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Andreas Hoffmann and Holger Zemanek*

Financial Repression and Debt Liquidation in the USA and the Euro Area

Rising debt levels have caused a revival of financial repression in the euro area and the USA. The Federal Reserve directly represses US bond yields and assists in financing the state budget, resulting in an overall liquidation effect from falling bond yields of about three per cent of total government revenues and one per cent of GDP in 2011. In the euro area, the ongoing actions to contain the European debt crisis have also repressed interest rates, easing debt-servicing costs in all European countries and reducing the interest rate payments for the German government by about one to two per cent of total government revenues. This article argues that a slight rise in inflation could even liquidate German debt.

When governments repress financial markets, they aim to channel funds towards themselves.¹ Besides its well-known negative growth effects (e.g. McKinnon, Shaw),² Giovanni and De Melo³ show that financial repression can be effective in generating government revenues. For a

sample of 24 emerging market economies, they find the cross-country average of annual government revenue from financial repression to be two per cent of GDP (or nine per cent of government revenue) from 1972 to 1987.

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1 Instruments of financial repression include high reserve requirements, specialised public credit agencies, interest rate ceilings, and directed lending, capital controls, "moral suasion", financial transaction taxes or the prohibition of certain financial contracts; see R. McKinnon: *The Order of Economic Liberalization: Financial Control in the Transition to a Market Economy*, 1993, John Hopkins University Press; C. Reinhart, M. Sbrancia: *The Liquidation of Government Debt*, NBER Working Paper 16893, 2011. The effects of financial repression have been most prominently studied with regard to its implications for growth in emerging market economies; see R. McKinnon: *Money and Capital in Economic Liberalization: Financial Control in the Transition to a Market Economy*, 1973, John Hopkins University Press; E. Shaw: *Financial Deepening in Economic Development*, New York 1973, Oxford University Press; R. King, R. Levine: *Finance and Growth: Schumpeter Might Be Right*, in: *The Quarterly Journal of Economics*, Vol. 108 (1993), No. 3, pp. 717-737; M. Fry: *Emancipating the Banking System and Developing Markets for Government Debt*, 1997, Routledge.

2 R. McKinnon: *Money and Capital...*, op. cit.; E. Shaw, op. cit.

3 A. Giovannini, M. de Melo (1993): *Government Revenue from Financial Repression*, in: *The American Economic Review*, Vol. 83 (1993), No. 4, pp. 953-963.

Reinhart and Sbrancia⁴ document that throughout the Bretton Woods period, governments in many advanced economies also repressed financial markets to liquidate the high levels of domestic debt that had been accumulated by the end of World War II. To reduce debt-servicing costs, governments held nominal interest rates at a low level. Positive inflation rates turned real interest rates negative for much of the time from 1945 to 1971. Consequently, the negative real interest rate liquidated the market value of debt. Reinhart and Sbrancia⁵ report an annual liquidation effect of about three to four per cent of GDP for US and UK government debt during the Bretton Woods period. Given the higher inflation, the liquidation effect was even larger in countries like Australia and Italy.

In this paper, we argue that over the last three decades, governments and central banks have failed to implement countercyclical fiscal and monetary policies. This has increasingly limited the scope for policy reactions in crisis periods. Interest rates have fallen towards zero and governments have accumulated debt levels comparable to those after World War II. Since the start of the recent crisis, serious doubts about debt sustainability have revealed the necessity of fiscal adjustments. Just like at the end of World War II, governments have to find ways to correct expenditure-revenue misalignments in order to prevent a possible debt crisis, as is currently being experienced in some European countries.

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4 C. Reinhart, M. Sbrancia, op. cit.

5 Ibid.

Therefore, the USA and the euro area have more or less explicitly returned to financial repression to reduce debt-servicing costs. Building on previous literature, we argue that on top of the “safe haven capital effect”, the Federal Reserve represses US government bond yields and assists in financing the state budget. The lower debt-servicing costs are equivalent to three per cent of government revenues. We further estimate a liquidation effect of one per cent of the government debt in 2011. In the euro area, the ongoing actions undertaken to contain the European debt crisis have depressed interest rates and eased debt service in all eurozone economies. We find that German government revenues resulting from falling bond yields are equivalent to (at least) one to two per cent of government revenues. German government debt is likely to be liquidated if inflation increases.

