indebtedness, http://www.oecd.org/eco/outlook/economicoutlookannextables.htm (accessed August 28, 2013).
[264] Office for National Statistics, Second Estimate of GDP, Q2 2013, http://www.ons.gov.uk/ons/rel/naa2/second-estimate-of-gdp/q2-2013/index.html (accessed August 28, 2013).
[265] OECD, Economic Outlook Annex Tables, Fiscal Balances and Public Indebtedness, Annex Table 27, http://www.oecd.org/eco/outlook/economicoutlookannextables.htm (accessed October 17, 2013).
[266] The Labour Party Manifesto 2010, "A Future for All," http://www2.labour.org.uk/uploads/TheLabourPartyManifesto-2010.pdf (accessed August 28, 2013).
[267] HM Treasury, *Budget 2010*, June 22, 2010, http://www.direct.gov.uk/prod_consum_dg/groups/dg_digitalassets/@dg/@en/documents/digitalasset/dg_188581.pdf (accessed August 28, 2013).

deficit was necessary. As such, the new Chancellor committed himself to two fiscal rules: a rolling commitment to eliminate the cyclically adjusted current budget deficit within five years, and a hard rule to have net debt on a downward path by the end of 2014/15. This deficit reduction plan entailed strongly front-loaded tax rate rises (including VAT, which was raised from 17.5 percent to 20 percent; Capital Gains Tax, which was raised to 28 percent for those in the higher income tax brackets; and increases in National Insurance contributions) and cuts to government investment expenditure inherited from the Labour government. Cuts to current expenditure were initially smaller, and offset by rising interest costs on government debt and welfare spending, though the Chancellor did take early measures to restrain the growth of public sector pay. Despite the small nature of the overall planned real terms cuts to spending, ring-fencing of large areas of the budget such as health, the state pension and large areas of schooling meant that other areas like defense, local government, and other smaller departments have seen substantial restraint.

The front-loading of tax hikes, plus the Eurozone crisis, the oil price spike and the structural hit to the UK's large financial sector as a result of the crash, dampened UK growth prospects between 2010 and 2013, leading to very slow real GDP growth. So far GDP is still more than 3% below its pre-crisis peak seen in 2008 Q1.

Fiscally, in November 2011 the independent Office for Budget Responsibility re-evaluated and revised down the potential growth rate of the economy for 2012 and 2013. They therefore concluded that more of borrowing was a structural phenomenon than cyclical. In response, however, the Chancellor decided not to adjust his fiscal plans and has since abandoned his target to get net debt falling by the end of 2014/15. As a result, more recent forecasts suggest that even the original Labour government's aim of halving the deficit by the end of 2013/14 will now be missed.

Recent economic data suggests the economy is now beginning to grow again, though many are concerned about sustainability of this growth, given it is in part driven by consumption expenditure of an already highly indebted household sector, with investment and net trade recovering but still weak. Recent government attempts to re-boot the housing market (which suffers from a chronically weak supply side due to tight planning regulations) have also been heavily criticised. The really noticeable problem for the UK over the past three years has been an incredibly weak productivity performance, a likely consequence of failure to resolve underlying issues within the banking sector and the efficient allocation of credit. But now it does seem there is finally growth across all the main economic sectors, at a time when more significant cuts to departmental budgets and current government expenditure are being made – a big problem for those who blamed our previous slow growth on spending restraint.

The bulk of the remaining fiscal restraint planned will now occur through cuts to departmental and benefit expenditure, and the Chancellor has essentially pledged that no more tax rises will be

necessary.[268] But for now, both government spending and the deficit remain stubbornly high, with the OECD forecasting general government borrowing of 7.1% of GDP for 2013 (an underlying primary deficit still of 4.3 percent of GDP). This means retrenchment to reduce the deficit will likely continue over the next five years.

Structural reforms

Pensions: The Coalition government has introduced changes to the state pension, with a flat rate state pension introduced from April 2016 and with the retirement age being increased to 67 between 2026 and 2028.[269] However, they have also made the state pension more generous by introducing a triple-lock (a guarantee to increase the state pension every year by the highest of inflation, average earnings, or a minimum of 2.5%) at a time of an ageing population (worsening the budget outlook).[270] Public sector pensions have also been reformed: pension in payment and pensions accrued are now uprated in line with changes in the Consumer Prices Index (CPI), instead of the Retail Prices Index (RPI). The government has also proposed to link the benefits to average salary, rather than final salary; and to link the pension age of the schemes to the state pension age.

