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EMPLOYMENT-LED RECOVERY FOR EUROPE: AN ALTERNATIVE TO AUSTERITY

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Abstract:
Employment generation should be a high priority for European policy makers, in particular in light of the extremely high levels of unemployment in many European countries in the aftermath of the globla financial ciris. Using the Cambridge Alphametrics Model (CAM) this paper compare and contrasts two policy scenarios: an austerity scenario and an employment-focuses scenario. In the the austerity scenario we assume taht the current basic direction of austerity policies is maintained through 2030. On the other hand, in the employment-focused scenario we assume increases in government spending, government income and private investmetn as the strategic basis to generate substantial increases in GPD and emplyoment in Europe. Our alternative employment-led recovery scenario also assumes that the European budget will be gradually increased and directed to spur public and private investment across Europe, and particularly in the Eurozone periphery. Results generated by the CAM model for these two scenarios show that European nations would experience significantly higher growth adn employment rates under our alternative expansionary employment-focused scenario.

Keywords: Austerity, employment, GDP growth, EU budget, investment, government spending, global financial crisis.

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1. Introduction

Employment generation should be a high priority for European policy makers, particularly in light of the unbearably high levels of unemployment levels in many countries in the aftermath of the global financial crisis.

Whilst main economic commentators have attribute the problems of Europe, and in particular of the Eurozone Periphery (Greece, Italy, Spain, Portugal) to fiscal profligacy, private overspending and labour market bottlenecks a number of commentators have highlighted the structural and systemic nature of the crisis that is afflicting Europe.

In particular, these commentators highlight how the cause of economic stagnation and unemployment in Europe rests primarily on the shift of economic policy priorities from a commitment towards full employment to an excessive focus on price inflation, financial market liberalisation and labour market flexibility in Europe since the early 1980s.

In such a context, fiscal policies have been perceived by the majority of economists as a mere tool to balancing budget rather than functioning as an effective stabilization mechanism and countercyclical tool. This position had severe negative consequences for aggregate demand in several European countries. Europe has become an area of severe imbalances with Germany on the one hand having significant current account surpluses and on the other South Europe financing these surpluses with their current account deficits.

The recognition of the structural and systemic nature of the economic problems faced by Europe lead to a firm rejection of austerity policies and increased labour market flexibility as a tool to restore economic growth, create jobs and reduce government debt and budget deficits. Instead, it is increasingly argued that the way out of the crisis and economic stagnation in Europe is through the adoption of a much more expansionary macroeconomic framework both at national and at European levels.

Using the Cambridge-Alphametrics global macroeconomic (CAM) model this paper explores the economic feasibility of such an expansionary macroeconomic policy scenario as an alternative to current austerity policies. Based on the existing debated on alternative policy proposals for Europe, paper compares and contrasts two policy scenarios: an *austerity scenario* and an *employment-focused scenario*.

In the baseline scenario we assume that the current basic direction of austerity policies is maintained through 2030. This implies reduced government expenditure and increased government revenue to slush down budget deficits and reduce government debt below the 60% as GDP threshold. On the other hand, in the employment-focused scenario we assume increases in government expenditure, government income and private investment through 2030 as the strategic basis to generate substantial increases in GDP and employment in Europe. The scenario also assumes that the European budget will be gradually scaled up and directed to spur public and private investment across Europe, and particularly in the Eurozone periphery. Finally, in order to deal with the problem of debt overhang in the Eurozone Periphery we assume that existing sovereign debt above 60% of GDP is pooled into a European Redemption Fund in order to reduce interest rate payments and free up additional resources.

In order to carry out comparative analysis, we divide Europe into five blocs: Scandinavia (Denmark, Finland, Norway and Sweden), Core Eurozone (Germany, Belgium, France, Luxemburg and The Netherlands), Eurozone Periphery (Greece, Italy, Spain and Portugal), East Europe (Poland, Hungary, Czech Republic, and Slovakia), and the United Kingdom.

We believe that this paper represents first and original attempt to quantify and assess the economic feasibility of a coherent set of alternative economic proposal for Europe. Whilst, there has been an intense discussion on alternatives to austerity there has not been a

systematic assessment of the impact of such policies in the medium to long-term period in Europe. This paper moves towards this direction and aims at filling this gap.

Results generated by the CAM model for these two scenarios show that European nations would experience significantly higher growth and employment rates under the expansionary employment-focused scenario compared to the austerity scenario. Furthermore, projections of government net lending/net borrowing for the employment focused scenario show for the majority of the European blocs reductions to levels below 1% of GDP by 2030. As such, this strategy cannot be dismissed on the basis of fiscal irresponsibility.

In addition, the combination of higher economic growth and the implementation of a European debt redemption mechanism lead to a significant reduction in debt as percentage of GDP for the highly indebted European countries. The debt reduction under the employment-focused scenario results to be much more significant than the austerity scenario.

The paper concludes by stressing that such alternative employment-focused recovery strategy is indeed feasible and produces more positive results than the current austerity policy scenario, not only in terms of growth and employment but also in terms of debt reduction. However, we argue that this intervention implies substantial greater EU funding of public investment, greater lending for private investment and a strong debt redemption mechanism for the heavily indebted countries of the Eurozone Periphery.

The paper is structured as follows: Section 2 briefly reviews the causes of the crisis in Europe and its policy responses, Section 3 explains in great detail the CAM model, Section 4 highlights the core assumption of the austerity and employment-focused scenarios, Section 5 present the macroeconomic results of the two scenarios under investigation and Section 6 concludes.

2. Cause of the Crisis in Europe and Policy Responses

Europe is in its deepest crisis of the post-war Era. European economies face stagnation, rising unemployment and increasing divergence in trade competitiveness. Many economists and policy makers have attributed the problems of Europe, and in particular of the Eurozone peripheral countries to fiscal profligacy, private overspending and labour market bottlenecks (e.g. Corsetti and Dedola 2011, Dionysios et al 2012, Lane 2010 and Fabrizio and Mody 2006).

Confronted with sharply rising public debt levels and widening budget deficits, many of the weaker European countries have been compelled to implement harsh fiscal austerity policies. Across the Eurozone periphery, fiscal consolidation, in particular cuts to government expenditure on social programmes, have been presented as the only way for individual countries to bring government deficits and debt levels back within the limits imposed by the Stability and Growth Pact. In the UNITED KINGDOM, the coalition government has implemented swingeing public spending cuts and welfare reforms.

However, it is becoming increasingly evident that austerity policies have not led to the promised results. Despite spending cuts and increases in taxations, government debt levels have continued to rise: OECD figures show government debt to GDP ratios rising for Italy, from 126% in 2012 to 133% in 2013, for Spain from 85% to 92%, and for the United Kingdom from 88% to 92% over the same period.

Unemployment, especially among the young, is at record levels and there appears little hope of improvement in the near-term, given the limited potential for economic growth.[1]

[1] The 2013 Global Employment Trends report of the International Labour Organization predicts that continued recessionary conditions in Europe and other developed countries will result in high unemployment rates in the foreseeable future. For the period 2014 to 2016 unemployment rate is forecast to remain at 8.4% in developing economies (including Europe) compared to a pre-crisis level of 6.7% in the early 2000s (ILO 2013).

Recent IMF World Economic Outlook estimates for the Euro area forecast average GDP growth of 1.4% for the period 2014-2018 compared to an average pre-crisis GDP growth of 2.2%. In the United Kingdom, growth rates for the same period are predicted to be slightly higher at around 2%, however this growth appears to be based on the shaky foundations of increases in debt-financed private consumption.

The response of the majority of economists and policy makers to the dire economic situation and projected negative trends in employment and growth across Europe is that appropriately paced fiscal consolidation should go hand in hand with "growth-enhancing" supply-side policies (Buti and Padoan 2012). To this end, a series of initiatives promoting "labour market flexibility" and downward wage adjustments have been advocated as a part of the structural reform package, with the stated aim of increasing growth and employment, whilst simultaneously correcting deficits (European Commission 2012).

However, a minority of economists and policy makers have instead highlighted the structural and systemic nature of the crisis that has afflicted Europe. Economic stagnation and divergence in the European Union is not the result of fiscal irresponsibility and profligacy by peripheral European countries—in several of the years in the period before the crisis, Germany ran a larger deficit than Spain, Portugal or Italy. Italy and Spain ran a primary *surplus* for most of the 1990s and 2000s.