The Accumulation of Debt Since the 1980s

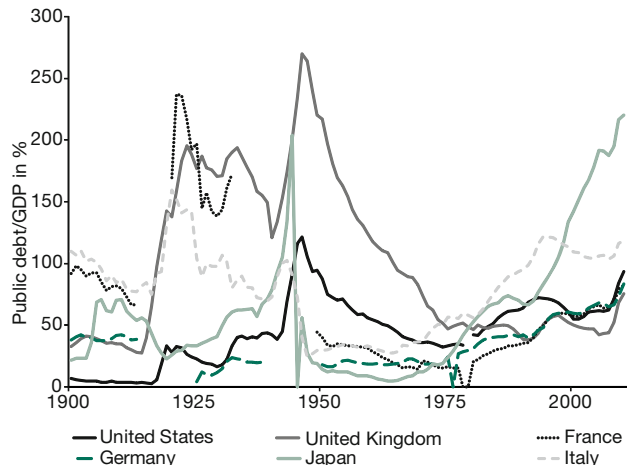
After a strong decline during the Bretton Woods period, public debt levels in the advanced economies reached about 20 to 40 per cent of GDP in the 1970s (see Figure 1). Thereafter, “Keynesian economics turned the politicians loose”.⁶ Particularly since the 1980s, asymmetric fiscal policy – characterised by extensive deficit spending in times of crisis without appropriate surpluses in boom periods – led to the ever-increasing accumulation of government debt depicted in Figure 1.

Figure 2 shows that the UK gave up countercyclical fiscal policy in the 2000s. In Italy and France, positive output gaps have never been accompanied by a fiscal surplus. Similarly, the USA ran large budget deficits almost the entire period (except from 1998 to 2001). In Japan, fiscal policy was countercyclical until 1990. Since then, rising deficits have added to the debt mountain almost independently from the state of the economy. Germany has managed a fiscal surplus only twice since its reunification. In all six countries, the average deficit-to-GDP ratios were much higher than the average GDP growth in the respective periods (mostly twice as high). Because of this asymmetric fiscal policy, the overall level of debt increased substantially from 1975 to 2011 (see Figure 1).

Like fiscal policy, monetary policy reactions have also been asymmetric since the 1990s. Central banks in the major economies have often cut interest rates decisively in times of crisis, but during recovery periods, they

6 J. Buchanan, R. Wagner: *Democracy in Deficit: The Legacy of Lord Keynes*, Indianapolis 2000 [1977], Liberty Fund, p. 4.

Figure 1
Government Debt Levels from 1900 to 2012



Source: IMF Historical Public Database, 2011.

have held interest rates too low for too long to stimulate growth.⁷

The development of interest rates in the advanced economies reflects the asymmetric monetary policies (see Figure 3). In Japan in the early 1990s, the bursting of the Japanese bubble economy made large interest rate cuts necessary. However, the economy seemed stuck in recession, and the policy response was insufficient.⁸ With the Japanese yen appreciating and markets finally stabilising during the short upswing in the years prior to the East Asian crisis, the political costs of increasing interest rates were perceived as too high. The appreciation of the yen would potentially have caused exports to decline. Instead, interest rates were further lowered to counteract the appreciation pressure.⁹ The monetary policy remained relatively easy and helped fuel excessive capital exports to East Asia, leading to the creation of bubbles there. In contrast, the repercussions of the East Asian crisis of 1997-98 on the Japanese banking and export sectors were followed by immediate interest rate cuts and bailouts of banks and enterprises. Japan has not yet recovered from the recession.

In the USA, the asymmetric pattern is linked to asset market developments and is particularly obvious when look-