Welfare: The government's flagship welfare reform program will introduce a "Universal Credit" from 2013 with generous earnings disregards and a single taper rate in place of myriad means-tested benefits.[271] This will create more certainty, transparency and simplicity in the benefits system, but doesn't actually improve the marginal tax rates faced by most on benefits. The government has also tightened eligibility criterion for several other cash benefits as part of the deficit reduction programme.

Regulation and employment law: Labor market flexibility has helped prevent much higher unemployment in the wake of the downturn. The government has extended flexibility in some areas as well, by reforming employment tribunals and extending the qualifying period for unfair dismissal claims from one to two years.[272] Yet at the same time, proposals for statutory pension auto-enrollment and flexible working legislation threaten the viability of small businesses going forwards. On regulation more broadly, the Coalition has undertaken measures such as a "Red Tape Challenge" and introduction of a "One-in, Two-out" rule for new regulation, but many

[268] Patrick Wintour, "George Osborne says deficit can be eradicated without further tax rises," *The Guardian*, July 11, 2013, http://www.theguardian.com/politics/2013/jul/11/george-osborne-deficit-tax-rises (accessed August 28, 2013).
[269] Department for Work and Pensions, "Reviewing the State Pension age," August 8, 2013, https://www.gov.uk/government/policies/reviewing-the-state-pension-age (accessed August 28, 2013).
[270] CityWire, "Q&A: what is the state pension 'triple lock' guarantee?" *The Lolly*, June 19, 2013, http://citywire.co.uk/money/qanda-what-is-the-state-pension-triple-lock-guarantee/a686253 (accessed August 28, 2013).
[271] Department for Work and Pensions, "Simplifying the welfare system and making sure work pays," https://www.gov.uk/government/policies/simplifying-the-welfare-system-and-making-sure-work-pays/supporting-pages/introducing-universal-credit (accessed August 28, 2013).
[272] Acas, "New qualifying period for unfair dismissals," March 2012, http://www.acas.org.uk/index.aspx?articleid=3733 (accessed August 28, 2013).

doubt the effectiveness of these in actually reducing the regulatory burden, not least because much regulation comes from the European Union.[273]

Challenges: The UK faces a population challenge in terms of demands for health and state pension going forward, but not one as great as other countries. Nevertheless, there has been little political discussion so far of the broader reforms to government provision that an ageing population will necessitate without crippling taxes. The government has set a pathway to reducing the size of government as a share of the economy, and should seek to see this through without increasing taxes. Indeed, a radical plan for tax simplification is urgently required. On the supply side, much more needs to be done to streamline the planning and development process, especially for housing,[274] new south-eastern airport capacity[275] and shale gas – which the UK has been slow to adopt. Child care, housing, energy markets in particular are overburdened by regulation and planning laws, inflating the cost of living. There would also be a big long-term payoff to abolishing national pay bargaining in the public sector, which leads to high public sector pay premiums in the poorer areas of the UK – crowding out private sector activity.[276]

Rebound

The UK's growth has been poor since the downturn. By 2013 Q2, the economy was still 3.3 percent below its pre-crisis peak (in 2013 Q1, GDP per capita was still 7.5 percent below its pre-crisis peak). Despite this period of stagnation, flexible labour markets have prevented much higher unemployment (the level is currently 7.8 percent and never exceeded 8.4 percent). But there are good signs a sustained recovery may now be under way.

The immediate threats to the recovery include a flare up in the on-going Eurozone crisis, an oil price spike arising from military intervention in Syria, and a credible Bank of England exit strategy from exceptional monetary policy once the recovery is locked in. Assuming none of these arise, one expects to see net trade and business investment improve in the coming years. All political parties have signed up to spending restraint, but this must be supplemented by much more radical thinking on the supply side of the economy and the tax code in order to raise productivity and the potential growth rate of the economy.

[273] Centre for Policy Studies, "Simplified planning, the need for sunset clauses," http://www.cps.org.uk/publications/reports/simplified-planning-the-need-for-sunset-clauses/ (accessed August 28, 2013).
[274] Centre for Policy Studies, "Simplified planning, the need for sunset clauses."
[275] Centre for Policy Studies, "Double up on Heathrow," http://www.cps.org.uk/publications/reports/double-up-on-heathrow/ (accessed August 28, 2013).
[276] Alison Wolf, "More than we bargained for: the social and economic costs of national wage bargaining," *CentreForum*, 2010, http://www.centreforum.org/assets/pubs/more-than-we-bargained-for.pdf (accessed August 28, 2013).