Instead, the crisis and recession has its roots in the mercantilist trade policies pursued by Germany which, locked into a currency union and unable to adjust exchange rates, the rest of the Eurozone has been unable to resist. These fractures, exacerbated by the financial liberalisation which started in the 1980s and in the shift in economic policy priorities from a commitment to full employment, towards a focus on price inflation and labour market flexibility, finally erupted into full-blown crisis in the Eurozone in the aftermath of the sub-prime meltdown in the US (Griffith-Jones and Ocampo 2011, Petit 2012, Bellofiore 2012).

Since the early 1980s, academic opinion shifted strongly against the use of fiscal policies as a stabilisation tool. Deficit spending is perceived as ineffective in affecting the level of economic activity and act as a countercyclical mechanism (Arestis and Sawyer 2010). The restriction of national fiscal policies has been particularly severe for the Eurozone. Limitations to national policy space have not been accompanied by the introduction of a significant and effective common fiscal policy at the European level. The Maastricht Treaty, which enshrined in law the basic economic principles of the common currency, and the various pacts that have followed, have insisted upon the role of coordination and monetary integration without any reference to a common fiscal policy (Petit 2012).

As such, the size of the European budget has remained small at around 1 percent of combined EU member states' GDP. Moreover, the EU budget must be balanced, is too small to operate as an effective stabilizer and can thus play no role as a counter-cyclical instrument (Arestis et al. 2001). Aside from the small proportion assigned to structural funds, the budget cannot provide for significant transfers between rich and poor nations of the union (Irvin and Izurieta 2011).

Monetary union, by design, has thus removed three essential policy instruments from the domain of national policy makers: monetary policy, exchange rate management and fiscal policy, as well as serving to significantly weaken progressive labour and welfare policies (Irvin and Izurieta 2011). Thus, all costs of adjustment to the mercantilist policies adopted by Germany are forced onto the labour market of the peripheral countries. Recession is the only available mechanism in the face of the asymmetries embedded in the institutional arrangements of the Union (Lapavitsas et al. 2010).

Despite the dominance of these pre-Keynesian views, a discussion on alternative policy proposals for an employment-focused economic recovery across Europe has emerged among progressive economists. These policies are based on the recognition that austerity

policies are detrimental for Europe and that jobs and growth are created only with the adoption of an expansionary macroeconomic framework.

Examples of policy proposals include initiatives such as reconsideration of the role and size of the European budget. It is argued by Arestis and Sawyer (2010) that this should be increased to at least 4-5 percent of GDP of member states' if monetary union is to be viable in the face of the inbuilt structural asymmetries. With such an expanded budget, the EU could allocate substantially greater investment funds to the peripheral countries on the basis of fiscal transfers from surplus European countries (McKinley et al 2013).

A wide range of suggestions have also been put forward on how to stabilise debt markets for the peripheral Eurozone countries, centred on various types of joint issuance or guarantees of debt. To this end, the idea of a European Redemption Fund has been put forward by some economists in order to address the debt overhang faced by some Eurozone countries (e.g. Bofinger et al. 2012, Buchheit et al 2013). The main idea behind this fund is to reduce financing costs by accepting join and several liabilities and to pass the low interest rates on to participant countries when buying their debt in the primary market (Bofinger et al 2012).

An employment-focused recovery requires increases in both public and private investment and significant fiscal expansion at national level. To this end a series of initiatives such as enhancing the role and lending of the European Investment Bank (EIB) and national development banks, and a more efficient allocation of European Structural funds at national level could play a role in reversing the historically low level of investment across Europe (Griffith-Jones et al. 2012). Increases in EIB capital and a better allocation of EU structural funds could have significant leverage effects. For instance, Griffith-Jones et al (2012) demonstrates that a doubling of EIB capital could generate additional loans of around 95 billion euros within two years from its increase. Further, a reallocation of 5 billion euros in

the EU structural funds as risk buffer would lead to an additional 10 billion euros annual lending from the EIB to finance infrastructure projects (project bonds) as well as promote innovation (Griffith-Jones et al 2012).

In this paper we assess the economic viability of such an expansionary macroeconomic framework. Using the Cambridge-Alphametrics Model (CAM) we explore a policy scenario for Europe which combines fiscal expansion at the country level with enhanced financial support from the EU budget. The objective of this policy scenario is to spearhead an employment-focused economic recovery. The outcomes are contrasted with a scenario of continued austerity policies in Europe.

3. The Cambridge Alphametrics Model

The Cambridge-Alphametrics Model (CAM) is a global macroeconomic policy model developed by Francis Cripps. Much of the underlying methodology, in particular, the stock-flow accounting methodology, originates in work done by Cripps in collaboration with Wynne Godley and others at the Cambridge Economic Policy Group in the 1970s (Cripps & Godley, 1976; Godley & Cripps, 1983). The CAM was originally developed for use by United Nations agencies, such as UNDP and UN DESA. The model was subsequently used as the basis for the EC FP7-funded project "AUGUR: Europe in the World in 2020".

The CAM is designed for the purpose of generating long-term policy-oriented projections. Within the model, the global economy is divided into a number of blocs, each representing either a single country or a group of countries. Europe is divided into four blocs and one country: Core Eurozone (Austria, Belgium, France, Germany, Luxemburg, and The

Netherlands), Eurozone Periphery (Greece, Ireland, Italy, Spain and Portugal), East Europe (Hungary, Poland, Czech Republic, Slovakia), and the United Kingdom.

At the centre of the model are a set of accounting identities which link the balance sheets of each geographical bloc via a structure of national and international cash flows. This accounting framework ensures that projection results are consistent both in terms of the internal bloc structure, and at the level of international transactions. The series of stock and flows which make up this accounting framework are populated with historical time-series data going back to 1970. These series are derived from a number of international macroeconomic datasets, primarily the Word Bank's World Development Indicators (WDI). As well as domestic macroeconomic time-series data, the model includes detailed accounting of international trade, with separate series for trade in services, manufactures, commodities and agricultural.

The accounting framework is used to project forward from the historical data, in such a way that resulting set of projected figures are stock-flow consistent, that markets clear or inventories accumulate and that total global trade shares sum to unity. Augmenting the stock-flow accounting identities are a set of behavioural equations. The coefficients and fixed effects of these behavioural equations are mostly determined by regression analysis of the historical time series data, although in some cases it is necessary to impose coefficients on these equations where historical data does not expose statistically significant relationships where theory would lead us to expect them.

It should be emphasised that the model assumptions, and in particular the behavioural equations, are not based on pricing behaviours derived from optimisation at the microeconomic level so that the system is always in transition towards some exogenously-determined long-run equilibrium. In particular, the model does *not* assume that in the long run the world economy tends towards a situation of full-employment equilibrium. As such,

notions such as the natural rate of interest have little relevance since, even in the absence of trade imbalances or government deficits, there is no mechanism by which ex-ante desired saving and investment will become equal. Likewise, the notion of equilibrium real exchange rates have little meaning, other than in the very loose sense of being that rate at which, given all the other variables, the external flow position is in balance. Instead of tending towards some long-run equilibrium, the system exhibits path dependency: the long run position is thus determined by the current and future values of state variables. Policy decisions in the present can have permanent long-run effects on the outcome of the model.[2]

The total number of equations in the model is very large, and includes series for many variables which do not directly concern us here, such as energy use, migration and others. It is thus not feasible to provide a full account of the model in this paper. Instead we describe the main accounting structures and highlight those behavioural assumptions which are of most relevance for the current exercise.

A convenient starting point for a description of the model structure is given by the flow-of-funds accounting matrix shown in Table 1. This table makes use of the accounting framework developed by Godley & Lavoie (2007) to summarise the cash flow relationships which make up the CAM model.[3] The four sectors which comprise each block—the private sector, the government, banks and the foreign sector—are each represented as a single column in the flow matrix. The rows of the matrix then represent cashflows arising either from real or from financial transactions.

The matrix is divided into two main sections. Real transactions appear in the section above the row, "net financial balance" while financial transactions occur in the section below. The entries which appear in the "net financial balance" row are accounting memos which net out the real "sources" and "uses" of funds for each sector, to give total real borrowing or

[2]The model thus encapsulates Kalecki's assertion that the long run is just the accumulation of a sequence of short-period positions.
[3]See Michell (2012) for a concise overview of flow-of-funds accounting.

lending for each sector (or, in alternative terminology, the "net acquisition of financial assets"). Since all financial balances must sum to zero, and the banking system is assumed to operate as a pure intermediary—thus having a net financial balance of zero—this row captures the well-known macroeconomic accounting identity that the difference between the saving and investment of the private sector must equal the sum of the government fiscal position plus the trade balance:

$$(S-I)=(G-T)+(X-M) \qquad (1)$$

Each entry in the flow matrix each corresponds to a cash flow, denominated in inflation-adjusted domestic currency prices. The sign of the entry in the matrix denotes whether the flow is a source or a use of funds—whether it is a source of income or a category of expenditure for real flows, and whether it corresponds to a liability or asset for financial flows.