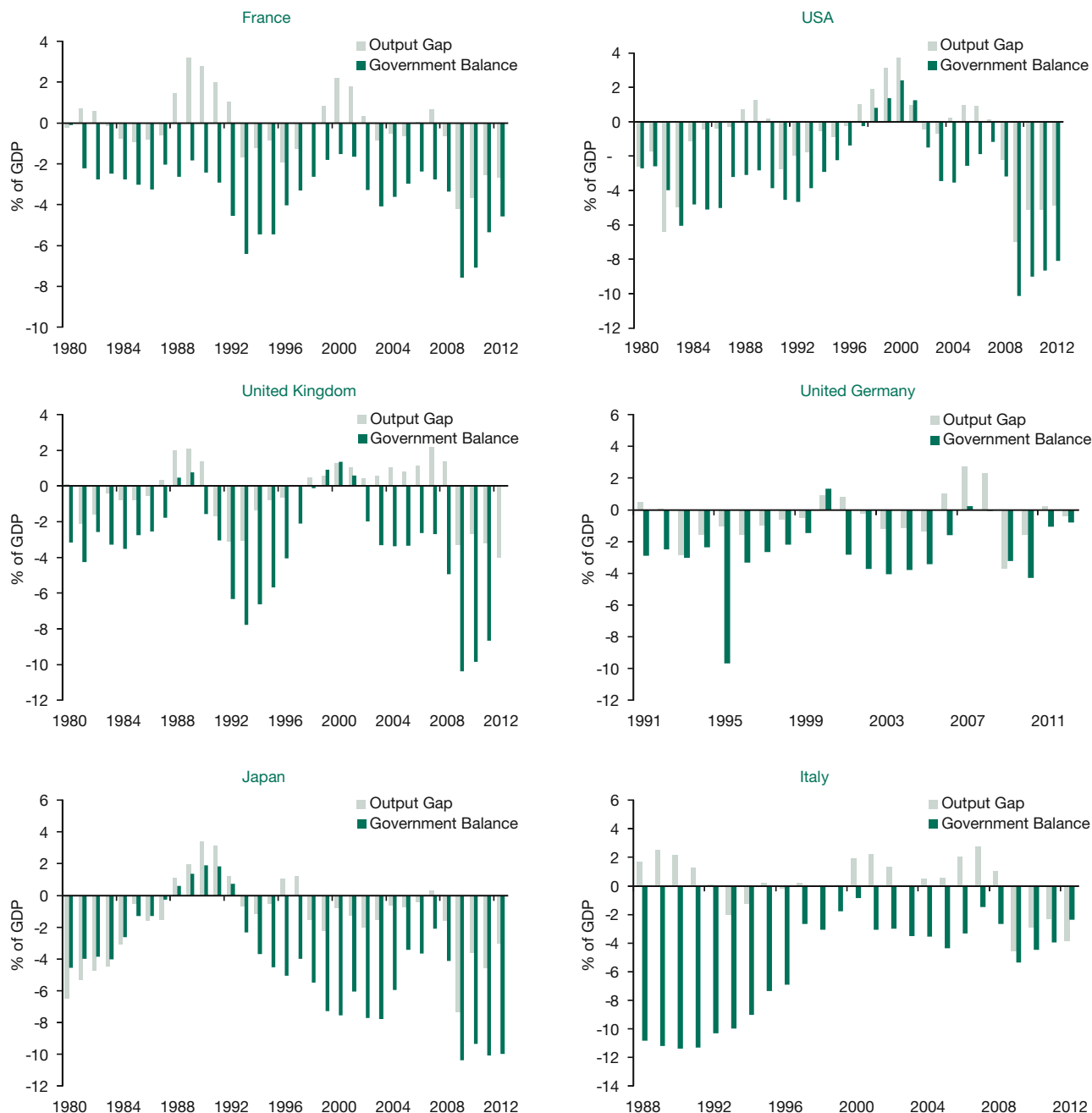
7 T. Taylor: *Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis*, 2009, Hoover Institution Press, Stanford University.

8 B. Bernanke: *Japanese Monetary Policy: A Case of Self-Induced Paralysis?*, in: R. Mikitani, A. Posen (eds.): *Japan's Financial Crisis and its Parallels to U.S. Experience*, Institute For International Economics, Washington DC, pp. 149-166.

9 R. McKinnon, K. Ohno: *Dollar and Yen: Resolving the Economic Conflict Between the United States and Japan*, 1997, MIT University Press.

Figure 2

Government Deficits and the Output Gap



Source: IMF, WEO, 2012. For the USA we use the Federal Historical Budget Data, 2012.

ing at the period following the bursting of the US dot-com bubble at the turn of the millennium.¹⁰ As Figure 3 illustrates, the Federal Reserve slashed the policy rate to an

10 S. Ravn: Has the Fed Reacted Asymmetrically to Stock Prices?, in: The B.E. Journal of Macroeconomics, Vol. 12, (2012), No. 1 (Topics), Article 14; A. Hoffmann, G. Schnabl: A Vicious Cycle of Manias, Crises and Asymmetric Policy Responses – An Overinvestment View, in: The World Economy, Vol. 34, (2011), No. 3, pp. 382-403.

unprecedented low of one per cent when the NASDAQ crashed in 2000. However, when the economy stabilised and growth picked up in 2003, the Fed hesitated to raise interest rates in order to promote employment and preserve growth. Overly low interest rates provided momentum to the build-up of the US subprime market bubble.¹¹

11 T. Taylor, op. cit.

The Bundesbank/ECB and Bank of England policy reactions to crises were similar to those of the Fed from the mid-1990s onwards.

