Roads to Survival: an Atlas

Evaluating Six Scenarios for EMU's Survival

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With thanks to Wendi Fang

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Introduction

Eurozone politicians are under pressure to move beyond short term crisis measures to deliver a convincing long term plan for EMU. This is something that has been noticeably lacking so far, which is hardly surprising given the lack of unanimity over the final destination let alone the route towards it.

In our recent report *Roads to Survival – How EMU Break-up may be avoided* (June 5th 2012) we stepped back from the politics and argued that potential roads to survival do exist. These could be built on three dimensions: reform, reflation and distribution. We combined a selection of policy combinations along these dimensions into six scenarios in order to evaluate their impact.

In this follow-up report we present a more detailed, quantified evaluation of these scenarios. We detail the policy assumptions and describe their consequences for 6 key Eurozone countries – Germany, France, the Netherlands, Spain, Italy and Greece. We assess the costs and benefits of each scenario in terms of GDP and employment, and highlights the key channels through which these occur: inflation, the current account, the public debt/GDP ratio and bond yields.

In the following pages, we first outline the scenarios and summarise the impact on the main macro and market variables, before presenting the detailed information by country.

Don’t believe everything a model tells you

- Economic forecasting has also fallen victim to the crisis
- Conventional macro-economic models are not well suited to forecasting in this environment
- They are reasonably good at tracking the evolution of spending and inflation in the real economy…
- …but are poor at dealing with
  - Supply-side shocks
  - The financial sector
  - Asset prices
  - Balance sheet effects
- Moreover, since models are based on past experience, they are by definition ill-equipped to deal with unprecedented changes
- Forecasting is always an art, but this project has had to be more artistic than most…
- …involving judgements based on research of a number of leading large scale econometric models, as well the findings of in the research literature on the policy options considered (including academic papers and work by the OECD, IMF and ECB).

Six Scenarios for Survival Summary

For further details, see our report 'Roads to Survival: How EMU break-up could be avoided' 5th June 2012, pages 20-26.

Austeria

- Tough implementation of fiscal austerity
- Labour market and other reforms in the periphery ('internal devaluation')
- Subdued growth, high unemployment: political & fiscal sustainability questionable (and therefore high risk of defaults)

Draghia (banking union)

- Fiscal austerity cushioned by loosening monetary policy and bank recapitalisation
- Euro-wide DGS, supervision, resolution schemes
- Stronger growth, but still fiscal tightening: fiscal sustainability remains questionable

Bondia (funding union)

- Funding union: common issuance of Eurobonds (fiscal compact is pre-requisit)
- Strong bond yield convergence; no need for QE
- Growth boost in periphery (partly at expense of core)

Europhilia (from transfer union to fiscal union)

- Explicit fiscal transfers from core to periphery
- Adherence to fiscal ceilings and structural reforms implementation of fiscal austerity

Inflationia (aka Outer Draghia)

- Radical monetary easing: aggressive QE and euro depreciation

Krugmania

- Fiscal stimulus / bigger government, relaxed attitude about inflation (in short run) with long term credible commitment to long term fiscal consolidation

Six Survival Scenarios – the policy mixes

The scenarios involve different combinations of policies:

Policy measures	Austeria	Draghia	Bondia	Europhilia	Inflationia	Krugmania
	Scenarios					
Reform - Product/labour market	●	●	◐	◐	○	◐
- Finance/ funding	○	◕	●	●	●	●
Reflation - monetary policy: QE	○	●●	○	○	●●●	●
- monetary policy: rate cuts	◐	◐	○	○	○	○
- € depreciation	◕	●◐	◐	◑	●●	●
- fiscal loosening	◍◑	◍	◍	○	●	●
Redistribution - fiscal transfer	○	○	○	●	◐	●

○ =not applicable ● =applicable ◐ =partly applicable ◍ =applicable *in reverse*

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Summary and conclusions cross-country comparison

Notes on the simulations:

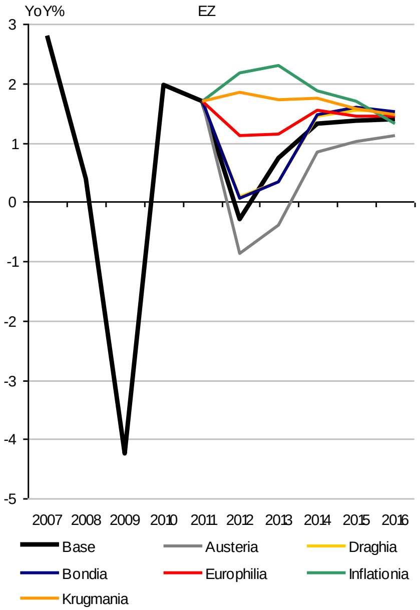
• The projections featured in this report are meant to illustrate the broad impact of the scenarios, and are therefore not intended as time-specific forecasts. In reality the timing and scale of the policy changes could be substantially different from those assumed here. As we discuss in the report, the unprecedented nature of some of the policies mean that assessment is subject to unusually large margins of error.

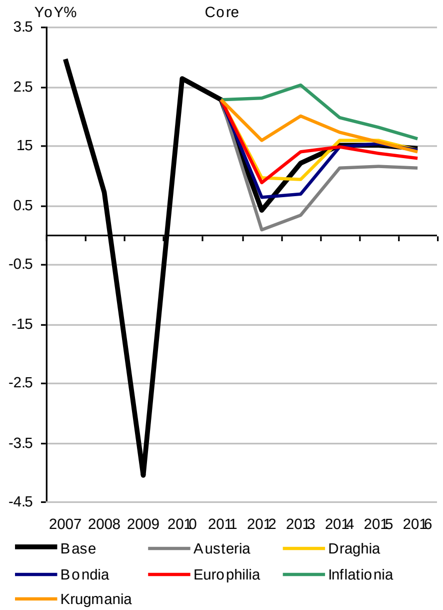
• Data for ‘2012’ illustrate the *full* first year effect of the policy changes in each scenario.

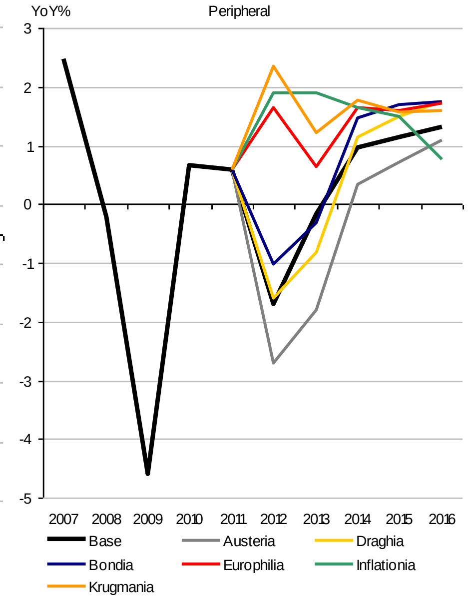
• For the purposes of summary illustration data for the ‘core’ countries represents the GDP weighted average of the impact on Germany, France, the Netherlands and Belgium, while the ‘periphery’ is a GDP weighted average of Italy, Spain and Greece. For detailed country results, please see Annex A.

Growth benefits, except in *Austeria*

YoY%	EZ					Core					Peripheral				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Base	-0.3	0.7	1.3	1.4	1.4	0.4	1.2	1.5	1.5	1.4	-1.7	-0.2	1.0	1.1	1.3
Austeria	-0.9	-0.4	0.8	1.0	1.1	0.1	0.3	1.1	1.2	1.1	-2.7	-1.8	0.3	0.7	1.1
Draghia	0.1	0.3	1.4	1.5	1.5	0.9	0.9	1.6	1.6	1.4	-1.6	-0.8	1.1	1.5	1.7
Bondia	0.1	0.3	1.5	1.6	1.5	0.6	0.7	1.5	1.5	1.4	-1.0	-0.3	1.5	1.7	1.7
Europhilia	1.1	1.1	1.5	1.4	1.4	0.9	1.4	1.5	1.4	1.3	1.6	0.6	1.7	1.6	1.7
Inflationia	2.2	2.3	1.9	1.7	1.3	2.3	2.5	2.0	1.8	1.6	1.9	1.9	1.6	1.5	0.8
Krugmania	1.8	1.7	1.7	1.6	1.5	1.6	2.0	1.7	1.6	1.4	2.4	1.2	1.8	1.6	1.6



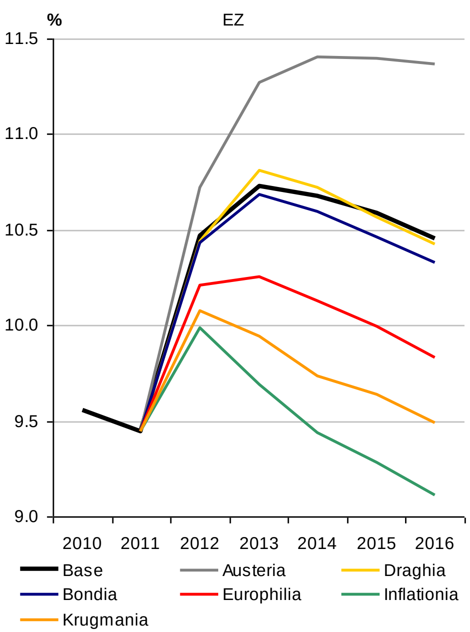


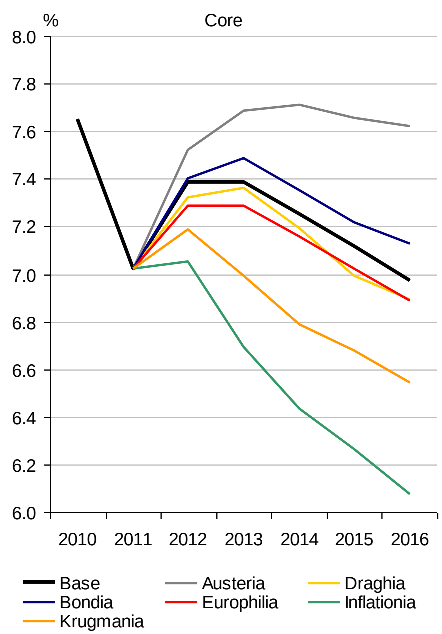


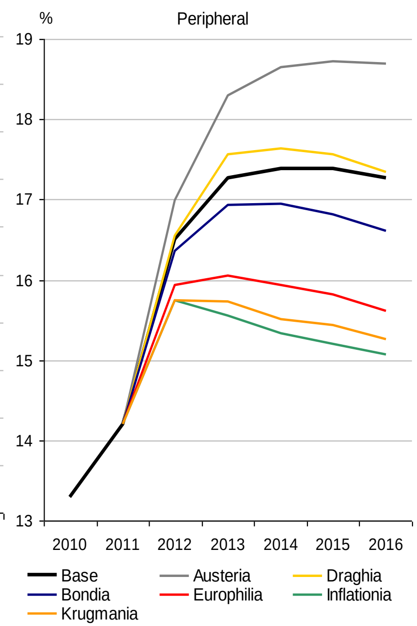
- The *Austeria* scenario depresses activity in the short term. The others boost GDP, with the biggest gains in the *Krugmania* and *Inflationia* scenarios
- Reflation and euro depreciation lift activity generally, while transfers benefit the periphery
- Sustained stimulus is required to maintain the growth advantage of the more reflationary scenarios in the long term
- The initially adverse effects of labour and product market reform are turned in sustained gains to output growth in the longer term…
- …nevertheless, the *Austeria* scenario fails to make up for lost ground relative to other scenarios

Unemployment – a long haul

%		EZ				Core					Peripheral				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Base	10.5	10.7	10.7	10.6	10.5	7.4	7.4	7.3	7.1	7.0	16.5	17.3	17.4	17.4	17.3
Austeria	10.7	11.3	11.4	11.4	11.4	7.5	7.7	7.7	7.7	7.6	17.0	18.3	18.6	18.7	18.7
Draghia	10.4	10.8	10.7	10.6	10.4	7.3	7.4	7.2	7.0	6.9	16.5	17.6	17.6	17.6	17.3
Bondia	10.4	10.7	10.6	10.5	10.3	7.4	7.5	7.4	7.2	7.1	16.4	16.9	16.9	16.8	16.6
Europhilia	10.2	10.3	10.1	10.0	9.8	7.3	7.3	7.2	7.0	6.9	15.9	16.1	15.9	15.8	15.6
Inflationia	10.0	9.7	9.4	9.3	9.1	7.1	6.7	6.4	6.3	6.1	15.7	15.5	15.3	15.2	15.1
Krugmania	10.1	9.9	9.7	9.6	9.5	7.2	7.0	6.8	6.7	6.5	15.7	15.7	15.5	15.4	15.3