If we trace the real flows through the matrix starting with the top row, total income for the bloc is divided into private sector income, Y_P and government income (net taxes and transfers), Y_G. In the foreign sector, the trade balance and the balance of transfers and income are recorded separately. Since all international trade is accounted for in US dollars, these entries are divided by the real dollar exchange rate to give domestic currency values. The trade balance is composed of the sum of the balances of trade of services, manufactures, agricultural goods and raw materials which, for the sake of simplicity, are not shown separately. For the private and the public sector respectively, the real saving of the sector is given by the difference between income and consumption and government current expenditures respectively. The net financial balance for the private sector is then real saving minus investment, while for the government sector it is the same as real saving. Summing the

trade balance and the balance on current income and transfers gives us the current account, which is equal to the negative of the net financial position of the foreign sector.

Table 1: Transactions and flow-of-funds matrix: sources +ve, uses -ve.

	Private	Govt	Banks	Foreign	Total
Income	$+Y_P$	$+\mathbf{Y_G}$			
Trade Balance				**-TB$/rx**	
Net income & tr.				$-_{\mathbf{B}}$**IT$/rx**	
Consumption	$-C$				
Govt Exp		$-\mathbf{G}$			
Saving	$+\mathbf{S_P}$	$+(Y_G - G)$			
Investment Inv	$-\mathbf{IV}$				
Investment Fix	$-\mathbf{I_P}$				
Net fin. balance	$[NLP]$	$[NLG]$	$[0]$	$[-CA\$/rx]$	0
Chge in Deposits	$-_I DP$		$+_I DP$		0
Chge in Loans	$+_I LN$		$-_I LN$		0
Chge in G. deps.		$-_I A_{GF}$	$+_I A_{GF}$		0
Chge in G. Bonds	$-_I L_{GO}$	$+_I L_G$	$-_I L_{GF}$		0
G. asset trans.	$+_I A_{GO}$	$-_I A_{GO}$			0
Chge in Reserves			$-_I R\$/\mathbf{rx}$	$+_I R\$/\mathbf{rx}$	0
Chge in Ext. Assets	$-_I A_{XO}\$/\mathbf{rx}$			$+_I A_{XO}\$/\mathbf{rx}$	0
Chge in Ext. Liabs	$+_I L_X\$/\mathbf{rx}$			$+-_I L_X\$/\mathbf{rx}$	0

The financial flows shown in the bottom half of the matrix are more straightforward. Each column of flows represents the sum of net acquisitions of financial assets and liabilities, and must thus sum to the net financial balance of the sector implied by the real sector financial position. The types of financial flows included in the model are listed at the left hand of the side of the matrix. Each transaction takes place between two sectors, with the exception of the issuance of government debt which may be held either by the private sector or the domestic banking system.[4] Since the total net issuance of any type of financial liability must

[4]International holdings of public debt are not excluded, but are netted out from the international financial position of the private sector.

be matched by an equal accumulation as financial assets by other sectors, each row of the financial flow table must sum to zero.

While these entries are mostly straightforward, one entry requires addition discussion: government asset transactions ($_{I}A_{GO}$). In terms of the historical data, this represents a residual category which captures the difference between reported net debt issuance, and the government deficit. In practice, this entry can include a large number of possible items, for example proceeds from privatisation of public assets, costs of bank recapitalisations and any other government asset transactions. The entry is thus required in order for the historical account to balance, but since there is little basis upon which to determine the size of this entry in the case of future projections, in the simulation exercises described in this paper we fix this entry to zero, effectively removing from the transactions matrix. This simplifies the accounting of the relationship between the government deficits, interest payments, and government debt, allowing for a clear interpretation of the results we present. However, it may imply that projected government debt levels are higher than what would actually be reported by governments, because the kinds of off-balance-sheet "window-dressing" operations which are capture by this item are regularly used by governments to reduce apparent levels of outstanding debt.

Alongside this flow matrix, a balance sheet for each sector is maintained, with columns containing entries for the same macroeconomics sectors as in the flow matrix. The bloc balance sheet is shown in Table 2. The rows of the balance sheet are divided into three sections: real assets, financial assets and liabilities, and net worth. The first category contains only one item, the real capital stock of the private sector (which includes, for example, land, housing and all other tangible assets). The model thus abstracts from ownership of capital assets by government.[5] The majority of the balance sheet is thus composed of financial assets

[5]This is primarily because of the lack of availability of data from which such a series could be constructed.

and liabilities. Each of these financial stocks corresponds to a flow entry in the transactions matrix. Finally there is a net worth entry for each sector: private wealth, W_P, government net debt, N_{GF}, and the net external position, $N_X\$/rx$, again accounted in dollars divided by the real dollar exchange rate. This corresponds to the "international investment position" reported in the accounts of the IMF and others. Accounting rules imply that a total net worth of the sector can thus be calculated, as shown in the bottom right of the table.

Table 2: Stocks: assets +ve, liabilities -ve.

	Private	Govt	Banks	Foreign	Total
Capital	$+K_P$				$+K_P$
Deposits	$+DP$		$-DP$		0
Loans	$-LN$		$+LN$		0
G. deps.		$+A_{GF}$	$-A_{GF}$		0
Bonds	$+L_{GO}$	$-L_G$	$+\mathbf{L_{GF}}$		0
Reserves			$+\mathbf{R\$/rx}$	$-R\$/\mathbf{rx}$	0
Ext. Assets	$+A_{XO}\$/\mathbf{rx}$			$-A_{XO}\$/\mathbf{rx}$	0
Ext. Liabs	$-L_X\$/\mathbf{rx}$			$+L_X\$/\mathbf{rx}$	0
Net worth	W_P	N_{GF}	0	$-N_X\$/\mathbf{rx}$	$K_P - N_X\$/\mathbf{rx}$

These two tables summarise the main accounting framework of the system. In a world without price movements or debt defaults, these two tables would be all that is required to keep track of the stock-flow accounting. However, revaluations of positions due to price movements, and holding gains and losses on financial assets require another stage of accounting. In each period, the model accounting thus includes a step which revalues the previous end-of-period stocks before cumulating the current period flow. These revaluations are primarily driven by relative domestic and international price inflation and exchange rate movements.

While the stock-flow-revaluation accounting serves to ensure the consistency of projections across sectors, blocs and time-periods, the outcomes of the model are driven by

the behavioural assumptions of model. In tables 1 and 2, a number of entries are shown in bold type. These denote those stocks and flows which are determined by behavioural equations rather than identities.

These econometrically estimated behavioural equations take the same form for each of the blocs. The historical specificities of each bloc are captured by allowing the fixed effects of the behavioural equation to vary between blocs. While there is not sufficient space to describe these equations in detail here—the full model has around forty—it should suffice to say that there is a distinctly Keynesian flavour to the way that these relationships have been formalised. In particular, the model does not assume that an equilibrium interest rate relationship exists between saving and investment, so that the *ex-ante* values of these two variables can diverge, even in the long run. The equation for private sector saving calculates a propensity to save out of income, as *a change on the previous period*. Thus, saving propensities are assumed to change only slowly over time, influenced by private sector wealth and income growth, and inflation and the rate of interest. Many behavioural equations also include an error correction term with a small coefficient, reflecting the hypothesis that variables which undergo deviations from long-run trends tend to revert back to trend, but only gradually.

The model is thus intended to project econometrically estimated historical trends into the future, within a coherent macroeconomic accounting framework augmented with Keynesian behavioural assumptions. By altering the residuals of the estimated parameters, adjusting fixed effects, or modifying the accounting structure to make particular variables exogenous, policy "scenarios" can then be created and analysed in which the path of the model diverges from the "baseline" projection in which simulations are generated purely on the basis of estimated parameters and past values.

This is the exercise performed in this paper: we contrast two policy scenarios, one in which we assume continued fiscal austerity, in particular, attempts by European governments to bring deficits and debts levels back within the limits stipulated by the EU conventions (austerity scenario). We contrast this with an alternative "employment-focused" scenario in which reflationary government expenditures and increases in private investment are combined to generate significant increases in aggregate demand and output growth. In particular, we present an analysis of the projected path of debt, deficits, and interest payments for both scenarios.

While a number of other studies have produced projections of European government finances, to our knowledge, this is the first to do so in a fully-specified macro model in which GDP growth, international trade, investment and the government fiscal stance are included as variables. Out approach thus allows for an analysis of debt-to-GDP ratios in which both the numerator and the denominator are fully endogenous.