Over time, the asymmetric monetary intervention schemes contributed to a structural decline in nominal and real interest rates in the advanced economies as shown in Figure 3, which also allowed the continuous accumulation of government (but also private) debt to be financed. Together with the falling debt-servicing costs, the burden (or opportunity costs) for deficit-financed fiscal expenditure decreased. The indirect co-ordination of fiscal and monetary policy has allowed Japan, for example, to finance a stock of government debt of 200 per cent of GDP. Despite mounting debt levels, the government's debt-servicing costs have remained moderate – at around 23 per cent of the central government budget – because 10-year government bond yields have fallen from 6 to 1.5 per cent since the 1990s.¹²

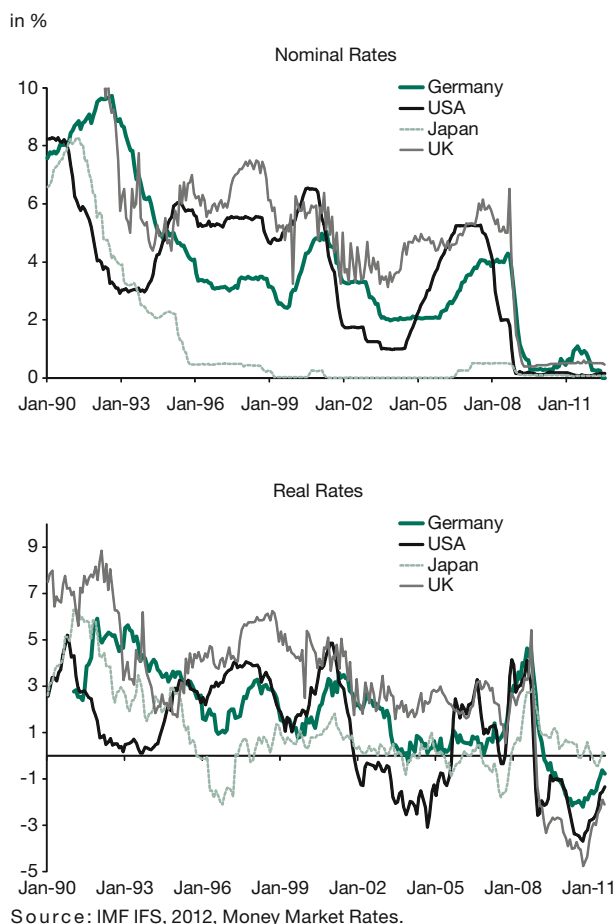
A rationale for such a policy can be found in history. Romer¹³ argues that the fiscal and monetary tightening from 1936 onwards culminated in the second phase of the Great Depression (in 1937-38). When the Federal Reserve tightened money supply to counteract inflation, commercial banks restricted lending, which created a credit crunch.¹⁴ Therefore, whenever central banks intend to increase interest rates and fiscal policy becomes more restrictive during the early phase of an economic recovery, there are always economists who warn of the potential of pushing the economy back into recession by making reference to the Great Depression of the 1930s.

Voters, who are also the taxpayers, seem to benefit from such asymmetric fiscal and monetary policies. At higher interest rates or with countercyclical fiscal policies, government austerity would have been necessary during the boom, resulting in higher taxes or fewer benefits. However, given the asymmetric policy, this was not necessary in the medium run. In contrast to private debt, which has to be repaid by the debtor, the beneficiaries (voters) implicitly pass on the deficits to future generations of taxpayers.¹⁵

The Impact of the Great Recession

The US subprime market crisis of 2007-08 led to financial crashes all over the world and culminated in the first major recession of the 21st century. From already (relatively) low levels, the major central banks slashed interest rates towards zero to stimulate the economy. Additionally, central

Figure 3
Nominal and Real Interest Rates



banks provided liquidity to financial markets via unconventional monetary policy measures or quantitative easing. Central bank balance sheets exploded. For instance, the Fed provided about US\$1.2 trillion of liquidity to financial markets between 2008 and 2011 through its two quantitative easing programmes, QE1 and QE2.

Because US interest rates had reached the zero-bound – just as had occurred before in Japan – monetary stimulus was flanked by fiscal measures to stabilise markets and employment. Moreover, as governments kept on spending during boom periods and tax revenues declined rapidly with the economic downturn, government debt levels jumped with the fiscal stimuli. From a historical perspective, government debt levels have reached a “peacetime” high. Today, debt levels are comparable to those during the Great Depression and in the aftermath of World War II (see Figure 1).¹⁶

¹² A. Hoffmann, G. Schnabl, op. cit.