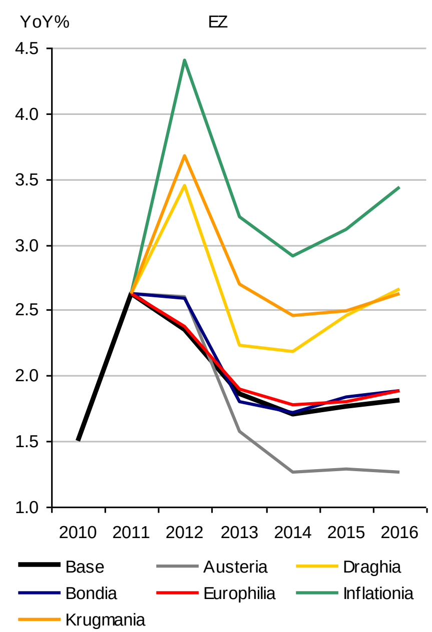


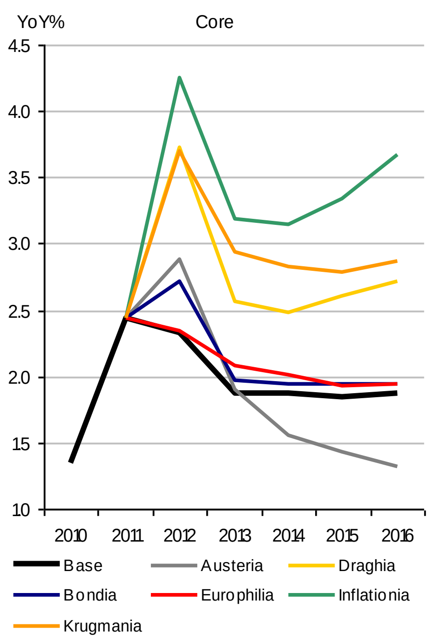


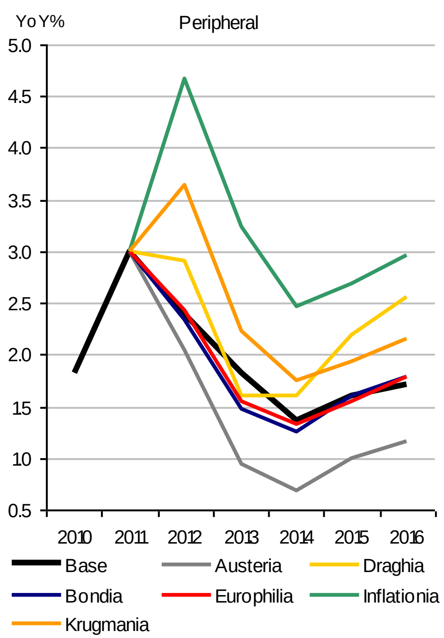
- Unemployment falls in all but the *Austeria* scenario, falling relatively quickly in the peripheral economies
- Compared with *Austeria*, *Bondia* reduces the unemployment rate by 0.4% on average after 2 years, and 0.9% after 5 years, with larger falls of 1% and 2% respectively in the periphery…
- …the *Inflationia* scenario sees unemployment fall twice as fast
- Nevertheless, overall unemployment is still close to 10% at the end of the period, implying that more radical policies might be required

Inflation – generally contained

YoY%	EZ					Core					Peripheral				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Base	2.3	1.9	1.7	1.8	1.8	2.3	1.9	1.9	1.8	1.9	2.4	1.8	1.4	1.6	1.7
Austeria	2.6	1.6	1.3	1.3	1.3	2.9	1.9	1.6	1.4	1.3	2.0	0.9	0.7	1.0	1.2
Draghia	3.4	2.2	2.2	2.5	2.7	3.7	2.6	2.5	2.6	2.7	2.9	1.6	1.6	2.2	2.6
Bondia	2.6	1.8	1.7	1.8	1.9	2.7	2.0	1.9	1.9	1.9	2.3	1.5	1.3	1.6	1.8
Europhilia	2.4	1.9	1.8	1.8	1.9	2.3	2.1	2.0	1.9	1.9	2.4	1.5	1.3	1.5	1.8
Inflationia	4.4	3.2	2.9	3.1	3.4	4.3	3.2	3.1	3.3	3.7	4.7	3.2	2.5	2.7	3.0
Krugmania	3.7	2.7	2.5	2.5	2.6	3.7	2.9	2.8	2.8	2.9	3.6	2.2	1.7	1.9	2.2



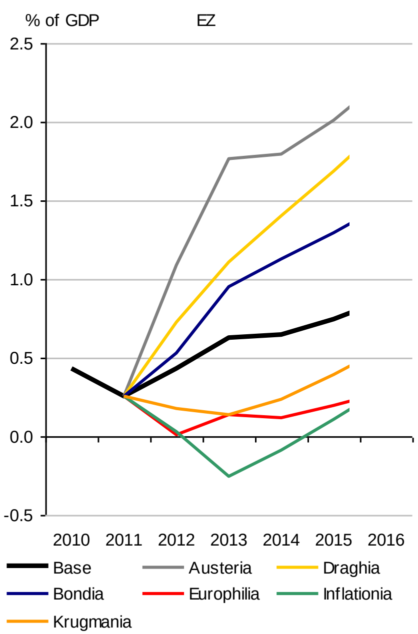


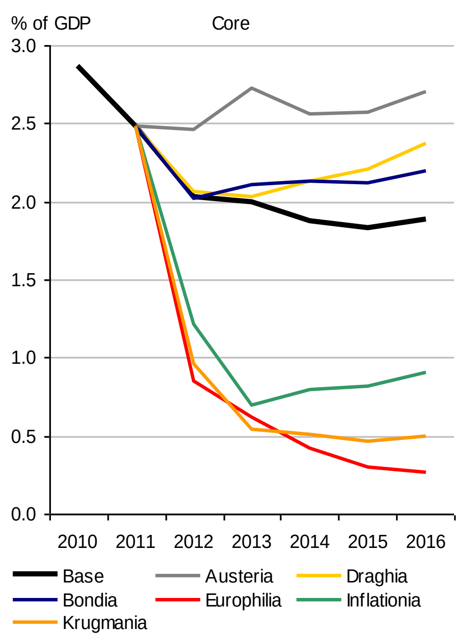


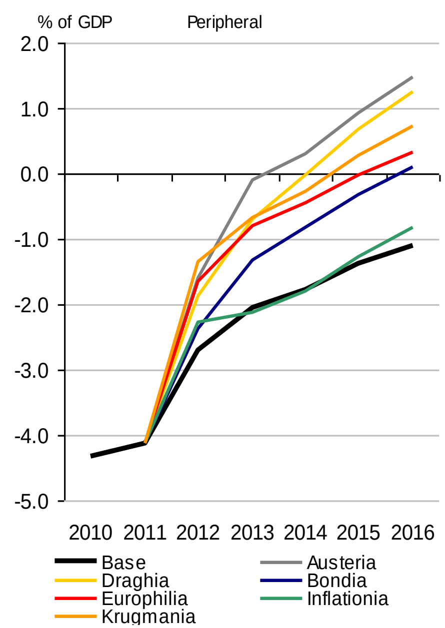
- Inflation remains generally subdued…
- …and the periphery gradually regains competitiveness with lower inflation than in the core
- *Austeria*'s combination of fiscal restraint and reform results in the lowest inflation, closer to 1% in the longer term
- Monetary ease of *Draghia* pushes inflation higher, exceeding 3% in the short term
- The more aggressively reflationary scenarios push inflation higher still
- The highest rates, in *Inflationia*, exceed 4%, as the ECB's inflation target is raised

Current Account – *Austeria* wins…

% of GDP	EZ					Core					Peripheral				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Base	0.4	0.6	0.6	0.7	0.9	2.0	2.0	1.9	1.8	1.9	-2.7	-2.0	-1.8	-1.4	-1.1
Austeria	1.1	1.8	1.8	2.0	2.3	2.5	2.7	2.6	2.6	2.7	-1.6	-0.1	0.3	0.9	1.5
Draghia	0.7	1.1	1.4	1.7	2.0	2.1	2.0	2.1	2.2	2.4	-1.9	-0.7	0.0	0.7	1.3
Bondia	0.5	0.9	1.1	1.3	1.5	2.0	2.1	2.1	2.1	2.2	-2.4	-1.3	-0.8	-0.3	0.1
Europhilia	0.0	0.1	0.1	0.2	0.3	0.9	0.6	0.4	0.3	0.3	-1.6	-0.8	-0.5	0.0	0.3
Inflationia	0.0	-0.3	-0.1	0.1	0.3	1.2	0.7	0.8	0.8	0.9	-2.3	-2.1	-1.8	-1.3	-0.8
Krugmania	0.2	0.1	0.2	0.4	0.6	1.0	0.5	0.5	0.5	0.5	-1.4	-0.7	-0.3	0.3	0.7







- For the Eurozone as a whole the *Austeria* scenario results in the biggest increase in its current account surplus. After 5 years, the improvement is 0.7% for the core, and 2.3% for the periphery
- This reflects the combined effects of weak demand, euro depreciation and structural reform. However, the improvement comes at the expense of unemployment
- Stronger demand growth, and in some cases inflation, especially in the more reflationary scenarios, leads to less positive outcomes for the current account…
- …but crucially the periphery improves its relative position, with all but the *Inflationia* scenario showing moves back towards balance in the long term.

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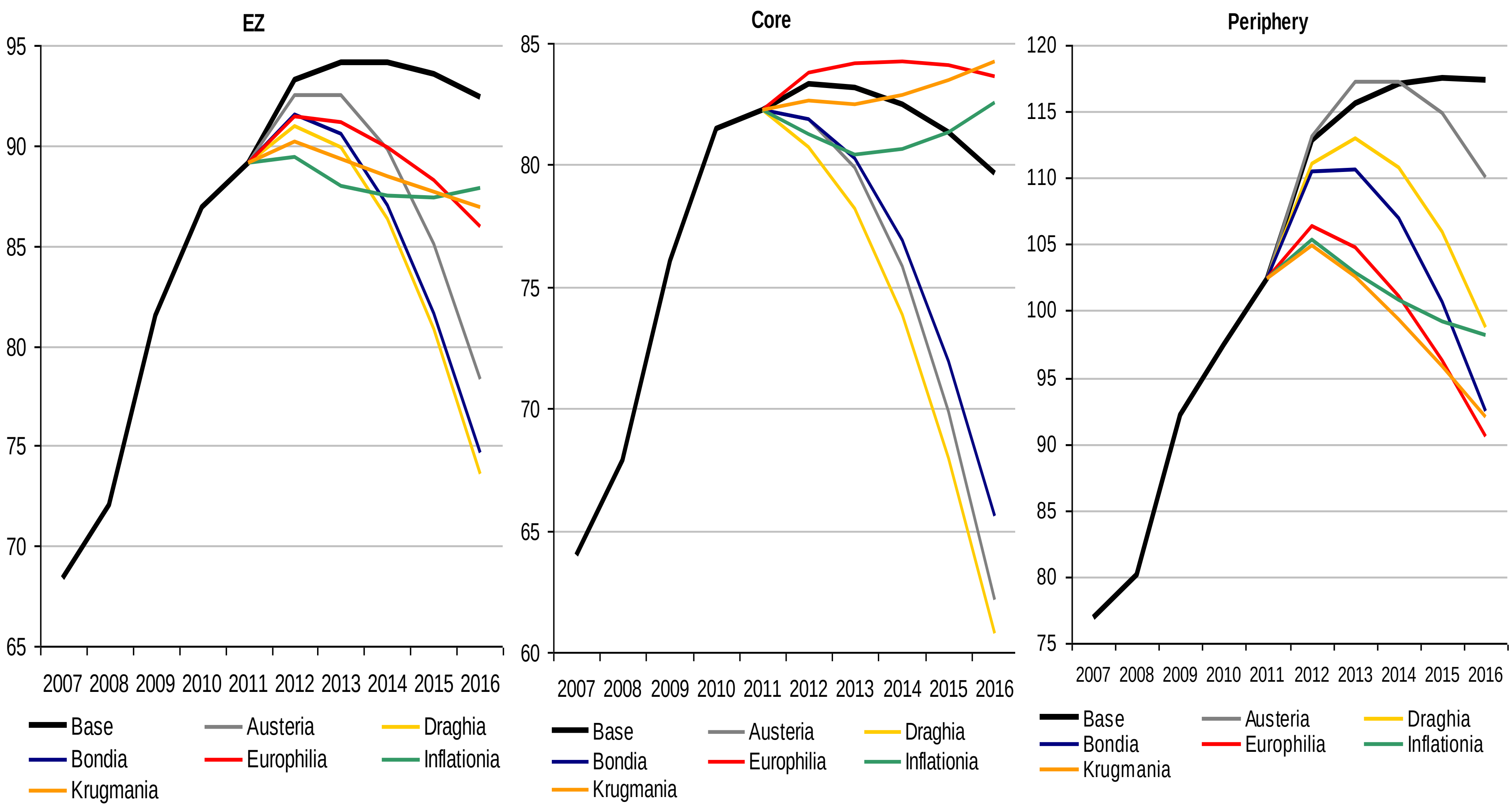
Consequences for public debt (% of GDP)



Public Debt-to-GDP – *Draghia* wins…

EZ	2012	2013	2014	2015	2016
Base	93	94	94	93	92
Austeria	92	93	90	85	78
Draghia	91	90	86	81	74
Bondia	92	91	87	82	75
Europhilia	91	91	90	88	86
Inflationia	89	88	87	87	88
Krugmania	90	89	88	88	87

Core	2012	2013	2014	2015	2016
Base	83	83	83	81	80
Austeria	82	80	76	70	62
Draghia	81	78	74	68	61
Bondia	82	80	77	72	66
Europhilia	84	84	84	84	84
Inflationia	81	80	81	81	83
Krugmania	83	82	83	83	84

Peripheral	2012	2013	2014	2015	2016
Base	113	116	117	117	117
Austeria	113	117	117	115	110
Draghia	111	113	111	106	99
Bondia	110	111	107	101	93
Europhilia	106	105	101	96	91
Inflationia	105	103	101	99	98
Krugmania	105	103	99	96	92

- The *Bondia* and *Draghia* scenarios result in the largest falls in the debt to GDP profiles from a eurozone perspective, to around 75% after 5 years
- …for the core countries, the ratio falls close to 60%
- Fiscal transfers in the *Europhilia-, Inflationia* and *Krugmania* scenarios result in significant relative deterioration in the debt to GDP profiles for the core countries, with average ratios remaining above 80%...
- …while the periphery sees ratios fall to between 90-100%
- The debt trajectory for the peripheral countries in the *Austeria* scenario show no significant decline as weak nominal GDP growth offsets budget cuts, implying that debt relief/default would be likely in the absence of other policy changes