In order to perform this analysis, we make the yield on government debt for each bloc exogenous, fixing rates at levels we regard as feasible. This allows us to consider the sustainability of debt stocks at different rates of interest and growth rates. The most important result that emerges from this exercise is that raising the growth rates of GDP matters more for debt sustainability than reducing nominal government expenditures or raising taxes—our expansionary scenario produces *lower* debt-to-GDP ratios for the European blocs, despite the assumption of a reversal of austerity policies.

4. SCENARIO ASSUMPTIONS

This paper examines two possible alternatives for Europe, for the period to 2030. We first examine a baseline *austerity scenario* in which it is assumed that the current deflationary policies are maintained across Europe in an attempt to reduce debt levels. Our main

conclusion is that this policy approach is self-defeating: stagnating GDP outweighs the effect of fiscal contraction, so that the 60% debt-to-GDP ratio fails to be achieved. As an alternative, we consider an *employment-focused scenario* in which it is assumed that reflationary increases in government expenditure and private investment take the lead in driving substantial increases in GDP growth and employment. We find that this scenario, in addition to higher levels of GDP and employment, fiscal deficits remain close to manageable levels and that debt levels reduce more significantly than the austerity scenario. We now review the core assumptions underpinning the two scenarios under investigation.

Austerity Scenario

The baseline scenario assumes that the Eurozone will expand to include Eastern European countries, governments will continue to cut expenditures in an attempt to reduce budget deficits and bring debt-to-GDP ratios down to 60%, in line with the requirements of the Growth and Stability Pact. In order to achieve this, we impose targets for ratios of government expenditure to GDP for the various European blocs as shown in Table 3 below. It should be noted that this variable represents *net* current government spending, and thus excludes transfer payments such as social security and pensions. The ratios shown are thus considerably smaller than the gross figures usually quoted.

In addition to cuts in government spending, we further assume that increases in government revenue, through rises in tax rates, are also imposed on all blocs except Scandinavia. We assume that government net income as a share of GDP rises to 20% of GDP for each bloc, from starting levels of 19% for the Core Eurozone, 17% for the Eurozone Periphery, 18% for the United Kingdom, and 18% for East Europe.

In the austerity scenario we also assume that private investment will remain subdued in the face of sluggish GDP growth and depressed expectations of profitability, given the

recessionary environment. We thus adjust the fixed effects of the behavioural equations for investment such that real investment growth remains in the region of 1-1.5% for all of the European blocs.

Employment-focused scenario

We contrast our austerity scenario with an alternative set of projections in which it is assumed that the Eastern European countries remain outside the Eurozone, fiscal austerity is reversed and private-sector investment reverses it's long-term downward trend.

Government expenditure and government financing

In contrast to the austerity scenario, our employment focused scenario assumes that governments either maintain or even increase expenditures as a share of GDP as part of a reflationary package to generate the economic momentum required to substantially raise employment levels. For the Eurozone periphery we assume an increase in government spending from 25.4% of GDP in 2012 to 26% in 2030. In the United Kingdom government expenditure declines much more moderately to 24% by 2030 whilst in Scandinavia we programme an increase in government expenditure from 30% of GDP to 32% in 2030. For the Core Eurozone and East Europe we assume government expenditure remains at pre-crisis levels. Government expenditure as percentage of GDP is programmed to reach 23% of GDP in the Core Eurozone and 22% of GDP in East Europe by 2030.

Table 3. Government expenditure % of GDP: 2030 targets austerity and employment-focused scenarios

	2012 Rate	Scenarios	
		Austerity Scenario 2030 target	**Employment-focused scenario 2030 target**
Core Eurozone	24.6	23	23
Eurozone periphery	25.4	19	26
East Europe	24.6	20	22
Scandinavia	29.8	31	32
United Kingdom	26.0	21	24

In light of the debt levels currently facing European governments, we do not assume that fiscal expansion is implemented through tax cuts. Rather we assume modest *increases* in government revenues as a share of GDP, to partially offset the deficit-increasing effects of expenditures. In the Eurozone Periphery and East Europe we impose a target increase in government revenue to 22% of GDP. In the Core Eurozone and in the United Kingdom government revenue is set to increase to increase to 24%. Given the favourable debt position in Scandinavia, we assume government revenue will marginally reduce by one percent from post-crisis peaks of 33% in 2013.

Given the inbuilt imbalances of the Eurozone, the financing of reflationary government expenditures, particularly in the peripheral countries, presents significant issues. We include in our scenario two mechanisms by which will serve to offset these problems. Firstly, we assume a significant increase in the role of the European Union budget. In particular, we assume that the EU budget will increase gradually from the present level of around 1 percent of total EU GDP to a level of 4% by 2021.

The primary intent of such an EU budget expansion is to allocate substantially more investment funds to the Eurozone Periphery on the basis of fiscal transfers from surplus countries, primarily those of the Core Eurozone. These fiscal transfers provide a mechanism by which counteract the underlying structural asymmetry of the currency union. Contributions and receipts to the enlarged budget are structured such that Eurozone Periphery and East Europe receive significant net fiscal transfers, while the Core Eurozone and the United Kingdom increase their net contributions. We are acutely aware the political feasibility of even such moderate moves towards greater Federalism is slim. However, we are interested in this exercise to analyse the *economic* requirements for stabilisation of the Eurozone.

The second aspect of the financing of government debt is an assumption that debt above 60% of GDP of the Eurozone Periphery in 2015 will be pooled in a common EU debt redemption. It is assumed that repayment of this debt remains the obligation of the country of issue, but that through joint issuance, the yield demanded by holders of this debt can be reduced below the rates that would otherwise be demanded. We assume that this debt can be issued at real interest rates of 2% per annum over the period to 2030. Regarding the debt issued directly be the governments of each bloc we assume real interest rates as shown in Table 4 *in both scenarios*.[6] Since the rate of interest on pooled debt is likely to be above the yields demanded on the debt of the Core Eurozone, we assume that this bloc will not add its own debt above the 60% threshold to the pooled debt.

[6] Predicting market rates of interest over a long forward time horizon is extremely tenuous. We thus choose to make interest rates fully exogenous for the current exercise. It might be argued that real interest rates should be lower in the austerity-driven scenario. However, while nominal yields may be lower, we would also expect inflation to be lower. Further, as shown later in the paper, debt-to-GDP ratios are projected to be *higher* in the austerity scenario.

Table 4. Assumed long-term interest rates

	Interest rate (%)
Scandinavia	1.5
Core Eurozone	1.5
United Kingdom	1.5
Pooled EZ debt	**2.0**
Eurozone Periphery	3.0
East Europe	3.5

Private investment and saving

It is clear that reflationary government policies, while an essential element in any Europe-wide recovery, cannot play the only role. In particular, private investment will need to rise significantly from the woefully low levels to which it has plummeted in the wake of the global financial crisis. Even setting aside the post-crisis collapse in investment, most European blocs have experienced a secular trend of falling investment as a share of GDP over the last 30 years or so. In assuming that both government expenditures and private investment can simultaneously rise, we reject the "crowding out" hypothesis. Instead we regard targeted government expenditures as playing a stimulation role by raising output and raising expectations of profitability. In terms of the financing, we assume that government has a role to play in shaping the institutional framework so that private credit extension will support the expansion of investment. There are a number of current proposals in this direction, that propose support for investment by enhancing the role of the European investment bank and implementing strategic structural policies (see e.g. Griffith Jones et al. 2012).

We target increases in investment growth most strongly in the five-year period 2015-2020, with more modest growth rates in the subsequent periods. Table 5 summarises the relative strength of the increases in investment growth assumed in the employment-focused

scenario, in comparison with the predicted effects in continued austerity. Increases in real investment growth are targeted most strongly in the Eurozone Periphery and the United Kingdom, with more modest, yet strong, effects in the Core Eurozone and East Europe, and moderate changes in Scandinavia.

Table 5. Average annual investment growth (%), 2014-2019, scenarios compared

	Austerity Scenario	**Employment-focused scenario**
Core Eurozone	-0.17	1.54
Eurozone Periphery	-1.80	3.30
East Europe	0.52	1.17
Scandinavia	0.85	1.41
United Kingdom	0.87	3.78

In addition to increases in private investment, the employment-focused scenario also assumes some loosening of the wage repression which has played a central role in the beggar-my-neighbour policies of the Core Eurozone. The increase of wage rises is captured by adjusting the fixed effects of the saving function in this bloc so to reflect the higher propensity to consume out of wage income than profit income As well as providing a direct domestic demand stimulus, wage increases in the Core Eurozone will also increase import demand, and will thus serve to reduce the tendency towards trade surpluses.