¹³ C. Romer: The Lessons of 1937, *The Economist*, 18 June 2009.

¹⁴ C. Romer, op. cit.

¹⁵ J. Buchanan, R. Wagner, op. cit.

¹⁶ C. Reinhart, M. Sbrancia, op. cit.; C. Reinhart: The Return of Financial Repression, Banque de France, in: *Financial Stability Review*, 2012, No. 16.

The situation is difficult in most advanced economies. While in previous periods, central banks were able to stimulate markets and there was enough leeway for fiscal policy responses to boost economic activity, today this strategy does not seem to be working, as economic activity picks up only slowly in most advanced market economies. Falling fiscal revenues and increasing expenditures keep on adding to the debt mountain. Financing is sought for an ever-increasing amount of debt.

The problems at the periphery of the euro area indicate that countries have to find ways of coping with the burden of debt service. Conventional means of debt reduction bear substantial costs to governments (as they are unpopular with voters) and are almost impossible to implement given the current state of the economy. Growing out of debt seems unlikely when most economies recover slowly if at all. In addition, future growth will be unlikely to help reduce the debt-to-GDP ratio because countries usually end up on a lower growth path following severe crises.¹⁷ Furthermore, in times of crisis, rising taxes are not only unpopular with the voters but often unenforceable and perhaps counterproductive.¹⁸ On the other hand, austerity measures may endanger social harmony, as currently seen in Greece and Spain. Finally, defaulting on debt, as occurred during the Great Depression, is also by no means a desirable solution.

Financial Repression, Government Revenues and Debt Liquidation Since 2008

In line with Reinhart,¹⁹ we show that the USA and the euro area have returned to financial repression (as implemented during the Bretton Woods period) to reduce debt-servicing costs and to finance further crisis measures. While capital flight to safe haven countries like the USA and Germany already reduces their debt-servicing costs, central banks and governments also repress financial markets instead of making rapid adjustments. This allows the governments to delay necessary spending reductions and to stretch costs over a longer period of time. The government revenues from repressed bond yields for the USA and Germany since 2008 are illustrated below.

Debt Liquidation in the USA

In the USA, monetary and fiscal policy co-ordination enables the financing of an increasing level of government

debt. Besides providing liquidity to stabilise markets, the US Federal Reserve directly purchases government bonds to drive down bond yields. Since QE1 and QE2, US monetary policy can be characterised as acting to support US fiscal policy. The US Fed has been accumulating large amounts of US Treasuries on the asset side of its balance sheet. Particularly, the so-called “Bernanke Twist” can be interpreted as a return to financial repression in the USA. Within the scope of the programme, the Fed bought US\$400 billion of Treasury securities with remaining maturities of 6 to 30 years and sold Treasury securities for the same amount with remaining maturity of 3 years or less²⁰ to push down long-term government bond yields. The programme was extended in September 2012. Additionally, other investors and emerging market central banks bought large amounts of presumably safe US government bonds due to the ongoing crisis and a lack of alternatives. Thus, while the supply of Treasuries jumped because a large fiscal deficit required financing, the demand for Treasuries has increased even more as the Fed did all it could to signal that US bonds are safe.

Figure 4 captures the impact of government bond purchases on bond yields. Long-term interest rates for US Treasury securities (10-year bonds) have already fallen from about four per cent in late 2009, when policy rates first hit the zero bound, to around 1.5 per cent currently.

Because of falling bond yields, the US government was able to refinance new debt at lower costs. The burden of debt service remained moderate for the Obama administration. The government’s benefits from repressed bond yields are illustrated in Figure 5. With respect to the effective debt-service interest rate from 2008, financial repression and high demand for US Treasury securities allowed the US government to avoid debt-servicing costs of about US\$172 billion in 2011. This accounts for 3.6 per cent of total government revenues or one per cent of GDP.

Figure 6 illustrates that given positive inflation rates, not only the nominal but also the real costs of government debt sharply declined in 2010 and 2011. In 2011, the real costs of debt turned negative for the first time. At this point, inflation was liquidating debt. Still, the government accumulated additional debt. New debt issuance exceeded the liquidation effect. Our simulation in Figure 6 also suggests that the US government benefits from higher rates of inflation as long as investors are willing to hold low real yield bonds. Based on both the IMF inflation forecasts and a fictional rate of 2.5 per cent per annum for 2012, our simulation in Figure 6 suggests that debt liquidation has continued into 2012.