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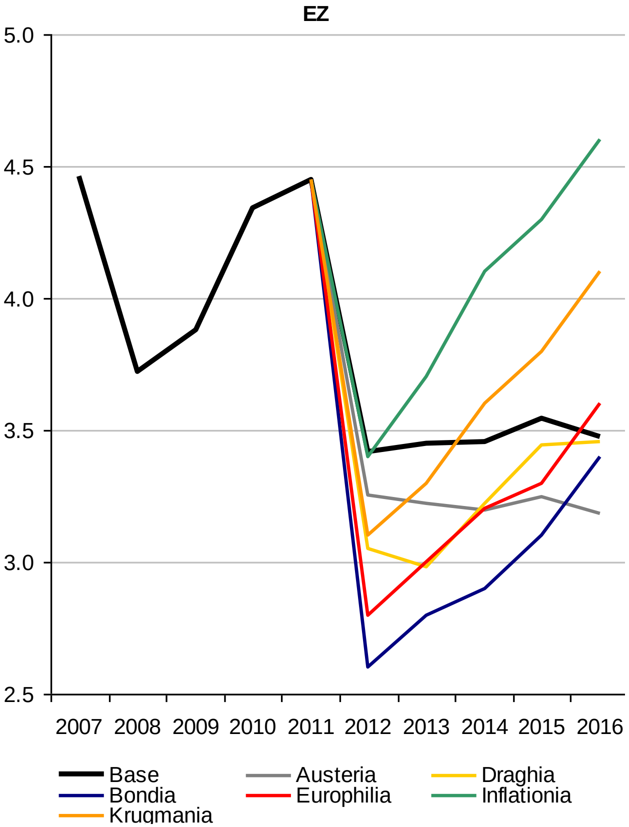
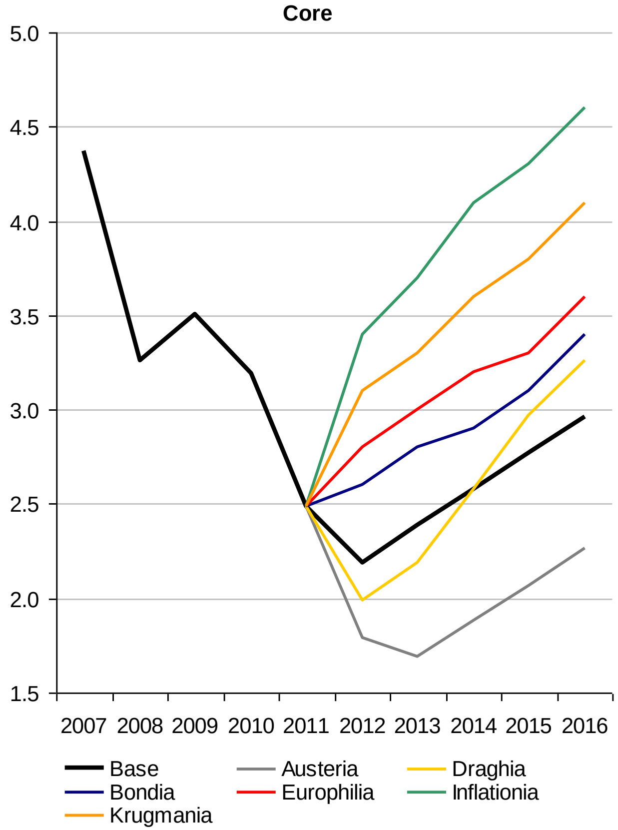
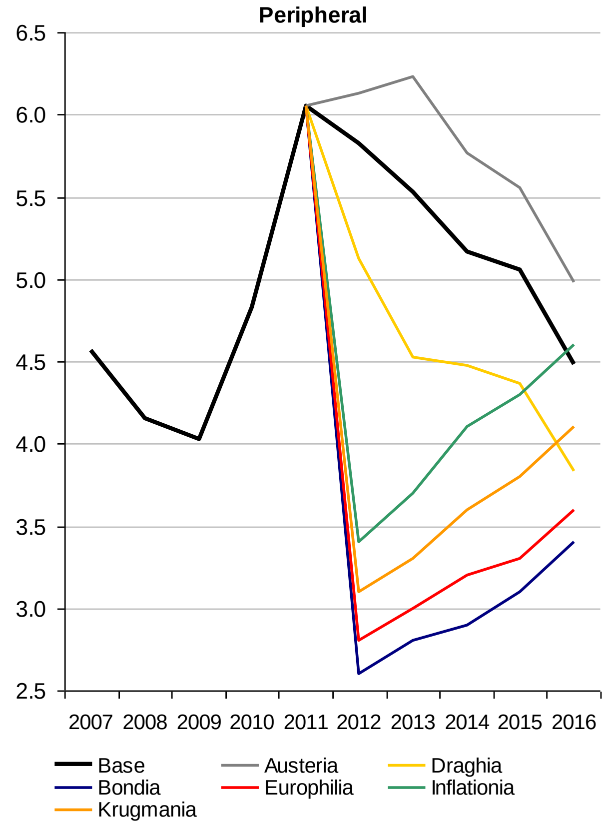
Consequences for bond yields (10 yr yields)







*Peripheral countries= Spain + Italy

Bond yields - the Great Reconvergence

- Current yield spreads are unsustainable – reflecting massive flight to safety from default and EMU break-up risk in the periphery…
- …hence all scenarios show some degree of reconvergence
- The *Austeria* scenario remains closest to the status quo, but weak growth and failure debt-to-GDP to fall suggests that ultimately default or restructuring may resolve the issue
- In *Draghia*, quantitative easing helps to hold down yields in the short term, but even here, gradual improvement in growth and a reversal of safe haven flows leads to some yield convergence. Core yields head towards 3%, peripheral to 4%
- By assumption, common bonds in *Bondia*, *Europhilia-, Inflationia* and *Krugmania* result in **full** convergence, although spreads on legacy debt would take time to grind lower after an initial 'announcement' rally
- Higher growth, inflation and debt profiles in *Inflationia* and *Krugmania* provide fundamental pressures towards yields of over 4% by the end of the period...
- …nevertheless, this still provides huge relief to the interest burden on the periphery

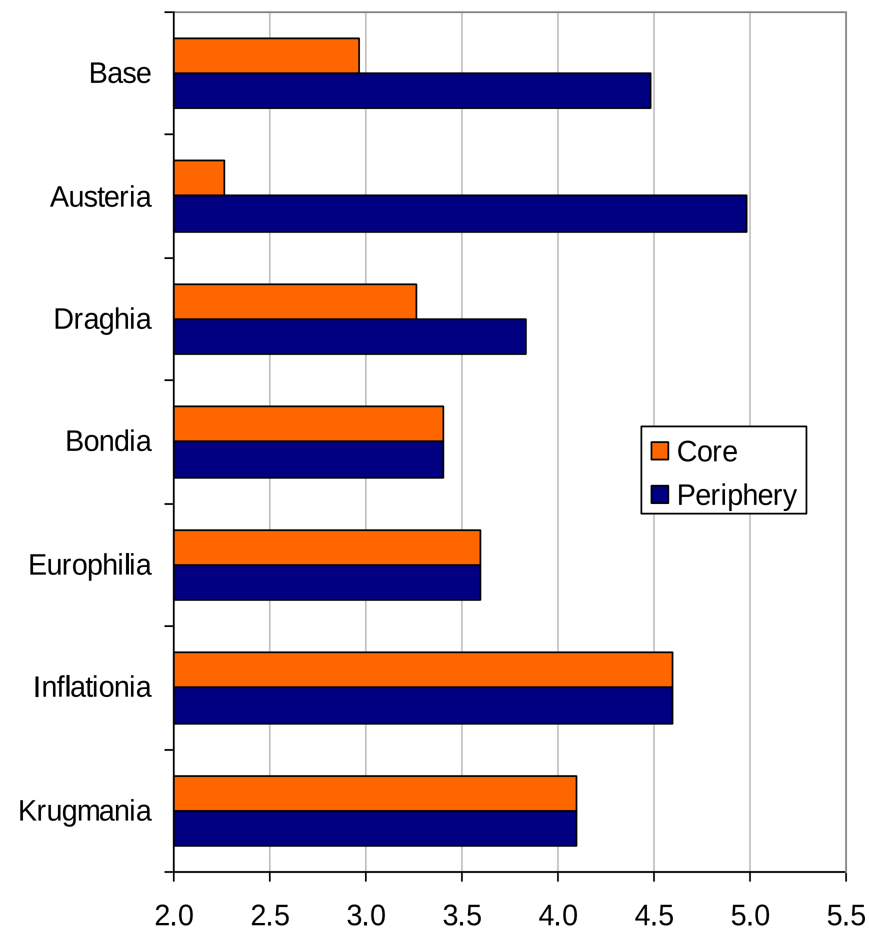
Bond yields – core rises, periphery falls

EZ	2012	2013	2014	2015	2016
Base	3.4	3.5	3.5	3.5	3.5
Austeria	3.3	3.2	3.2	3.2	3.2
Draghia	3.0	3.0	3.2	3.4	3.5
Bondia	2.6	2.8	2.9	3.1	3.4
Europhilia	2.8	3.0	3.2	3.3	3.6
Inflationia	3.4	3.7	4.1	4.3	4.6
Krugmania	3.1	3.3	3.6	3.8	4.1

Core	2012	2013	2014	2015	2016
Base	2.2	2.4	2.6	2.8	3.0
Austeria	1.8	1.7	1.9	2.1	2.3
Draghia	2.0	2.2	2.6	3.0	3.3
Bondia	2.6	2.8	2.9	3.1	3.4
Europhilia	2.8	3.0	3.2	3.3	3.6
Inflationia	3.4	3.7	4.1	4.3	4.6
Krugmania	3.1	3.3	3.6	3.8	4.1

Periphery	2012	2013	2014	2015	2016
Base	5.8	5.5	5.2	5.1	4.5
Austeria	6.1	6.2	5.8	5.6	5.0
Draghia	5.1	4.5	4.5	4.4	3.8
Bondia	2.6	2.8	2.9	3.1	3.4
Europhilia	2.8	3.0	3.2	3.3	3.6
Inflationia	3.4	3.7	4.1	4.3	4.6
Krugmania	3.1	3.3	3.6	3.8	4.1

Scenarios for Eurozone 10 year yields in 2016



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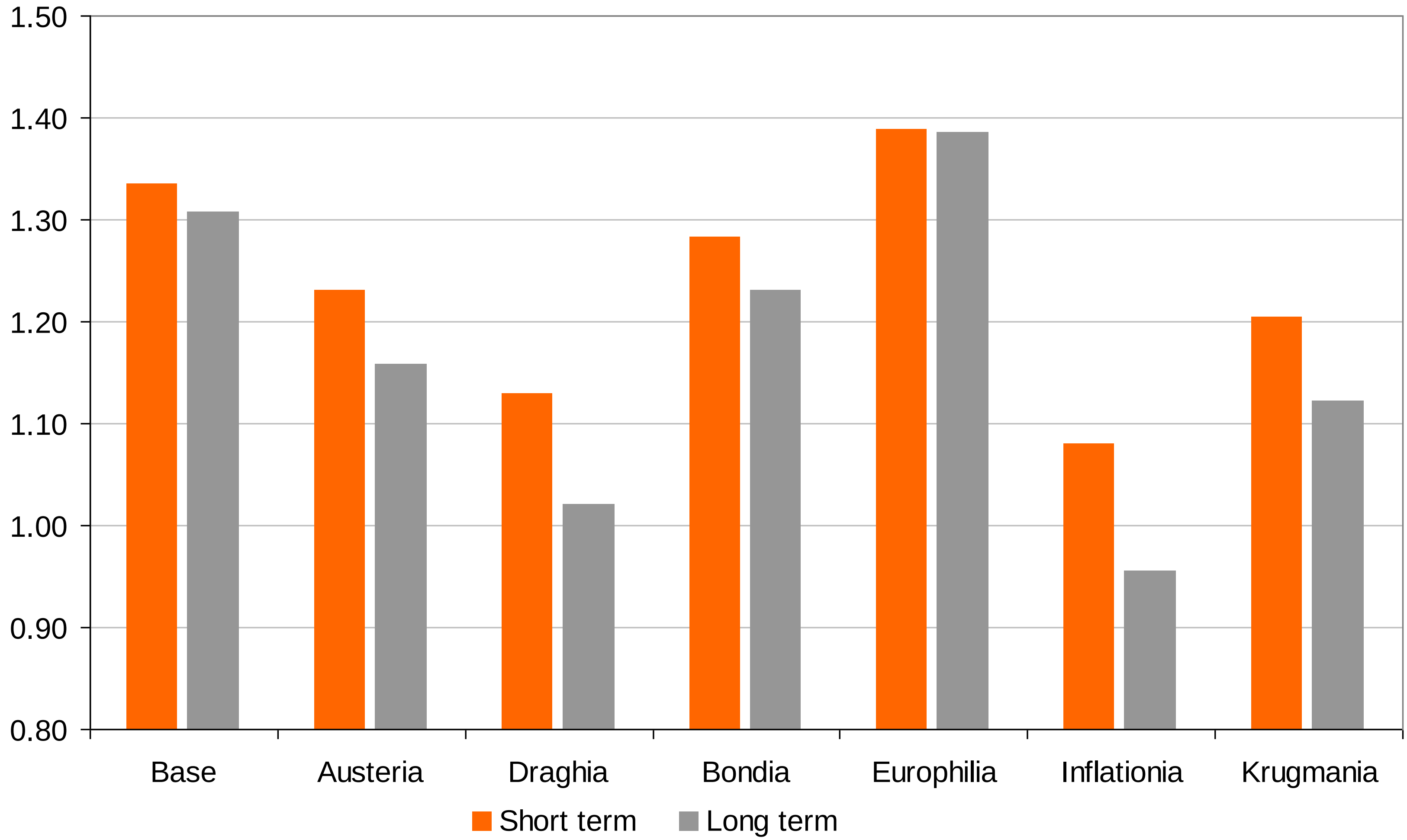
EUR/USD exchange rate in the six scenarios