Real exchange rates

The scenario also assumes changes in the real exchange rate for the three blocs which are not part of the Eurozone: the United Kingdom, Scandinavia and East Europe. The United Kingdom has long suffered from an overvalued exchange rate, a phenomenon often attributed to the dominance of the City of London at the expense of the manufacturing sector. We thus

assume a steady depreciation of the pound against the US dollar of around 15%. Given the assumption that East European countries do not join the Eurozone, it is projected that the real exchange rate of East Europe will decline, at least initially. Finally, given the relatively strong position of the Core European bloc, the relative exchange rate of these countries experiences significant pressure to appreciate.

5. SCENARIO PROJECTIONS

In this section we present the projections produced by the CAM under the assumptions described for each of the two scenarios.

Private Investment

Table 6 shows the per-annum growth rate of private investment shown as an average of each five-year period from 1984-2013. It also shows the projected growth rates of investment generated by each of our two scenarios. It can be seen that a significant push in private investment is assumed in the Eurozone Periphery in the period 2014-2018 in our employment-focused scenario, with average growth of 3.6%, and in the United Kingdom, with growth of 3.8%. But otherwise, the growth rates projected in this scenario are not particularly dramatic, averaging between 1% and 2% per annum. However, these rates are considerably higher than those projected for the austerity scenario, at least in the initial period when the CAM projects negative investment growth in the Eurozone and below 1% elsewhere except for Scandinavia at 1%. In the later period, the projected investment rates return to more moderate levels, and even fall below the growth rates projected in the austerity scenario in some blocs.

Table 6. Private investment growth, % pa, 5-year avg. (2014-2030, 7-year average)

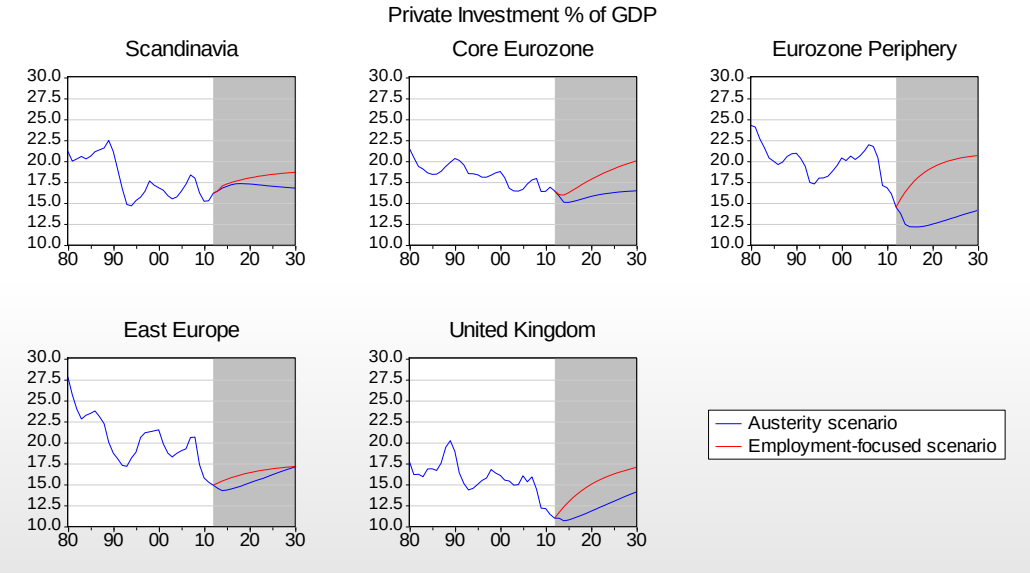
	Scenario	1984-1988	1989-1993	1994-1998	1999-2003	2004-2008	2009-2013	2014-2018	2019-2023	2024-2030
Scandinavia	***historical***	0.96%	-7.50%	3.47%	-2.59%	2.96%	-1.77%			
	austerity							1.03%	-0.24%	-0.28%
	employment							1.55%	0.58%	0.30%
Core Eurozone	***historical***	0.32%	-0.92%	-0.18%	-2.19%	1.73%	-2.52%			
	austerity							-0.40%	0.78%	0.32%
	employment							1.47%	1.59%	1.05%
Eurozone Periphery	***historical***	-0.99%	-3.26%	1.49%	1.43%	0.21%	-7.93%			
	austerity							-2.35%	1.19%	1.24%
	employment							3.64%	1.42%	0.52%
East Europe	***historical***	-0.50%	-5.20%	4.31%	-3.03%	2.42%	-7.04%			
	austerity							0.36%	1.23%	1.19%
	employment							1.23%	0.70%	0.36%
United Kingdom	***historical***	3.98%	-6.07%	3.13%	-2.37%	-0.63%	-5.49%			
	austerity							0.64%	1.96%	1.73%
	employment							4.02%	2.04%	1.08%

Figure 1 shows the result of these growth rates on the share of GDP going to investment in each bloc. In the Eurozone Periphery there is a very significant increase to about 19% as early as 2020. This result contrasts with that of the austerity scenario, in which private investment increase to only around 14% of GDP by 2030.

The Core Eurozone and the United Kingdom also achieve significant increases in the share of GDP going to investment. In the United Kingdom, private investment in 2012 is at an extremely low level of 11.4% and reaches 15% by 2020 and 17% by 2030, in the Core Eurozone private investment increases from 15% of GDP in 2012 to 18% in 2020 and 20% in

2030. In Scandinavia and in East Europe private investment as percentage of GDP is also projected to increase over the period under investigation.

Figure 1. Private Investment as % of GDP



Government expenditure and income

The employment focused scenario assumes that government expenditures, as a share of GDP, are maintained at levels close to those seen in the period before the onset of the global financial crisis. In the case of the Eurozone Periphery, a significant increase is assumed.

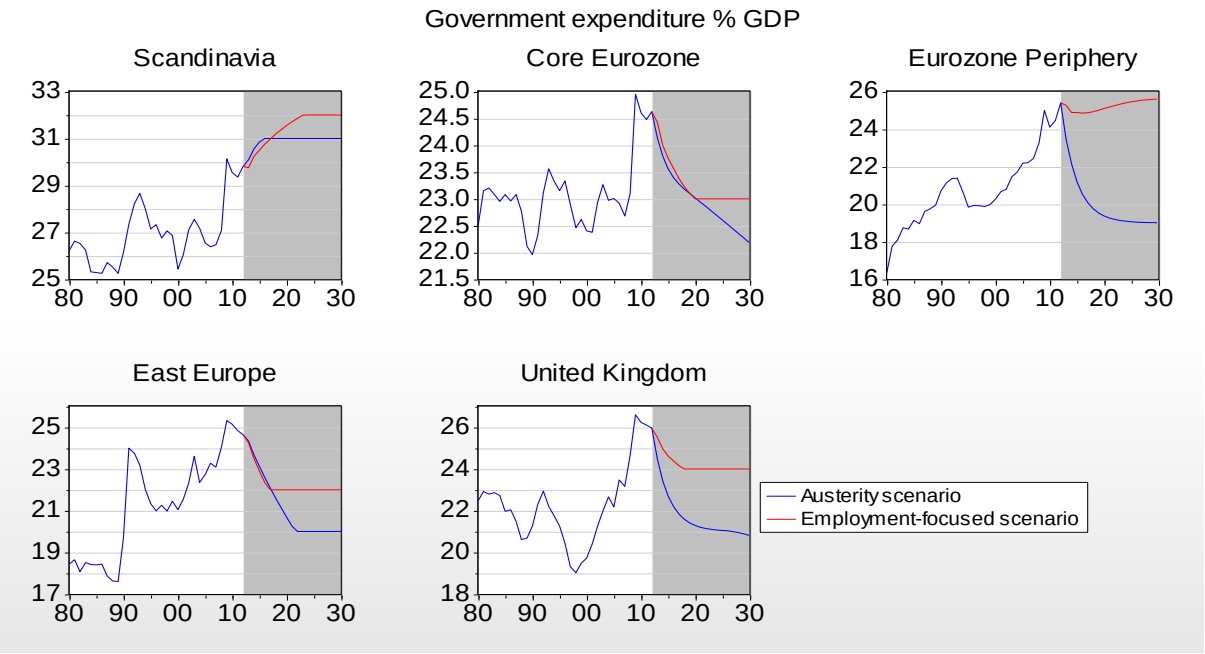
Table 7 summarises the data on the growth of government spending (in real terms), showing historical data and projected growth rates in each of our scenarios. As with the investment growth figures, the growth rates projected in our employment-focused scenarios are not high in historical context. Rather the figures projected in the austerity scenario are lower than the historical trend. As with the investment growth rates the difference between the two scenarios is most marked for the United Kingdom and the Eurozone Periphery.