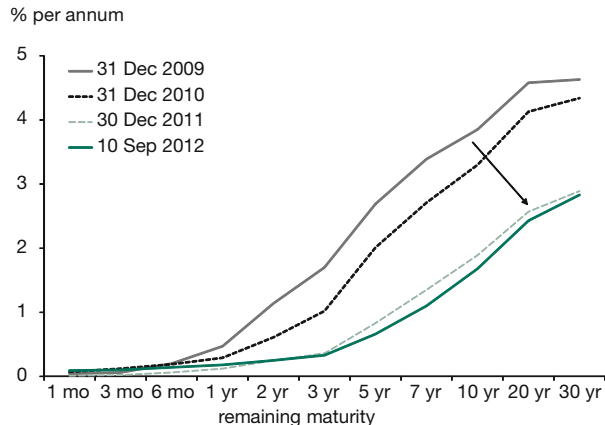
17 C. Reinhart, V. Reinhart: After the Fall, Federal Reserve Bank of Kansas City Economic Policy Symposium Volume, Macroeconomic Challenges: The Decade Ahead at Jackson Hole, Wyoming, on 26-28 August 2010.

18 C. Romer, *op. cit.*

19 C. Reinhart: The Return of Financial Repression..., *op. cit.*

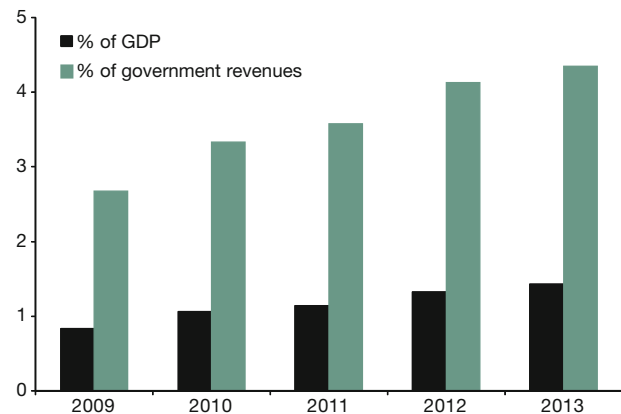
20 FED: FOMC Statement, 21 September 2011.

Figure 4
Development of the Yield Curve for US Treasury Securities



Source: US Department of the Treasury, 2012.

Figure 5
US Government Benefit from Falling Debt-Servicing Costs

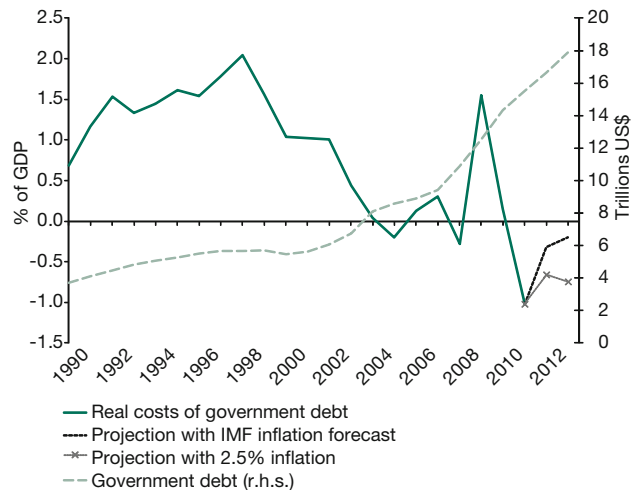


Source: IMF and Congressional Budget Office. Own calculation: We assume the effective debt-servicing rate of 2008 for the following years.

Over the next years, the revenues from low bond yields may further increase if inflation picks up. According to the Michigan Consumer Sentiment Index, inflation will be about three to four per cent in the medium run. Indeed, there is some political and academic support for higher inflation rates in the USA. Recently, Blanchard et al.²¹ argued in favour of raising the inflation target to e.g. four per cent in periods of stability to help avoid the zero interest rate bound and provide room for interest rate cuts in times of crisis. Furthermore, while the Fed has recently announced that it will not “intentionally” raise inflation rates by shifting the focus of monetary policy to the employment target, inflation rates of four per cent would cer-

21 O. Blanchard, G. Dell’Ariccia, P. Mauro: Rethinking Macroeconomic Policy, IMF Staff Position Note, 12 February 2010.

Figure 6
Simulation of US Debt Liquidation



Source: IMF and Congressional Budget Office. Own calculation: Costs of debt are calculated by net interest payments divided by net government debt.

tainly liquidate substantial amounts of debt and support fiscal policymakers in terms of financing crisis spending.