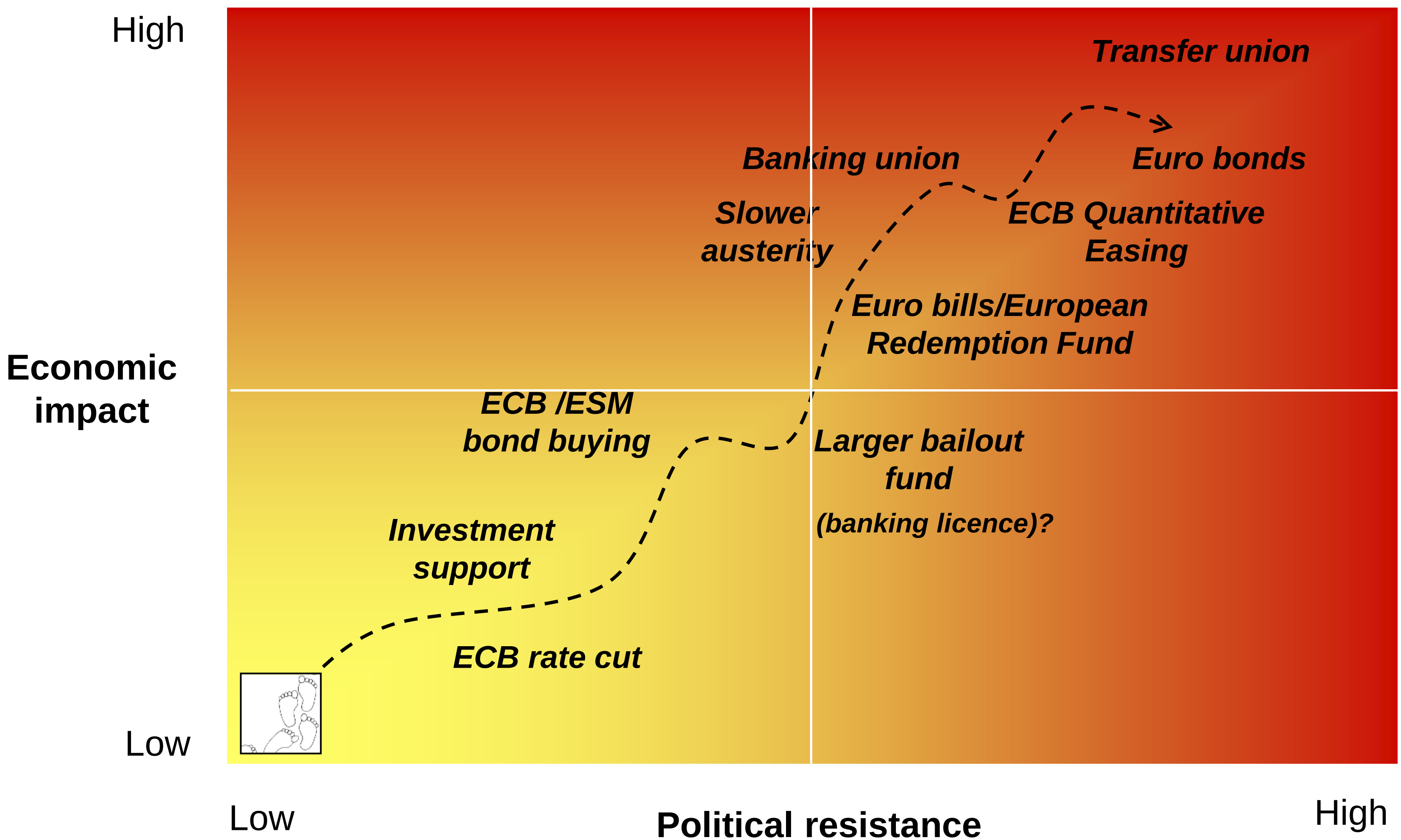
Short term: years 1-2

Long term: year 3-5

Roads to Survival – not one looks smooth

- Our six scenarios show that EMU can return to a sustainable path.
- Calibrating the impact of the policy changes, particularly in combination, is challenging, given that some are unprecedented and the financial system is both dysfunctional and undergoing enormous structural change. Nevertheless, we believe our estimates to be plausible.
- Growth could be boosted by up to 2% of GDP within two years, raising output by as much as a cumulative 5% within five years. This could reduce unemployment by 1% in the core and 5% in the periphery.
- More aggressively reflationary scenarios such as *Europhilia, Inflationia* and *Krugmania* involve a tolerance of higher inflation and, for the core countries, a slower decline in the level of public debt.
- The benefit to the periphery from common bonds and fiscal transfers is particularly evident in the performance of their debt-to-GDP ratios, leading to a reconvergence with the core countries.
- There is also some rebalancing in current account positions, but the adoption of banking and/or funding union would in any case reduce the challenge of financing imbalances.
- Clearly, the scale and timing of the policy changes is debateable. As our previous report emphasised, the major political barriers could be reduced more quickly by further economic and financial shocks.
- There are many possible routes for the policy journey…

A possible route?



Annex A
Detailed country results

Germany – growth vs. debt consolidation

Base (muddle through)	2012	2013	2014	2015	2016
GDP, % yoy	0.8	1.5	1.6	1.4	1.3
Unemployment, %	5.6	5.5	5.3	5.2	5.1
CPI, % yoy	2.3	1.8	1.8	1.7	1.8
Current account (% of GDP)	4.0	3.8	3.5	3.3	3.1
Debt/GDP	79.9	78.1	76.2	74.5	72.7
Yields (gov 10yr)	1.6	1.8	2.1	2.3	2.6

- Aggressive reflation could lift growth to close to 3% after 2 years, and inflation to 4%.
- But combined with fiscal transfers, this might prevent the public debt-to-GDP ratio from falling to below 60%...
- …and the current account surplus could fall below 2%

Austeria	2012	2013	2014	2015	2016
GDP, % yoy	0.5	0.6	1.2	1.1	1.0
Unemployment, %	5.7	5.8	5.8	5.7	5.7
CPI, % yoy	2.9	1.8	1.5	1.3	1.3
Current account (% of GDP)	4.4	4.5	4.2	4.0	3.9
Debt/GDP	78.4	74.8	69.5	63.0	55.1
Yields (gov 10yr)	1.2	1.1	1.4	1.6	1.9

Europhilia	2012	2013	2014	2015	2016
GDP, % yoy	1.3	1.7	1.6	1.3	1.2
Unemployment, %	5.5	5.3	5.2	5.1	5.0
CPI, % yoy	2.3	2.0	1.9	1.8	1.9
Current account (% of GDP)	2.8	2.4	2.0	1.8	1.5
Debt/GDP	80.4	79.3	78.4	77.8	77.4
Yields (gov 10yr)	2.8	3.0	3.2	3.3	3.6

Draghia	2012	2013	2014	2015	2016
GDP, % yoy	1.3	1.2	1.7	1.5	1.3
Unemployment, %	5.5	5.5	5.3	5.1	5.0
CPI, % yoy	3.7	2.5	2.4	2.5	2.6
Current account (% of GDP)	4.0	3.8	3.8	3.7	3.6
Debt/GDP	77.3	73.2	67.7	61.3	54.0
Yields (gov 10yr)	1.4	1.6	2.1	2.5	2.9

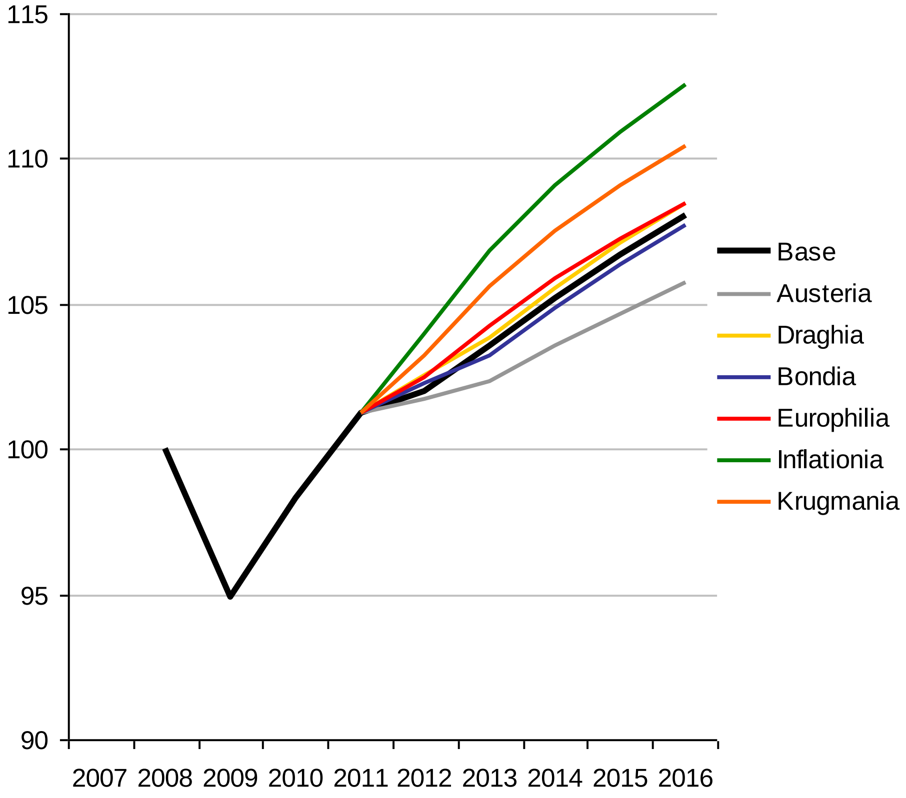
Inflationia	2012	2013	2014	2015	2016
GDP, % yoy	2.7	2.8	2.1	1.7	1.5
Unemployment, %	5.3	5.0	4.7	4.6	4.5
CPI, % yoy	4.2	3.1	3.1	3.2	3.6
Current account (% of GDP)	3.2	2.5	2.4	2.3	2.1
Debt/GDP	77.9	75.7	74.9	75.3	76.7
Yields (gov 10yr)	3.4	3.7	4.1	4.3	4.6

Bondia	2012	2013	2014	2015	2016
GDP, % yoy	1.0	1.0	1.6	1.4	1.3
Unemployment, %	5.6	5.6	5.4	5.3	5.3
CPI, % yoy	2.7	1.9	1.9	1.8	1.9
Current account (% of GDP)	4.0	3.9	3.7	3.6	3.4
Debt/GDP	78.5	75.4	71.0	65.7	59.4
Yields (gov 10yr)	2.6	2.8	2.9	3.1	3.4

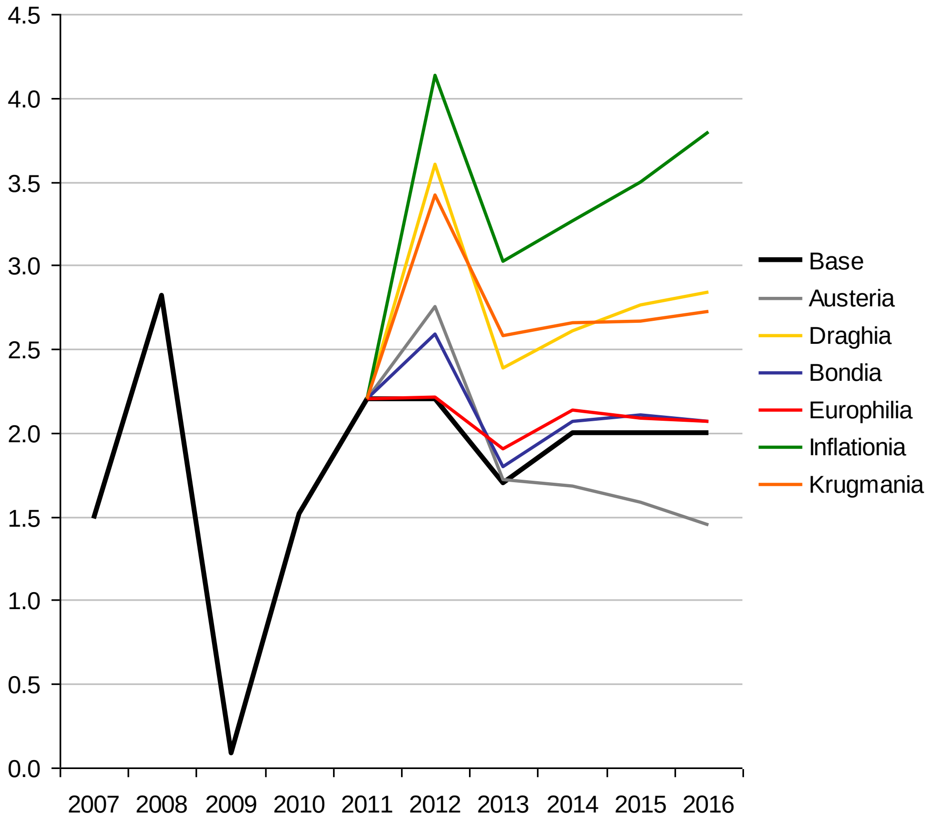
Krugmania	2012	2013	2014	2015	2016
GDP, % yoy	2.0	2.3	1.8	1.5	1.3
Unemployment, %	5.4	5.2	5.0	4.9	4.8
CPI, % yoy	3.5	2.7	2.5	2.4	2.5
Current account (% of GDP)	2.9	2.3	2.1	1.9	1.7
Debt/GDP	79.3	77.7	77.1	77.3	78.2
Yields (gov 10yr)	3.1	3.3	3.6	3.8	4.1

Germany: GDP and inflation

GDP (index, 2008=100)

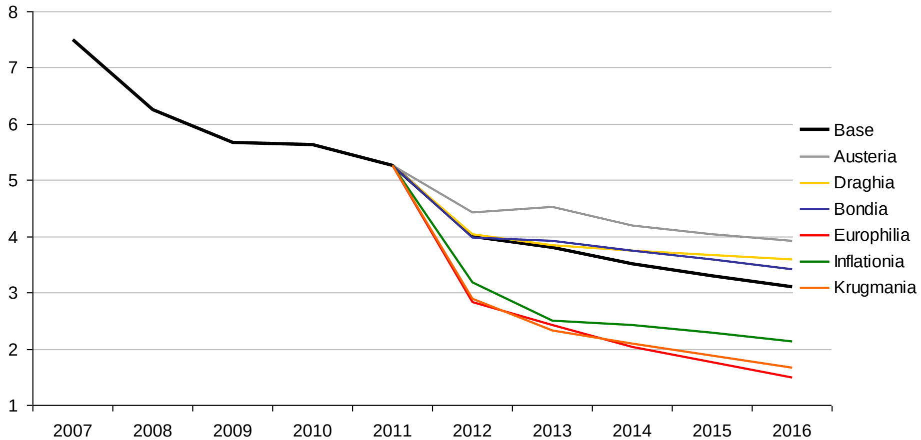


Inflation (%)