Table 7. Growth of government spending, % pa, (2011-2030, 5 years average)

	Scenario	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020	2021-2025	2026-2030
Scandinavia	**Historical**	1.76%	2.62%	2.09%	2.78%	3.09%	3.16%	3.02%			
	Austerity								1.62%	1.55%	1.43%
	Employment								2.75%	2.58%	2.54%
Core Eurozone	**Historical**	1.83%	2.57%	2.74%	1.71%	1.68%	2.28%	0.15%			
	Austerity								0.96%	0.74%	0.45%
	Employment								1.27%	1.92%	1.96%
Eurozone Periphery	**Historical**	4.71%	5.64%	0.42%	3.50%	3.98%	1.63%	-4.33%			
	Austerity								-1.32%	0.83%	1.35%
	Employment								2.96%	2.76%	2.39%
East Europe	**Historical**	1.39%	1.43%	0.33%	3.02%	5.78%	5.18%	0.57%			
	Austerity								0.51%	2.23%	2.90%
	Employment								2.97%	3.30%	2.42%
United Kingdom	**Historical**	1.52%	2.39%	1.46%	2.36%	5.20%	3.60%	-2.80%			
	Austerity								-0.40%	1.07%	1.42%
	Employment								1.56%	2.36%	2.85%

Figure 2 illustrates the result of these growth rates on government expenditure as a share of GDP, as outlined in the scenario assumptions in the previous section. In the Core Eurozone the ratio of government expenditures to GDP slightly declines from 24% of GDP to 23% of GDP where it is maintained throughout 2021-2030. Similarly, in East Europe government spending marginally declines to 22% of GDP by 2017 where it remains till 2030. In the United Kingdom government spending is maintained at 24% of GDP throughout the period under investigation. For the Eurozone Periphery government expenditure is maintained at 25% of GDP until 2030 whilst in Scandinavia government expenditure is increased to 32% of GDP.

Figure 2. Government expenditure as % of GDP



The situation with government revenues is complicated by the introduction of the additional European budget contributions and receipts. Table 8 summarises the effect of the proposed enlargement of the European budget on the net government receipts of each bloc. The total

contributions shown sum to an additional 3% of total EU GDP, in addition to the current 1% budget size. The difference between contributions and receipts at the bloc level gives the result that the Eurozone Periphery and East Europe become net recipients of between 2.5% and 3.0% of domestic GDP.

Table 8. Summary of fiscal contributions, receipts and net fiscal transfer, PPP $ and % of GDP

	2015	**2020**	**2030**
	EAST EUROPE		
Total GDP	1,974.00	2,424.00	3,265.60
EU budget contributions	45.4	100.6	144.8
EU budget receipts	82.9	169.6	228.7
Net receipts	37.6	69.1	83.9
Net receipts as % of GDP	1.9	2.8	2.6
	EUROZONE PERIPHERY		
Total GDP	3,758.70	4,381.90	5,559.00
EU budget contributions	25.4	53.2	67.9
EU budget receipts	84.6	177.2	232.1
Net receipts	59.3	123.9	164.2
Net receipts as % of GDP	1.6	2.8	3.0
	CORE EUROZONE		
Total GDP	6,726.90	7,353.10	8,903.10
EU budget contributions	137.1	272.7	326.6
EU budget receipts	85.6	172	187.7
Net receipts	-51.5	-100.7	-138.8
Net receipts as % of GDP	-0.8	-1.4	-1.6
	UK		
Total GDP	2,148.60	2,367.00	3,032.90

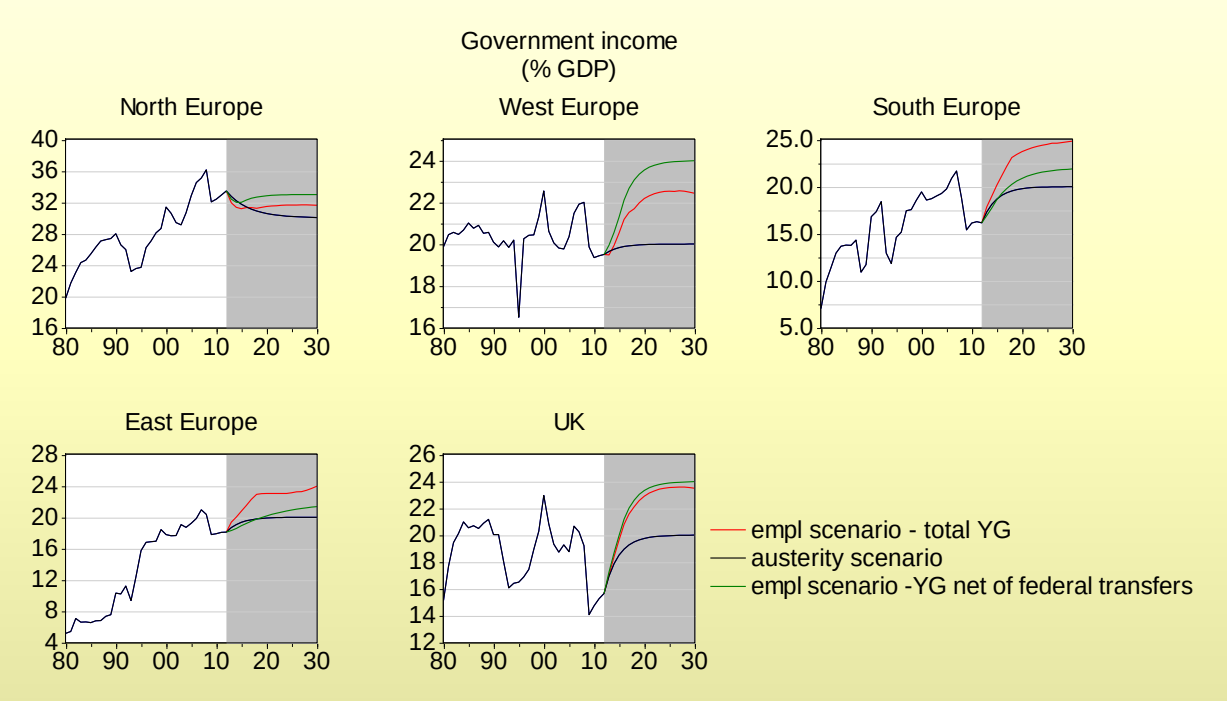
EU budget contributions	34.3	66.2	79.7
EU budget receipts	27.1	56.2	65
Net receipts	-7.2	-10	-14.7
Net receipts as % of GDP	-0.3	-0.4	-0.5

SCANDINAVIA

Total GDP	1,019.00	1,124.20	1,432.80
EU budget contributions	17.6	34.7	43.2
EU budget receipts	9.4	19.2	23.6
Net receipts	-8.2	-15.5	-19.6
Net receipts as % of GDP	-0.8	-1.4	-1.4

Figure 3 incorporates these net balances to show the projected government revenues as a percentage of GDP in each of the two scenarios. For the employment-focused scenario, two series are included: one showing government revenue including and the other excluding net fiscal transfers. Thus, for the Core Eurozone, net government income is assumed to rise from 20% of GDP to 24%, with around a third of the additional revenues representing net contributions to the EU budget. Similarly, government revenues in the Eurozone Periphery are assumed to rise by about by around 2% of GDP, but net transfers from the EU budget increase total revenues to around 25% of GDP.

Figure 3. Government income as % of GDP



The projected government expenditures and revenues combine to produce net fiscal positions in each of the blocs as shown in Table 8. In general fiscal deficits are projected to reduce to levels below -1% of GDP by 2030 in the employment focused scenario. Thus, this scenario cannot be dismissed on the basis of promoting fiscal profligacy. Table 9 shows the fiscal balances of each bloc plus its corresponding net fiscal transfers to/from the EU which gradually starts in 2013.

Given that the Eurozone Periphery is a major recipient of federal fiscal transfers its fiscal deficit is projected to fall progressively to around -0.7% of GDP by 2030. The fiscal deficit for East Europe, which is also a net recipient of fiscal transfers, is projected to turn positive by 2018 and reach 2% of GDP by 2030.