The Reduction in Debt-Servicing Costs in Europe

In Europe, the financial crisis translated into a sovereign debt crisis as investors started to doubt the sustainability of government debt in euro area periphery countries. Capital started to flow out of Greece, Ireland, Portugal, and later Spain and Italy. The destination was – above all – Germany, as was made obvious by the Target 2 (im-)balances.²² The repatriation of German capital and the capital flight from South to North Europe sharply increased government bond yields in the euro area crisis economies.

Having already slashed short-term interest rates to an all-time low to stabilise the financial system in crisis countries, the ECB stepped in and started to purchase government bonds from periphery countries in secondary markets to bring down bond yields. Through the end of 2011, the ECB had purchased government bonds worth €210.5 billion to stabilise government finances.²³ This accounts for more than 30 per cent of the general debt of Greece, Ireland and Portugal. At the same time, structural reforms have been implemented to signal a turnaround in fiscal policy and thereby calm financial markets.

22 J. Abad, A. Löffler, H. Zemanek: TARGET2 Unlimited: Monetary Policy Implications of Asymmetric Liquidity Management within the Euro Area, CEPS Policy Brief 248, 2011; S. Merler, J. Pisany-Ferry: Sudden Stops in the Euro Area, Bruegel Policy Contribution 06/2012.

23 ECB: Annual Report 2011, European Central Bank, Frankfurt am Main, 2012.

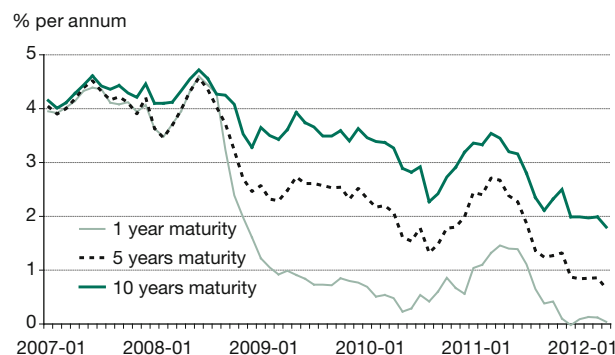
Until recently, the political uncertainty in Italy and Spain, rumours of a Greek euro exit and the economic rebound of the German economy combined to accelerate the capital flight. To contain rising government bond yields in Southern Europe, the ECB recently announced an unlimited government bond purchasing scheme,²⁴ which might imply government bond yield caps.²⁵ At the same time, the euro area periphery countries have imposed indirect restrictions on financial markets, which tend to hamper transfers from South to North.²⁶

The repressive crisis measures of the ECB and the fiscal packages to stabilise the periphery economies have had spillover effects on Germany. In contrast to rising government bond yields in the periphery of the euro area, both the crisis prevention measures (which prevent a bust of the German economy as well as an instantaneous rise in debt due to state default in the euro area or recapitalisation expenses for banks) and the capital flight from the periphery to Germany have caused a steady decline in German government bond yields (see Figure 7).

The differences with respect to the other euro area members are striking. While the average yield on euro area government bonds with a remaining maturity of 10 years was about 4.2 per cent in 2011, German bonds yielded only 2.8 per cent. By April 2012, the 10-year yield had declined to just 1.8 per cent. In May 2012, the German government issued a two-year bill with virtually no interest rate. German government bonds continue to be in high demand.²⁷

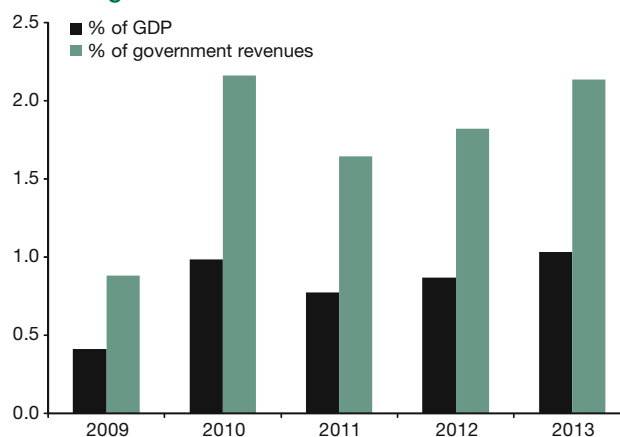
As in the USA, declining German bond yields reduce the average debt-servicing costs in Germany. Compared with the effective debt-servicing rate in 2008, we estimate German government revenues from falling debt-servicing costs to be about 1.5-2 per cent of government revenues per annum, or one per cent of GDP (see Figure 8). This is equivalent to about €19 billion. Given the inflation rate of 2.4 per cent, Figure 9 shows that the real costs of German government debt declined to just 0.7 per cent of GDP in 2011. The fiscal situation has eased substantially. However, despite these favourable conditions, government debt levels continue to soar, albeit at a slower rate. While the European Commission²⁸ forecasts relatively low inflation rates for Germany, a small rise in inflation to about three