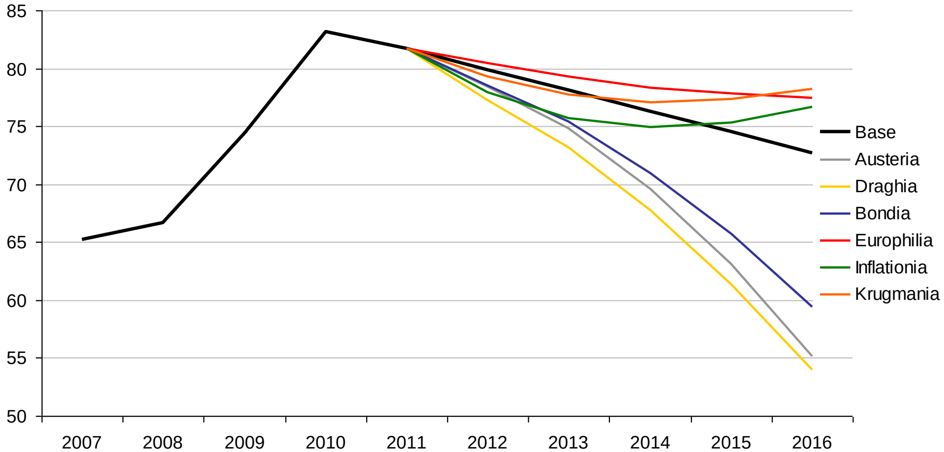


Germany: unemployment, current a/c and debt

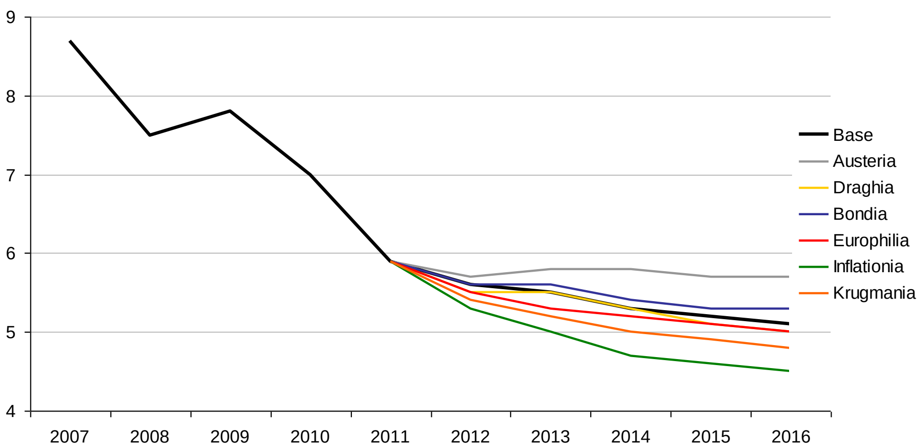
Unemployment (%)



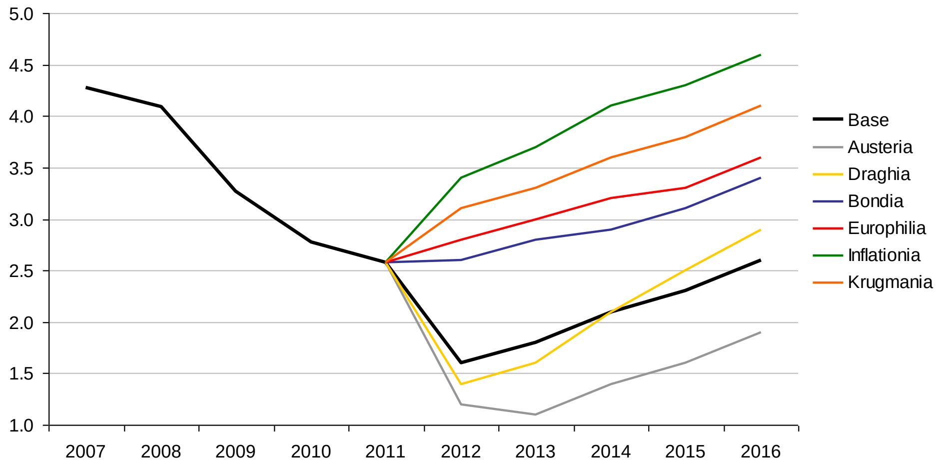
Debt-to-GDP ratio (%)



Current account (% of GDP)



10yr government yield (%)



France – slower path to debt sustainability

Base (muddle through)	2012	2013	2014	2015	2016
GDP, % yoy	0.3	1.0	1.5	1.6	1.6
Unemployment, %	10.4	10.5	10.4	10.2	10.0
CPI, % yoy	2.2	1.7	2.0	2.0	2.0
Current account (% of GDP)	-2.2	-2.0	-1.8	-1.5	-1.1
Debt/GDP	89.3	90.9	91.5	90.9	89.5
Yields (gov 10yr)	2.8	3.0	3.1	3.3	3.4

- France derives less benefit from euro depreciation than does Germany, struggling to hit 2% growth
- Public debt-to-GDP ratio also remains stubbornly high: transfers would keep it above 90%.
- The current account stays in modest deficit

Austeria	2012	2013	2014	2015	2016
GDP, % yoy	0.0	0.1	1.1	1.3	1.3
Unemployment, %	10.6	10.8	10.8	10.8	10.7
CPI, % yoy	2.8	1.7	1.7	1.6	1.5
Current account (% of GDP)	-1.8	-1.3	-1.1	-0.8	-0.3
Debt/GDP	87.8	87.6	84.8	79.5	71.9
Yields (gov 10yr)	2.4	2.3	2.4	2.6	2.7

Europhilia	2012	2013	2014	2015	2016
GDP, % yoy	0.8	1.2	1.5	1.5	1.5
Unemployment, %	10.3	10.5	10.3	10.1	9.9
CPI, % yoy	2.2	1.9	2.1	2.1	2.1
Current account (% of GDP)	-3.4	-3.4	-3.3	-3.0	-2.7
Debt/GDP	89.7	91.7	92.9	93.15	92.67
Yields (gov 10yr)	2.8	3.0	3.2	3.3	3.6

Draghia	2012	2013	2014	2015	2016
GDP, % yoy	0.8	0.7	1.6	1.7	1.6
Unemployment, %	10.4	10.4	10.2	10.0	9.9
CPI, % yoy	3.6	2.4	2.6	2.8	2.8
Current account (% of GDP)	-2.2	-2.0	-1.6	-1.1	-0.6
Debt/GDP	86.6	85.8	82.7	77.4	70.3
Yields (gov 10yr)	2.6	2.8	3.1	3.5	3.7

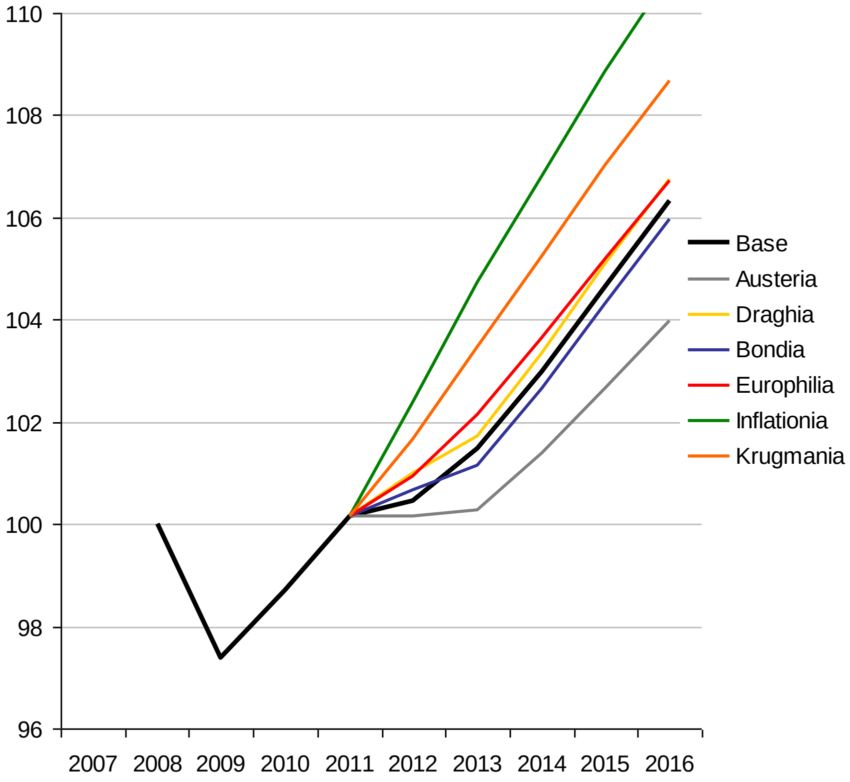
Inflationia	2012	2013	2014	2015	2016
GDP, % yoy	2.2	2.3	2.0	1.9	1.8
Unemployment, %	10.0	9.5	9.2	8.9	8.6
CPI, % yoy	4.1	3.0	3.3	3.5	3.8
Current account (% of GDP)	-3.0	-3.3	-2.9	-2.5	-2.1
Debt/GDP	87.1	87.8	89.1	90.2	91.4
Yields (gov 10yr)	3.4	3.7	4.1	4.3	4.6

Bondia	2012	2013	2014	2015	2016
GDP, % yoy	0.5	0.5	1.5	1.6	1.6
Unemployment, %	10.5	10.6	10.5	10.3	10.1
CPI, % yoy	2.6	1.8	2.1	2.1	2.1
Current account (% of GDP)	-2.2	-1.9	-1.6	-1.2	-0.8
Debt/GDP	87.7	87.8	85.5	80.9	74.6
Yields (gov 10yr)	2.6	**2.8**	2.9	3.1	3.4

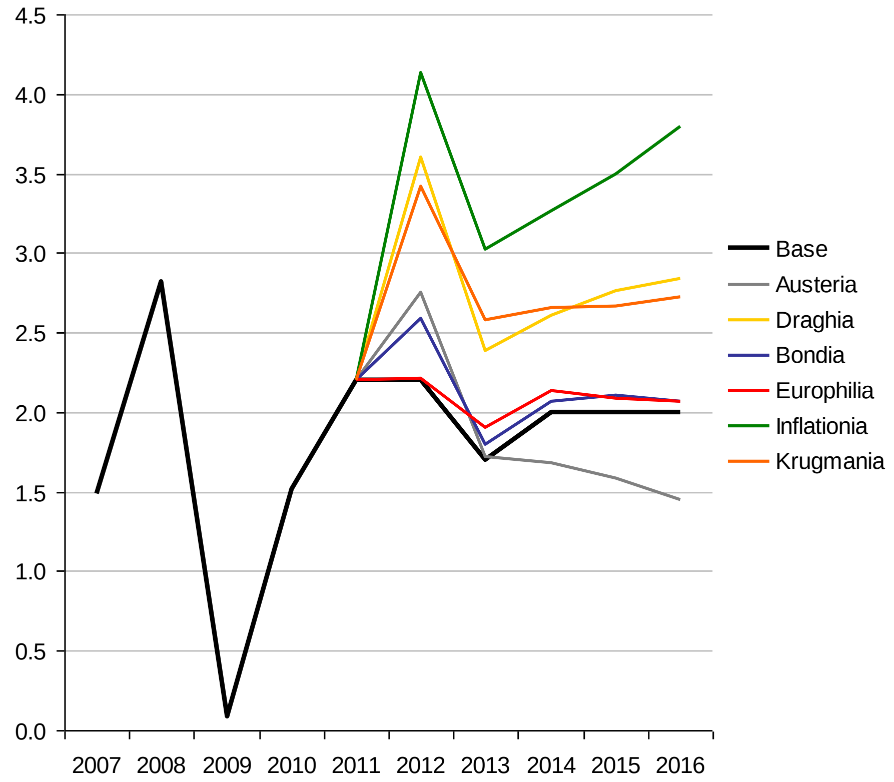
Krugmania	2012	2013	2014	2015	2016
GDP, % yoy	1.5	1.8	1.7	1.7	1.6
Unemployment, %	10.2	10.0	9.7	9.6	9.4
CPI, % yoy	3.4	2.6	2.7	2.7	2.7
Current account (% of GDP)	-3.3	-3.5	-3.2	-2.9	-2.5
Debt/GDP	88.5	89.9	91.4	92.4	93.2
Yields (gov 10yr)	3.1	3.3	3.6	3.8	4.1

France: GDP and inflation

GDP (index, 2008=100)

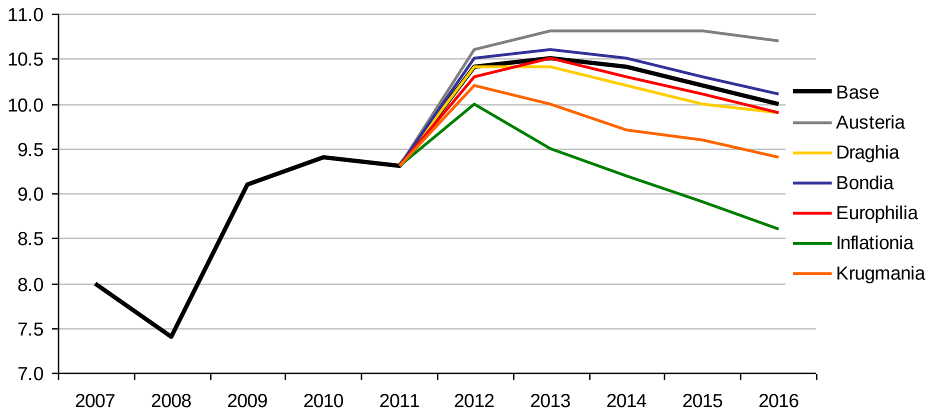


Inflation (%)