Table 8. Fiscal balance in employment-focused scenario, 2005 PPP Euro and % of GDP

	2015	2020	2025	2030
		Percent of GDP		
Scandinavia	0.7	-0.1	-0.3	-0.4
Core Eurozone	-3.2	-0.8	-0.5	-0.6
Eurozone Periphery	-4.7	-1.4	-0.9	-0.7
East Europe	-2.1	1.0	1.1	2.0
United Kingdom	-5.0	-1.1	-0.5	-0.5
		2005 PPP Euros		
	2015	**2020**	**2025**	**2030**
Scandinavia	7038	-1057	-4329	-5194
Core Eurozone	-216301	-60519	-37805	-50631
Eurozone Periphery	-179299	-59954	-46371	-41095
East Europe	-42425	24878	31771	63393
United Kingdom	-106016	-25924	-11948	-15277

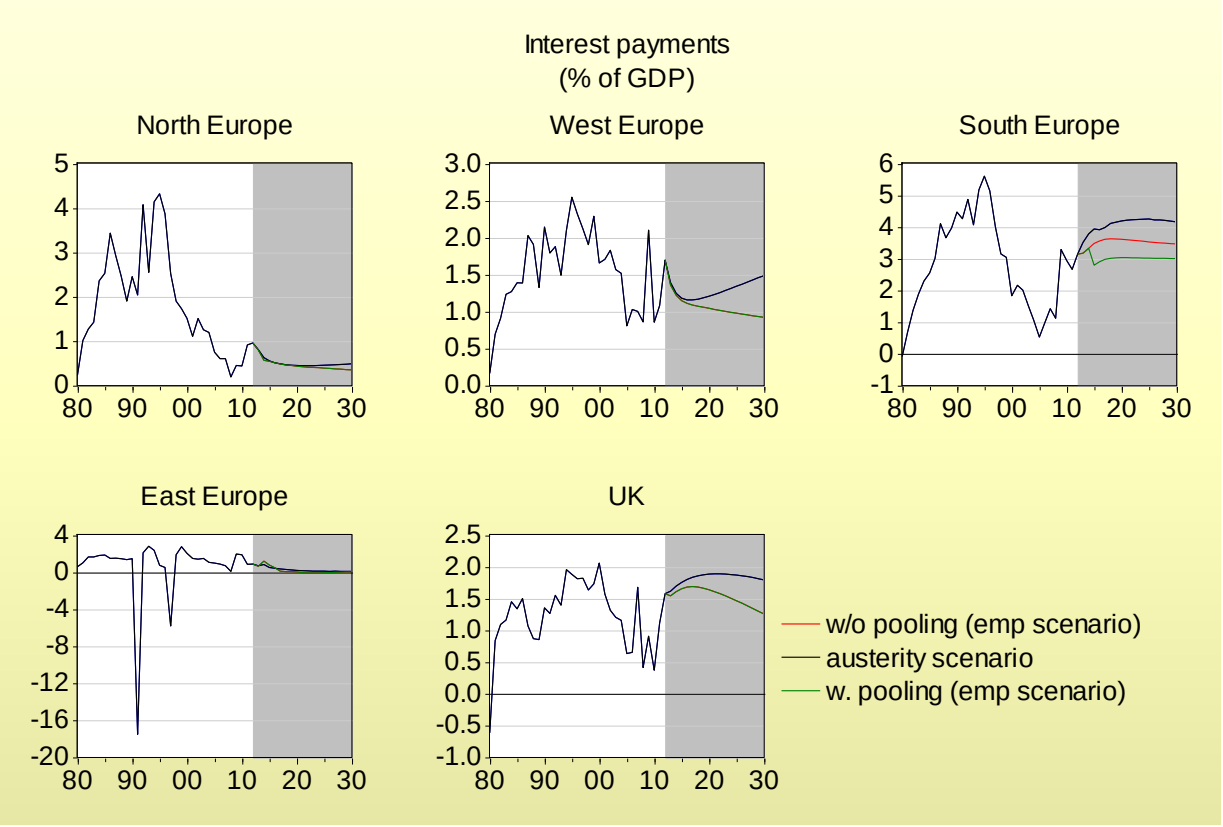
Table 9. Fiscal balances and net fiscal transfers as % of GDP

		2013	2020	2030
Core Eurozone	**Fiscal balance (% GDP)**	-4.9	-0.8	-0.6
	Net fiscal transfer (% GDP)	-0.5	-1.4	-1.6
Eurozone Periphery	**Fiscal balance (% GDP)**	-7.4	-1.4	-0.7
	Net fiscal transfer (% GDP)	0.9	2.8	3.0
East Europe	**Fiscal balance (% GDP)**	-4.9	1.0	2.0
	Net fiscal transfer (%	1.1	2.8	2.6

	GDP)			
United Kingdom	**Fiscal balance (% GDP)**	-8.5	-1.1	-0.5
	Net fiscal transfer (% GDP)	-0.2	-0.4	-0.5
Scandinavia	**Fiscal balance (% GDP)**	2.1	-0.1	-0.4
	Net fiscal transfer (% GDP)	-0.5	-1.4	-1.4

Figure 4 shows how much of these fiscal balances are accounted for by interest payments, given our assumptions about the yields on government debt. In particular, the figure highlights the significant savings – around 0.5% of GDP – that could be achieved by the lowering of yields that come with debt pooling for the Eurozone Periphery.

Figure 4. Interest Payments as % of GDP



Economic Growth

Before examining the outcomes of the two scenarios in terms of government debt ratios, we first present the project values for economic growth. Table 10 summarises the projected GDP growth rates for each scenario. The economic growth rates for the austerity scenario are listed in parenthesis for each bloc. Growth rates are projected to be between 0.75% and 1.5% higher across the blocs, in when compared to the projections of the austerity scenario, although there is variance across the blocs: Scandinavia's performance is projected to be only modestly better than it would achieve under the austerity scenario. In contrast, East Europe is projected to achieve high rates of growth: 3.6% during 2013-2020 and 3.4% during 2021-2030.

Table 10. Average GDP growth (%)

	2008-2012 (actual)	**2013-2020**	**2021-2030**
Core Eurozone	1.23	2.17	1.90
		1.45	0.92
Eurozone Periphery	-1.40	2.83	2.38
		-0.74	1.34
East Europe	1.46	3.57	3.48
		2.62	3.08
Scandinavia	0.21	2.15	2.24
		1.73	1.28
United Kingdom	-0.51	2.25	2.79
		0.47	1.58

Government Debt

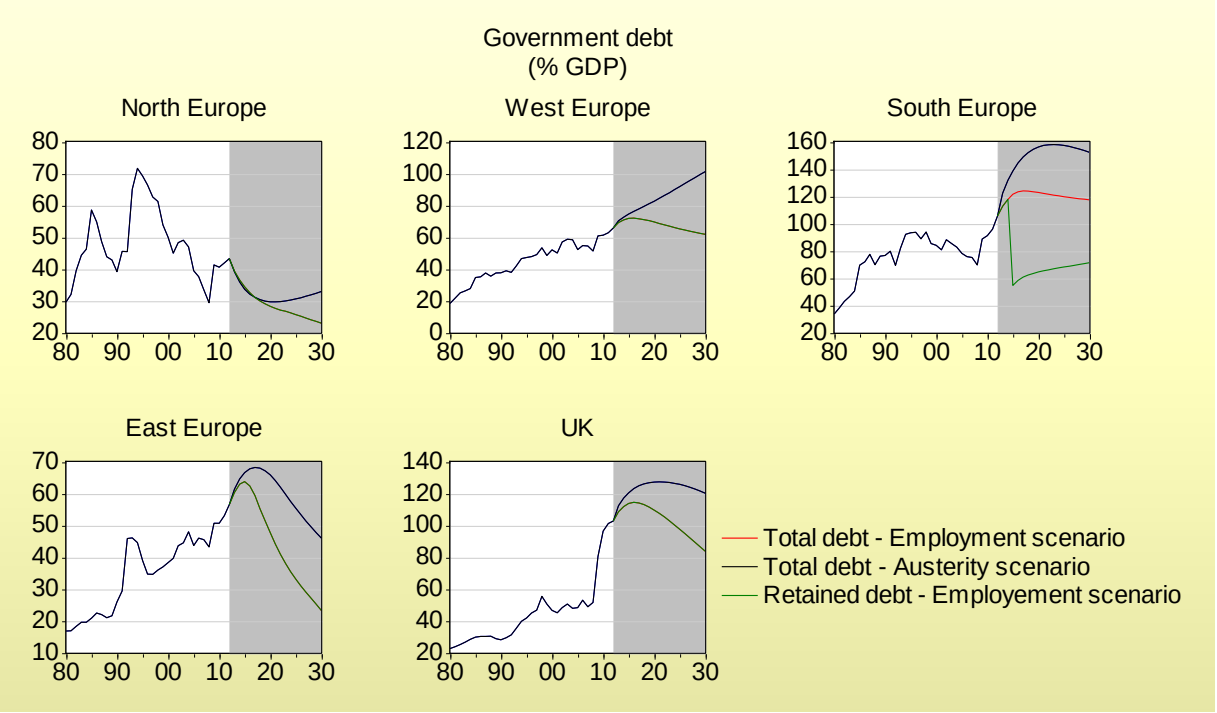
We now turn to the outcomes in terms of government debt levels. The outcomes of each of the two scenarios are shown in Figure 5. This Figure additionally provides a breakdown of the projected debt levels of the Eurozone Periphery into pooled and non-pooled debt.