Figure 7
German Government Bond Yields Since 2007



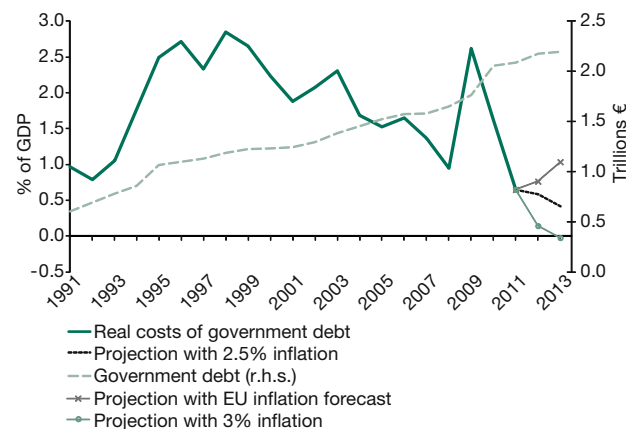
Source: Deutsche Bundesbank, 2012.

Figure 8
German Government Benefit from Falling Debt-Servicing Costs



Source: Eurostat, IMF, European Commission. Own calculation assuming the effective debt-servicing rate of 2008 for the years afterwards.

Figure 9
German Government Debt and the Real Costs of Debt



Source: Eurostat, IMF, European Commission. Note: Costs of debt are calculated by interest payments divided by government debt. Projections are based on the European Commission Spring Forecast 2012.

24 ECB: Technical features of Outright Monetary Transactions, Press Release 6 September 2012, European Central Bank, Frankfurt am Main, 2012.

25 Reuters: ECB may set bond yield target, but keep it quiet, Reuters online, 23.8.2012.

26 C. Reinhart: The Return of the Financial..., op. cit., p. 44.

27 Wall Street Journal: Germany to Sell Zero Coupon Bonds for First Time, Wall Street Journal Online, 2012.

28 European Commission: European Economic Forecast, Autumn 2012.

per cent would be enough to turn the real costs of debt negative and liquidate German government debt in 2013 (see Figure 9).

We believe a rise in German inflation is not unlikely. Recently, it has been argued that German inflation rates of four per cent for about five years would be able to solve the European crisis.²⁹ This is certainly feasible. As the ECB must target average euro area inflation, German inflation may well be above two per cent as long as the other countries experience low rates of inflation. Furthermore, European politicians might welcome higher rates of inflation in Germany for two reasons: first, they will help to finance the crisis measures; second, wage and price increases in Germany may help adjust the intra-euro area current account imbalances.

Conclusions

In this paper, we have argued that over the last three decades, asymmetric rather than countercyclical monetary and fiscal policies in boom and bust periods have built up large public debt levels in many advanced economies. Today, when debt levels have reached levels comparable to those after World War II, there are serious doubts about debt sustainability. We have argued that in the current economic situation, governments struggle to find ways of correcting the expenditure-revenue misalignments and reducing overall debt levels.

Therefore, the USA and the euro area have returned to financial repression. Central banks in troubled economies intervene heavily in bond markets. They are supported by bond purchases from emerging market central banks from all over the world and safe haven capital flight. Governments benefit from the lower refinancing costs.

The US government was able to reap revenues of up to three per cent of its total government revenues due to the reduction in debt-servicing costs. In 2011, government debt liquidation amounted to one per cent of US GDP. For the euro area, we have shown that ECB measures to contain the European debt crisis depressed bond yields below market rates and eased debt servicing costs in all European countries. We have found that the German government avoided interest payments due to a fall in its effective debt-servicing costs of about one to two per cent of total government revenues in 2011. A slight rise in inflation could begin to liquidate German government debt.

²⁹ S. Schmitt-Grohé, M. Uribe: The Case for Temporary Inflation in the Eurozone, unpublished manuscript Columbia University, August 2012, http://www.columbia.edu/~mu2166/temporary_inflation/temporary_inflation.pdf