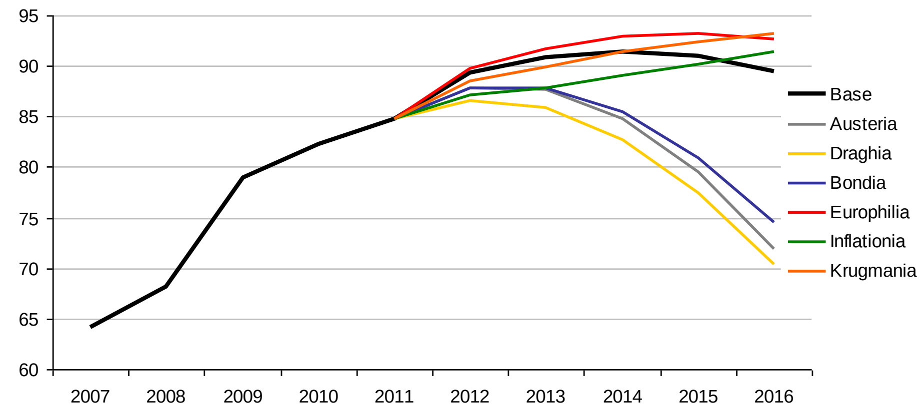


France: unemployment, current a/c and debt

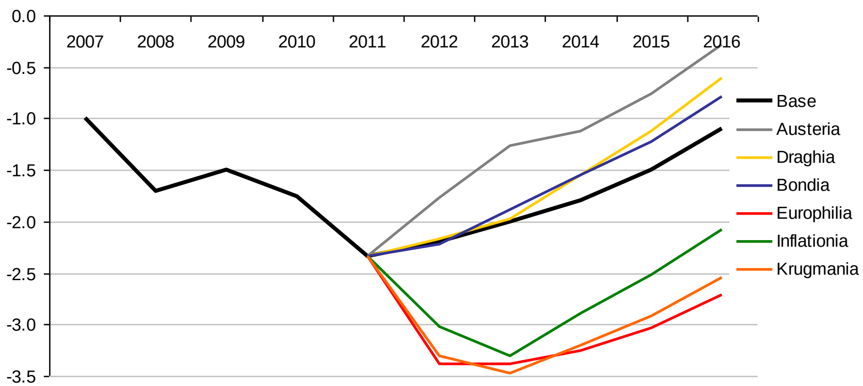
Unemployment (%)



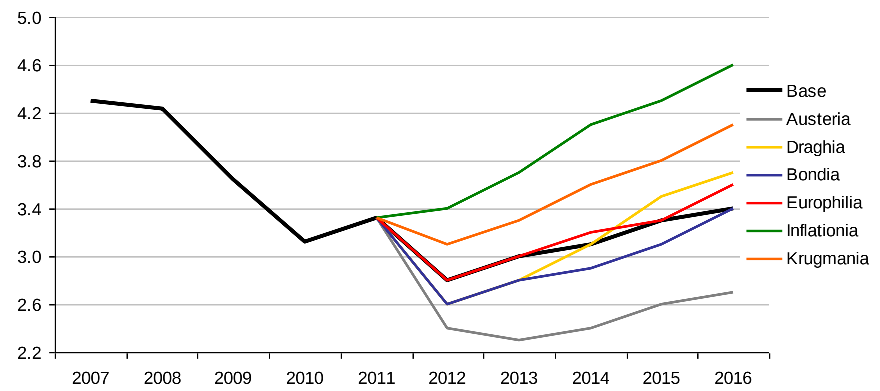
Debt-to-GDP ratio (%)



Current account (% of GDP)



10yr government yield (%)



Netherlands – Maastricht, or solidarity?

Base (muddle through)	2012	2013	2014	2015	2016
GDP, % yoy	-1.0	0.5	0.9	1.4	1.4
Unemployment, %	5.3	5.5	5.5	5.4	5.3
CPI, % yoy	2.5	2.6	1.8	1.8	1.7
Current account (% of GDP)	8.2	8.0	7.5	7.0	7.0
Debt/GDP	69.4	70.7	71.6	71.4	70.5
Yields (gov 10yr)	2.0	2.3	2.5	2.7	2.8

- Even more reflationary scenarios fail to lift growth above 2%, while inflation picks up to as much as 4%.
- Public debt-to-GDP ratio falls below 60%, although scenarios with transfers would leave it in the mid-70s
- The current account surplus generally remains high.

Austeria	2012	2013	2014	2015	2016
GDP, % yoy	-1.3	-0.4	0.5	1.1	1.1
Unemployment, %	5.4	5.8	6.0	6.0	6.0
CPI, % yoy	3.1	2.6	1.5	1.4	1.2
Current account (% of GDP)	8.6	8.7	8.2	7.7	7.8
Debt/GDP	67.9	67.4	65.0	60.0	53.1
Yields (gov 10yr)	1.6	1.6	1.8	2.0	2.1

Europhilia	2012	2013	2014	2015	2016
GDP, % yoy	-0.5	0.7	0.9	1.3	1.3
Unemployment, %	5.2	5.5	5.5	5.4	5.3
CPI, % yoy	2.6	2.8	1.9	1.9	1.8
Current account (% of GDP)	7.0	6.6	6.0	5.5	5.4
Debt/GDP	69.9	71.7	73.5	74.3	74.6
Yields (gov 10yr)	2.8	3.0	3.2	3.3	3.6

Draghia	2012	2013	2014	2015	2016
GDP, % yoy	-0.5	0.2	1.0	1.5	1.4
Unemployment, %	5.2	5.6	5.6	5.4	5.3
CPI, % yoy	3.9	3.3	2.4	2.6	2.5
Current account (% of GDP)	8.2	8.0	7.8	7.4	7.5
Debt/GDP	67.0	65.9	63.3	58.4	52.0
Yields (gov 10yr)	1.8	2.1	2.5	2.9	3.1

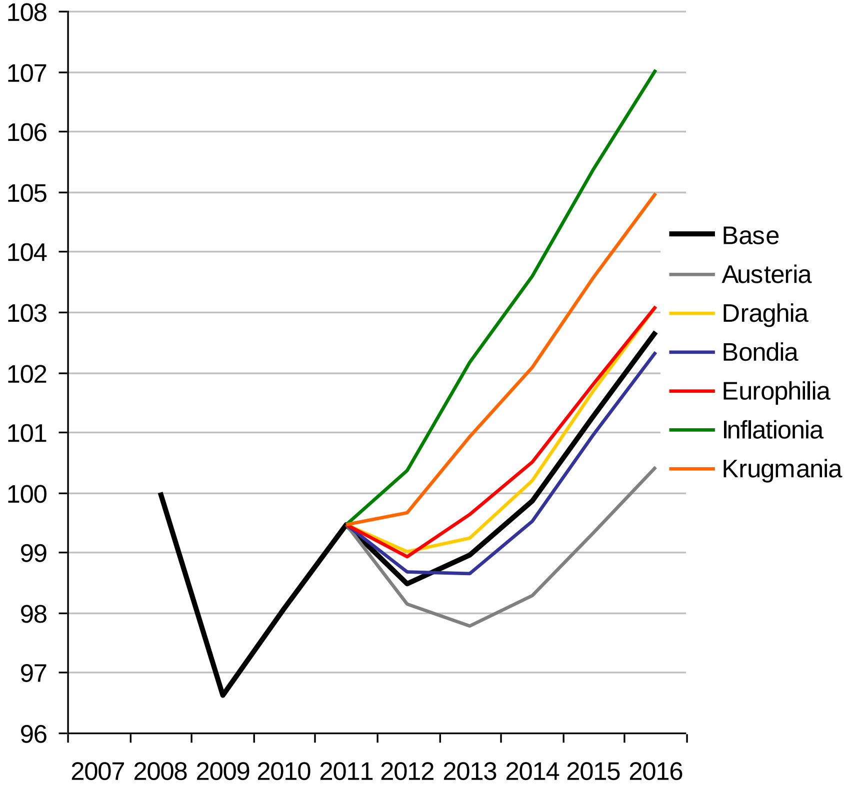
Inflationia	2012	2013	2014	2015	2016
GDP, % yoy	0.9	1.8	1.4	1.7	1.6
Unemployment, %	5.1	4.9	4.9	4.8	4.6
CPI, % yoy	4.5	3.9	3.1	3.3	3.5
Current account (% of GDP)	7.4	6.7	6.4	6.0	6.0
Debt/GDP	67.7	68.5	70.3	72.0	73.9
Yields (gov 10yr)	3.4	3.7	4.1	4.3	4.6

Bondia	2012	2013	2014	2015	2016
GDP, % yoy	-0.8	0.0	0.9	1.4	1.4
Unemployment, %	5.2	5.6	5.6	5.5	5.4
CPI, % yoy	2.9	2.7	1.9	1.9	1.8
Current account (% of GDP)	8.2	8.1	7.7	7.3	7.3
Debt/GDP	68.0	67.8	66.1	62.1	56.6
Yields (gov 10yr)	2.6	2.8	2.9	3.1	3.4

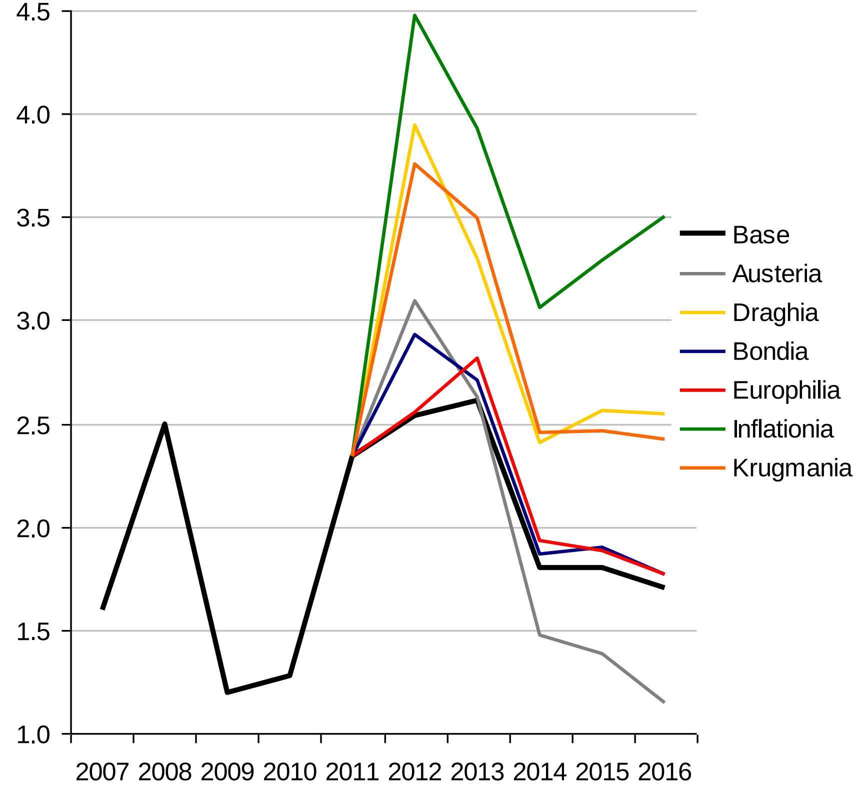
Krugmania	2012	2013	2014	2015	2016
GDP, % yoy	0.2	1.3	1.1	1.5	1.4
Unemployment, %	5.2	5.1	5.1	5.0	4.9
CPI, % yoy	3.8	3.5	2.5	2.5	2.4
Current account (% of GDP)	7.1	6.5	6.1	5.6	5.6
Debt/GDP	68.9	70.4	72.4	73.9	75.4
Yields (gov 10yr)	3.1	3.3	3.6	3.8	4.1

Netherlands: GDP and inflation

GDP (index, 2008=100)

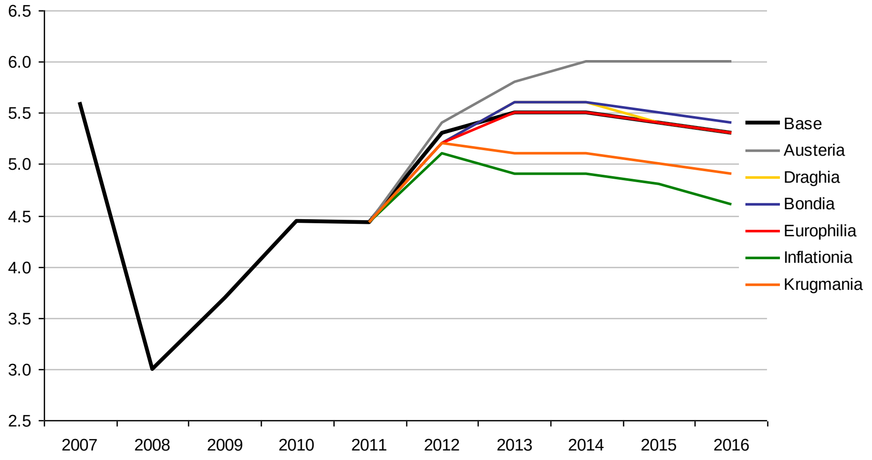


Inflation (%)

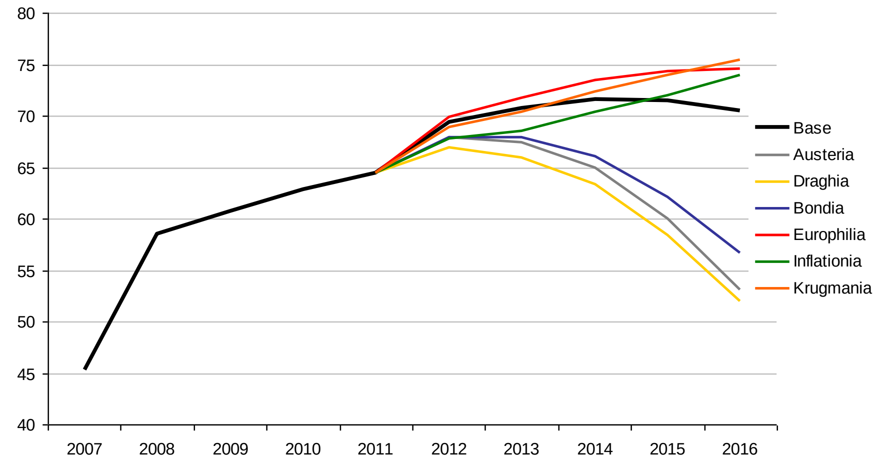


Netherlands: unemployment, current a/c and debt

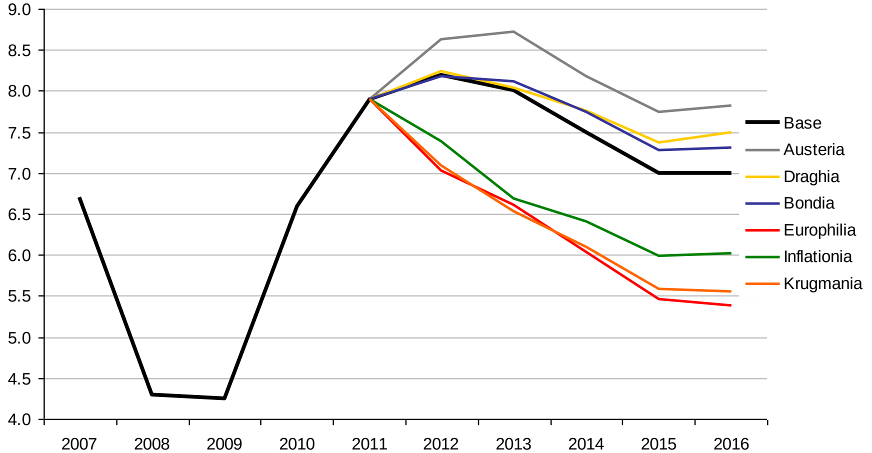
Unemployment (%)