The debt outcomes diverge considerably across the two scenarios. It is very clear that, within the modelling framework adopted here, the achievement of 60% debt-to-GDP ratios through austerity measures is *not* achievable for the Eurozone countries or the United Kingdom. In our austerity scenario, the United Kingdom reaches 2030 with debt levels around 120% of GDP, Core Eurozone with around 100% of GDP and the Eurozone Periphery over 150%. These estimates might seem extremely pessimistic, but out results clearly

demonstrate the powerful negative effects of economic stagnation on debt-to-GDP ratios, as is most clearly demonstrated by the example of Japan. Indeed commentators are now openly discussing the possibility of decades of Japan-style stagnation for Europe

While debt levels are projected to also remain high in our employment-focused scenario, the picture is considerably better than that shown in the austerity scenario. As a result of the trends in government expenditure and revenue, as well as the acceleration in economic growth after 2012, government debt falls is projected to fall appreciably in all five European blocs beginning roughly after 2015. In this scenario, the Core Eurozone is projected to achieve the target of 60% debt-to-GDP – despite the net fiscal transfers – while the debt ratio in the United Kingdom reaches around 80% by 2030. Debt levels are projected to remain high in the Eurozone Periphery, at around 120%, but around half of this debt is pooled, reducing interest rates and sheltering governments from pressure from the bond markets.

Figure 5. Government debt as % of GDP



The Trade Balance

Since the five European blocs are projected to growth primarily on the basis of stimulating government expenditure and private investment, there exists a danger of deterioration in their trade balances as a result of increased import demand. Table 8 shows the trends in the trade balance and compares these to changes in the real exchange rate for each of the five blocs. The real exchange rate of each bloc is presented as a ratio to the real exchange rate of the United States, which remains comparatively flat throughout the projected period to 2030.

There is indeed a reduction in the substantial trade surpluses of both the Core Eurozone and Scandinavia as the real exchange rate of both blocs appreciate. Although the appreciation of the real exchange rate of Scandinavia is contained in the employment focused scenario, nevertheless, its rate still appreciates by 16% percent relative to its 2013 levels. There is a sharper appreciation of 27% in the real exchange rate of the Core Eurozone. However, both

blocs still continue to run modest trade surpluses throughout the period to 2030. The depreciation of the British pound by 15% also helps this bloc to progressive reduce its trade deficit from about -2.3% to -1.8% by 2030.

Table 7. Trade balance as % of GDP and the real exchange rate

		2012	**2020**	**2030**
Core Eurozone	**Trade balance**	2.9	3.1	1.6
	Real exchange rate	1.10	1.28	1.40
Eurozone Periphery	**Trade balance**	-0.2	-0.9	-2.8
	Real exchange rate	0.97	1.02	1.08
East Europe	**Trade balance**	-0.9	5.1	2.9
	Real exchange rate	0.61	0.56	0.71
United Kingdom	**Trade balance**	-2.3	-3.0	-1.8
	Real exchange rate	1.00	0.98	0.85
Scandinavia	**Trade balance**	4.9	1.3	1.1
	Real exchange rate	1.37	1.65	1.59

The Eurozone Periphery begins to experience worsening trade deficits after about 2020. This trend coincides with an appreciation of its real exchange rate of about 11% between 2013 and 2030. In East Europe, an initial depreciation is predicted which reverses as a result of the positive economic performance projected for the bloc.

Employment

Finally, the primary aim of our scenario is to generate a recovery in Europe which raises employment levels significantly. Table 8 compares the total number of jobs created in each bloc under each of the two scenarios. The projected increase in total employment under the

employment-focused scenario is significantly greater than that of the austerity scenario. The combination of expansionary national and federal policies leads to significant job creation. The Eurozone Periphery, the main recipient of federal fiscal transfers, is projected to generate an additional 4.8 million jobs by 2020, in comparison to the outcome in the austerity scenario. Significant gains are also projected for the Core Eurozone and in the United Kingdom. Under the employment-focused scenario, the Core Eurozone is projected to generate an additional 4.2 million jobs by 2030 while in the United Kingston 2.4 million additional jobs are projected. Employment gains are also achieved in Scandinavia and East Europe.

Table 8. Core Eurozone: Total employment (in millions) generated under the two scenarios, selected years

	Scenario	2000	2008	2012	2015	2020	2025	2030
Scandinavia	***historical***	11.41	12.37	12.25				
	austerity				12.48	12.57	12.58	12.54
	Employment				12.51	12.72	12.87	13.06
	Difference				0.04	0.15	0.29	0.53
Core Eurozone	***Historical***	79.08	85.65	86.29				
	Austerity				86.49	87.43	86.79	85.28
	Employment				87.82	89.34	89.68	89.44
	difference				1.33	1.91	2.88	4.16
Eurozone Periphery	***historical***	47.72	55.81	52.80				
	austerity				51.36	51.38	51.84	52.39
	Employment				54.22	56.22	57.75	58.95
	difference				2.87	4.84	5.91	6.56
East Europe	***historical***	45.11	46.60	46.31				
	austerity				46.63	46.74	46.78	46.89
	employment				46.70	47.48	48.06	47.96
	Difference				0.06	0.75	1.28	1.06
United Kingdom	***Historical***	27.29	29.22	28.91				
	Austerity				28.68	28.64	28.74	28.98
	employment				29.63	30.18	30.72	31.41
	difference				0.95	1.54	1.98	2.43

6. Conclusion

The purpose of our modelling of policy-relevant future scenarios for Europe has been to gauge the viability of a strategy of promoting employment-focused economic recovery and contrast its outcomes to those produced by the current alternative of persisting with austerity measures. The time horizon for our scenarios has been 2013-2030.

Our conclusion is that such a strategy is indeed feasible but it requires greater intervention by the European Union. For out employment-focused scenario, this intervention implies substantially more EU funding of public investment, a greater EU budget, greater lending for private investment and a strong debt redemption mechanism for the heavily indebted countries in the Eurozone Periphery.

At the bloc level, this strategy explicitly gears a range of policy measures to promoting employment as their overriding objective. These policies include maintaining government expenditures, especially public investment, at the pre-crisis levels, and closing any ensuing fiscal deficits by raising government revenue above its low crisis-induced levels. The emphasis on public investment at bloc level is designed to help stimulate private investment, which has languished at pitifully low levels across the continent.

The results generated by our employment-focused scenario are generally more impressive, particularly in contrast to the bleak prospects being produced by the strategy of protracted austerity. Most importantly, employment reaches historically high levels, and economic growth rates rise well above the current rates that are hovering close to zero percent in most European blocs, as well as above the similarly low projected rates under the austerity scenario.

A rise in private investment is partially responsible for overcoming the stagnation in economic growth. However, more concreted policy initiatives will have to be undertaken to

lift private investment back up to its pre-crisis levels. Such an initiative could play an important part in raising economic growth rates consistently above 3% through 2030.

As a result of trends in government expenditures and revenues and of the fiscal transfers at EU levels fiscal deficits are close to manageable levels. Also, most importantly, debt-to-GDP levels plummet across the five blocs. Of course, the Eurozone Periphery benefits almost immediately from the mutualisation of debt above 60% of GDP as interest rate payments significantly reduce. But accelerating economic growth also plays a major role in decreasing debt burden across the continent.

The expansionary fiscal places implied by this scenario do not lead to major trade deficits. But the blocs historically sizeable trade surpluses, such as the Core Eurozone and Scandinavia, do experience a secular decline in their surplus position. In general, the blocs outside the Eurozone, including Scandinavia as well as East Europe and the United Kingdom, are obliged to undertake measures to depreciate their real exchange rate or contain, at least, its appreciation.

In conclusion, achieving significant increases in GDP and employment across Europe will not be easy, but it is certainly attainable. However, it will imply a move away from austerity policies and the implementation of a range of expansionary macroeconomic policies at both the country and the EU-wide level. These initiatives imply that the European Union will have to become a more coordinated and more progressive-minded economic bloc.

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