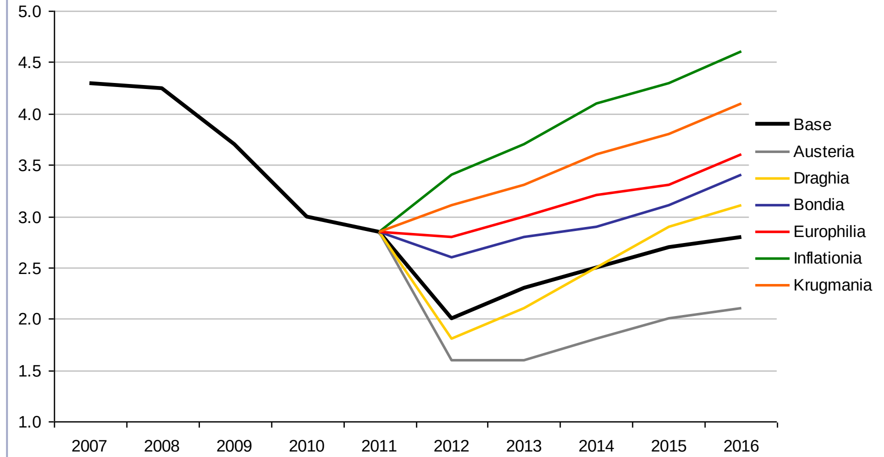
Debt-to-GDP ratio (%)



Current account (% of GDP)



10yr government yield (%)



Belgium

Base (muddle through)	2012	2013	2014	2015	2016
GDP, % yoy	0.4	1.4	1.6	1.7	1.6
Unemployment, %	7.6	7.5	7.4	7.3	7.1
CPI, % yoy	2.8	2.1	1.9	2.1	2.0
Current account (% of GDP)	0.3	0.5	0.6	0.6	0.6
Debt/GDP	98.7	98.2	97.0	94.7	92.2
Yields (gov 10yr)	3.4	3.5	3.4	3.4	3.5

- More reflationary scenarios push growth above 2%, while inflation picks up to as much as 4½%.
- Public debt-to-GDP ratio falls to the mid-70s although scenarios with transfers would leave it in the mid-90s
- The current account surplus remains close to balance.

Austeria	2012	2013	2014	2015	2016
GDP, % yoy	0.1	0.5	1.2	1.4	1.3
Unemployment, %	7.7	7.8	7.8	7.7	7.7
CPI, % yoy	3.4	2.1	1.6	1.7	1.5
Current account (% of GDP)	0.7	1.2	1.3	1.3	1.4
Debt/GDP	97.2	95.0	90.5	83.6	75.0
Yields (gov 10yr)	3.0	2.8	2.7	2.7	2.8

Europhilia	2012	2013	2014	2015	2016
GDP, % yoy	0.9	1.6	1.6	1.6	1.5
Unemployment, %	7.5	7.4	7.2	7.1	7.0
CPI, % yoy	2.8	2.3	2.0	2.2	2.1
Current account (% of GDP)	-0.9	-0.9	-0.9	-0.9	-1.0
Debt/GDP	98.9	98.6	97.8	96.1	94.3
Yields (gov 10yr)	2.8	3.0	3.2	3.3	3.6

Draghia	2012	2013	2014	2015	2016
GDP, % yoy	0.9	1.1	1.7	1.8	1.6
Unemployment, %	7.5	7.5	7.4	7.2	7.1
CPI, % yoy	4.2	2.8	2.5	2.9	2.8
Current account (% of GDP)	0.3	0.5	0.9	1.0	1.1
Debt/GDP	95.8	92.9	87.9	80.7	72.5
Yields (gov 10yr)	3.2	3.3	3.4	3.6	3.8

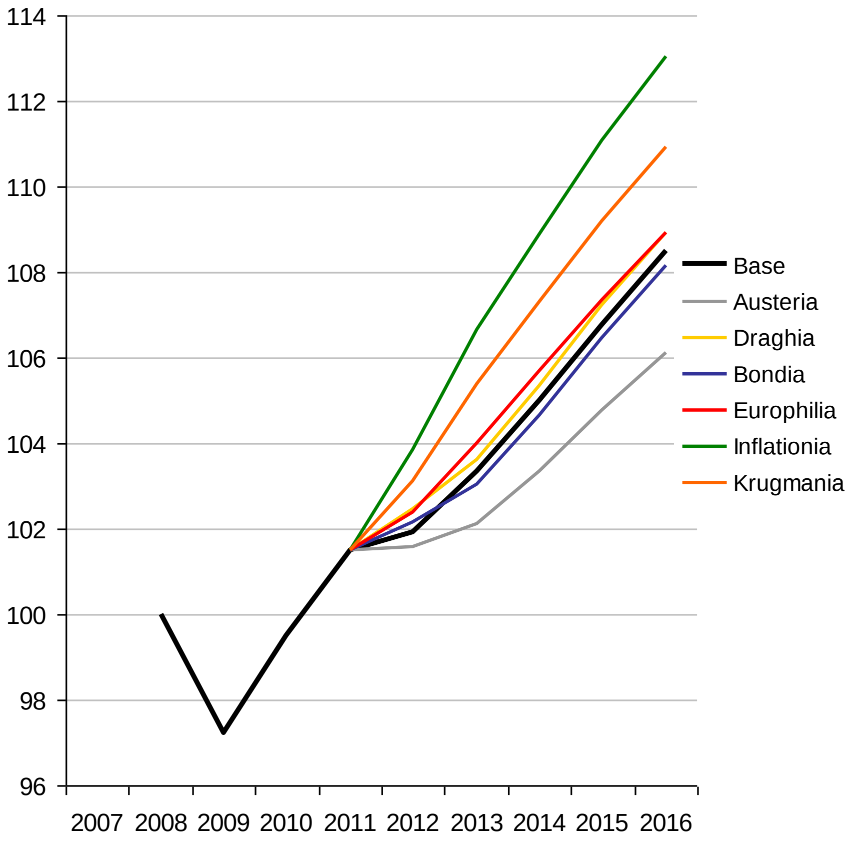
Inflationia	2012	2013	2014	2015	2016
GDP, % yoy	2.3	2.7	2.1	2.0	1.8
Unemployment, %	7.2	6.9	6.7	6.6	6.4
CPI, % yoy	4.7	3.4	3.2	3.6	3.8
Current account (% of GDP)	-0.5	-0.8	-0.5	-0.4	-0.4
Debt/GDP	95.9	94.1	93.2	92.1	91.8
Yields (gov 10yr)	3.4	3.7	4.1	4.3	4.6

Bondia	2012	2013	2014	2015	2016
GDP, % yoy	0.6	0.9	1.6	1.7	1.6
Unemployment, %	7.5	7.6	7.5	7.4	7.3
CPI, % yoy	3.2	2.2	2.0	2.2	2.1
Current account (% of GDP)	0.3	0.6	0.8	0.9	0.9
Debt/GDP	97.0	94.9	90.6	84.1	76.5
Yields (gov 10yr)	2.6	2.8	2.9	3.1	3.4

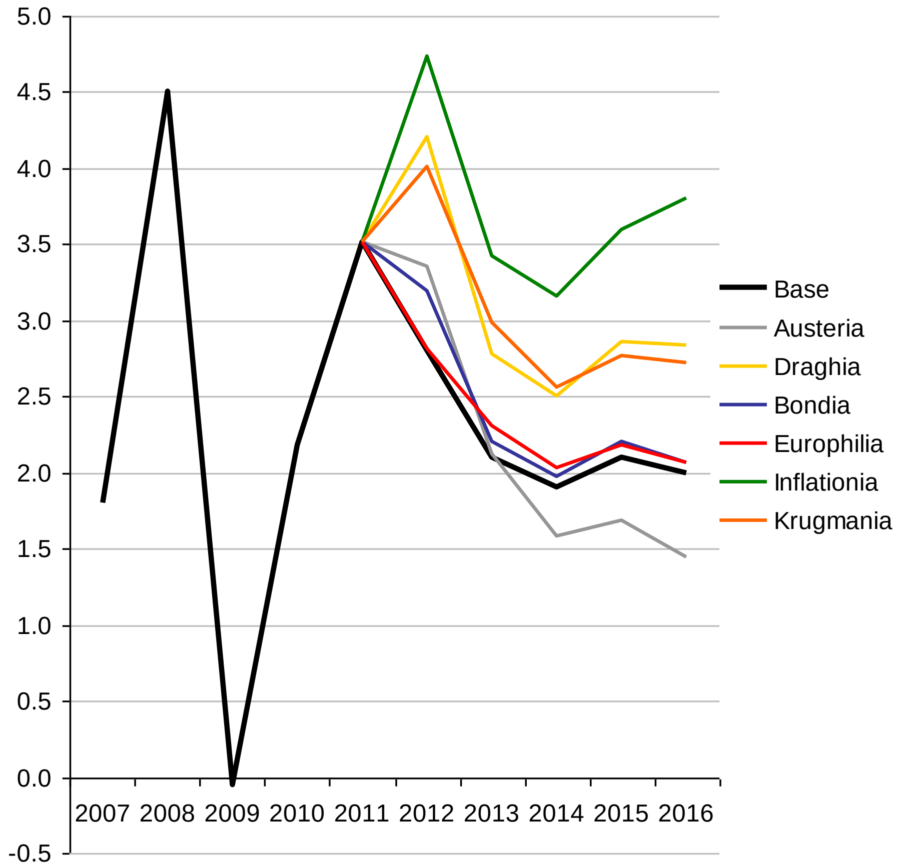
Krugmania	2012	2013	2014	2015	2016
GDP, % yoy	1.6	2.2	1.8	1.8	1.6
Unemployment, %	7.3	7.0	6.9	6.7	6.6
CPI, % yoy	4.0	3.0	2.6	2.8	2.7
Current account (% of GDP)	-0.8	-1.0	-0.8	-0.8	-0.8
Debt/GDP	97.5	96.5	95.9	94.8	94.2
Yields (gov 10yr)	3.1	3.3	3.6	3.8	4.1

Belgium: GDP and inflation

GDP (index, 2008=100)

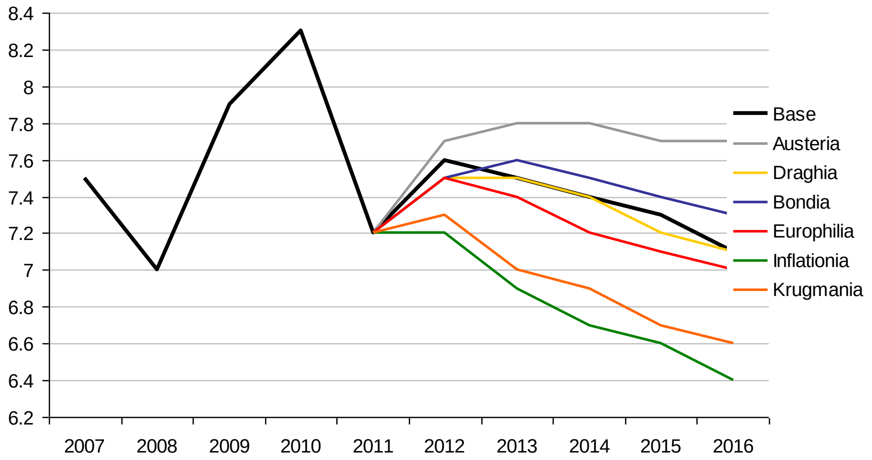


Inflation (%)

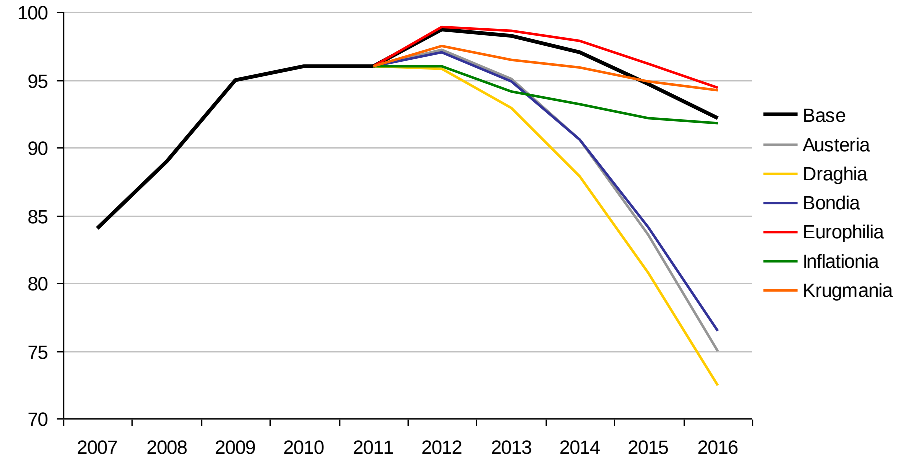


Belgium: unemployment, current a/c and debt

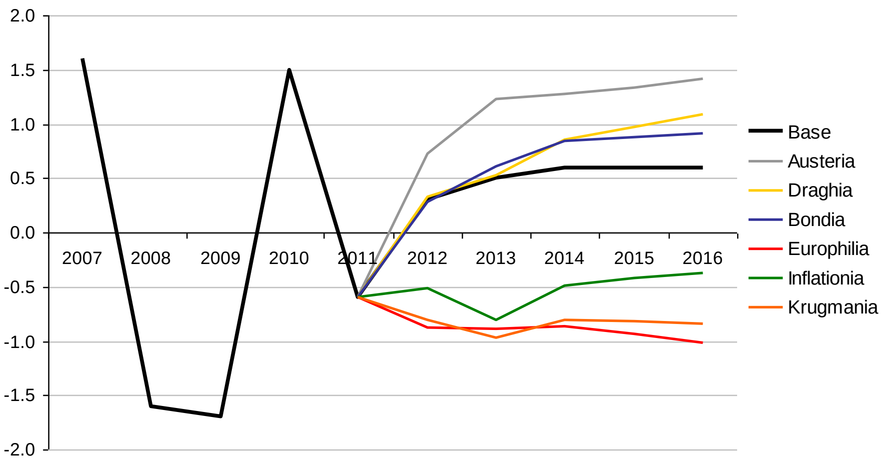
Unemployment (%)



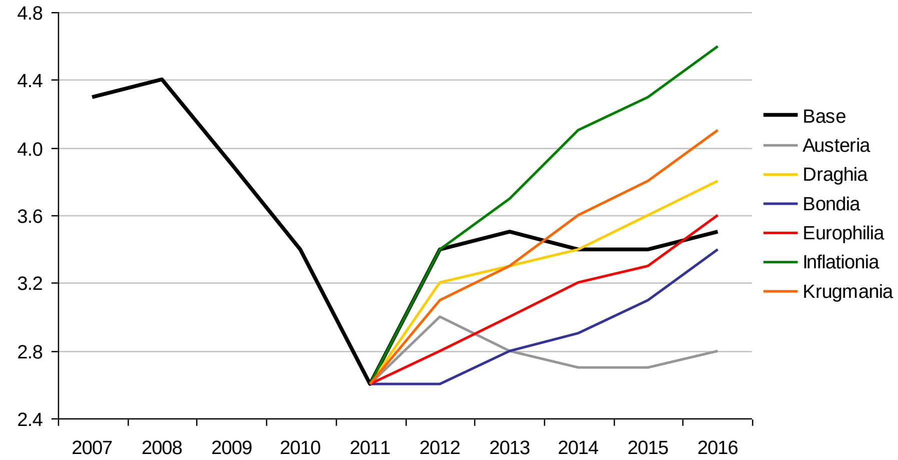
Debt-to-GDP ratio (%)



Current account (% of GDP)



10yr government yield (%)



Italy – a big beneficiary from debt relief

Base (muddle through)	2012	2013	2014	2015	2016
GDP, % yoy	-1.6	0.0	1.0	1.2	1.2
Unemployment, %	10.0	10.3	10.1	9.8	9.6
CPI, % yoy	3.0	2.1	1.6	1.7	1.8
Current account (% of GDP)	-2.5	-1.8	-1.6	-1.3	-1.1
Debt/GDP	122.3	122.8	122.5	121.7	120.8
Yields (gov 10yr)	5.7	5.4	5.0	4.8	4.4

- More reflationary scenarios add as much as 3% to growth, although inflation picks up to as much as 5%.
- Public debt-to-GDP ratio falls below 100%, and common bonds result in sharply lower bond yields and debt costs
- Some scenarios see the current account move into surplus

Austeria	2012	2013	2014	2015	2016
GDP, % yoy	-2.6	-1.6	0.4	0.8	1.0
Unemployment, %	10.2	11.0	11.0	10.9	10.7
CPI, % yoy	2.7	1.2	0.9	1.1	1.3
Current account (% of GDP)	-1.4	0.1	0.5	1.0	1.5
Debt/GDP	122.9	124.9	123.5	120.1	114.8
Yields (gov 10yr)	6.0	6.1	5.6	5.3	4.9

Europhilia	2012	2013	2014	2015	2016
GDP, % yoy	1.7	0.8	1.7	1.7	1.6
Unemployment, %	9.7	9.5	9.3	9.1	8.8
CPI, % yoy	3.0	1.8	1.6	1.6	1.9
Current account (% of GDP)	-1.4	-0.5	-0.3	0.1	0.3
Debt/GDP	115.1	110.9	105.1	98.8	91.9
Yields (gov 10yr)	2.8	3.0	3.2	3.3	3.6

Draghia	2012	2013	2014	2015	2016
GDP, % yoy	-1.5	-0.7	1.2	1.6	1.6
Unemployment, %	10.0	10.5	10.4	10.2	9.9
CPI, % yoy	3.5	1.9	1.8	2.3	2.6
Current account (% of GDP)	-1.7	-0.5	0.2	0.8	1.3
Debt/GDP	120.5	120.0	116.0	109.8	101.9
Yields (gov 10yr)	5.0	4.7	4.6	4.4	4.0

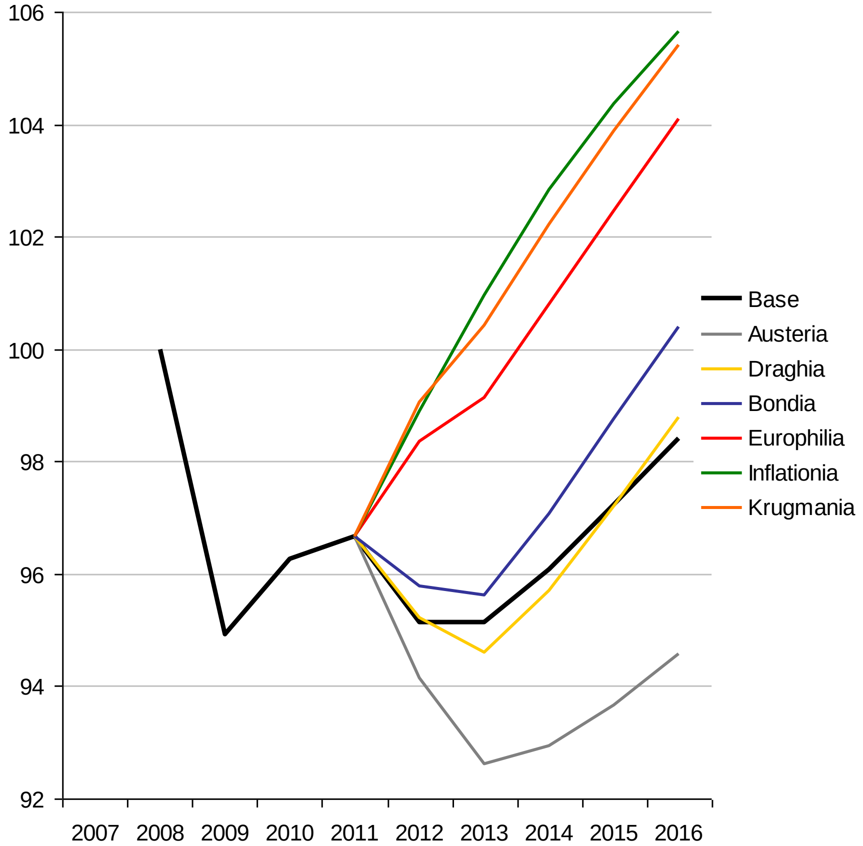
Inflationia	2012	2013	2014	2015	2016
GDP, % yoy	2.3	2.1	1.8	1.5	1.2
Unemployment, %	9.6	9.3	9.0	8.7	8.4
CPI, % yoy	5.3	3.5	2.7	2.8	3.0
Current account (% of GDP)	-2.1	-1.9	-1.6	-1.2	-0.8
Debt/GDP	113.8	108.4	104.2	101.0	98.9
Yields (gov 10yr)	3.4	3.7	4.1	4.3	4.6

Bondia	2012	2013	2014	2015	2016
GDP, % yoy	-0.9	-0.2	1.5	1.8	1.6
Unemployment, %	9.9	10.1	9.9	9.6	9.3
CPI, % yoy	2.9	1.8	1.5	1.7	1.9
Current account (% of GDP)	-2.1	-1.1	-0.7	-0.2	0.1
Debt/GDP	119.7	117.5	111.8	104.1	94.9
Yields (gov 10yr)	2.6	2.8	2.9	3.1	3.4

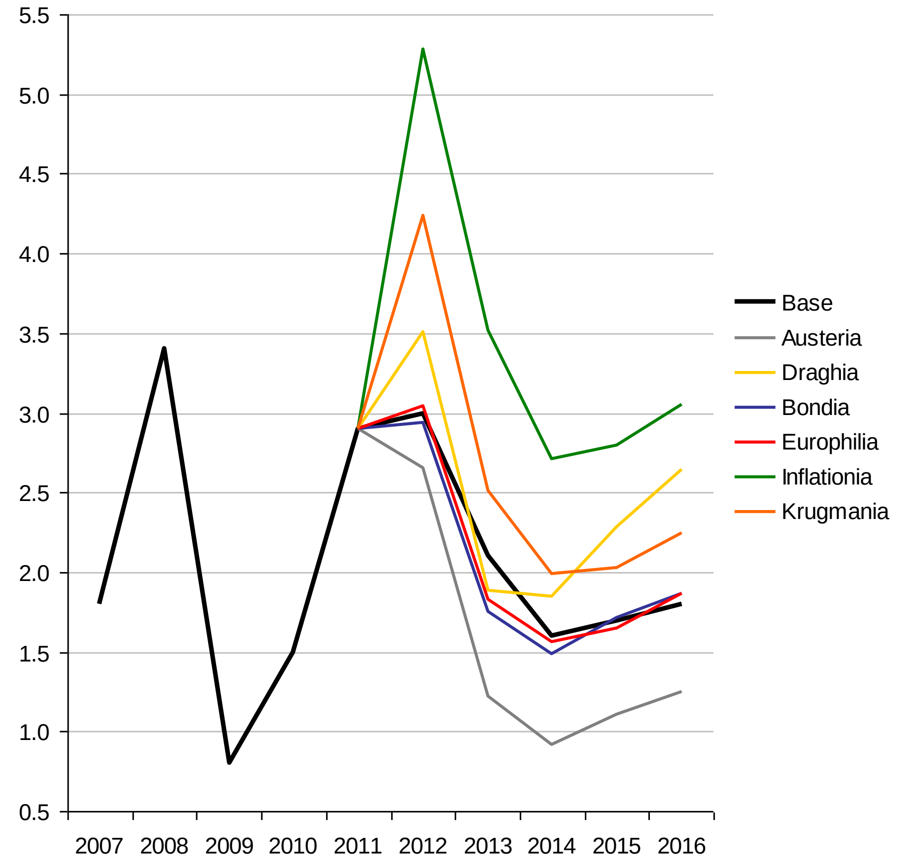
Krugmania	2012	2013	2014	2015	2016
GDP, % yoy	2.4	1.4	1.8	1.6	1.5
Unemployment, %	9.6	9.4	9.1	8.9	8.6
CPI, % yoy	4.2	2.5	2.0	2.0	2.2
Current account (% of GDP)	-1.1	-0.4	-0.1	0.3	0.7
Debt/GDP	113.4	108.3	103.0	97.8	92.9
Yields (gov 10yr)	3.1	3.3	3.6	3.8	4.1

Italy: GDP and inflation

GDP (index, 2008=100)

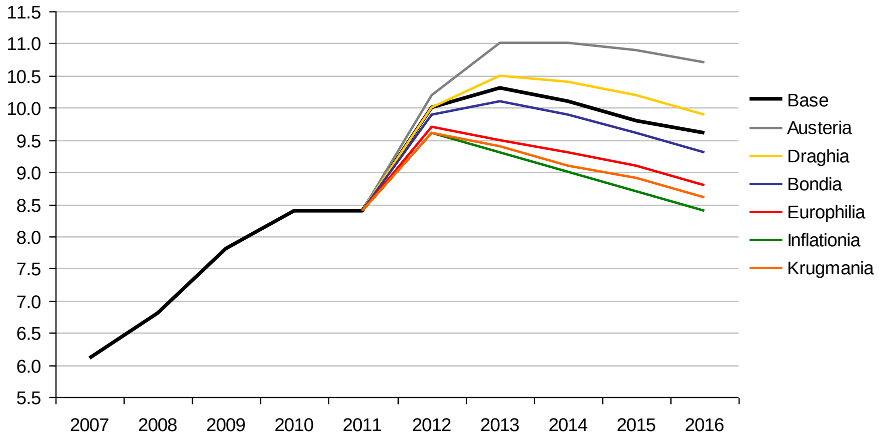


Inflation (%)

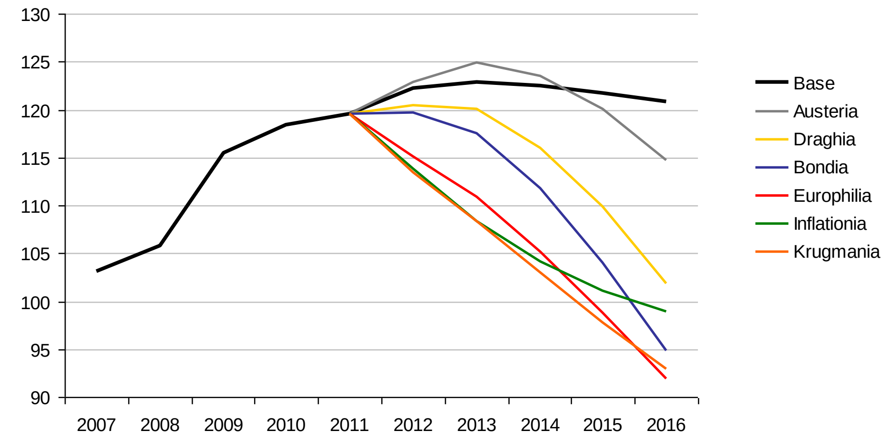


Italy: unemployment, current a/c and debt

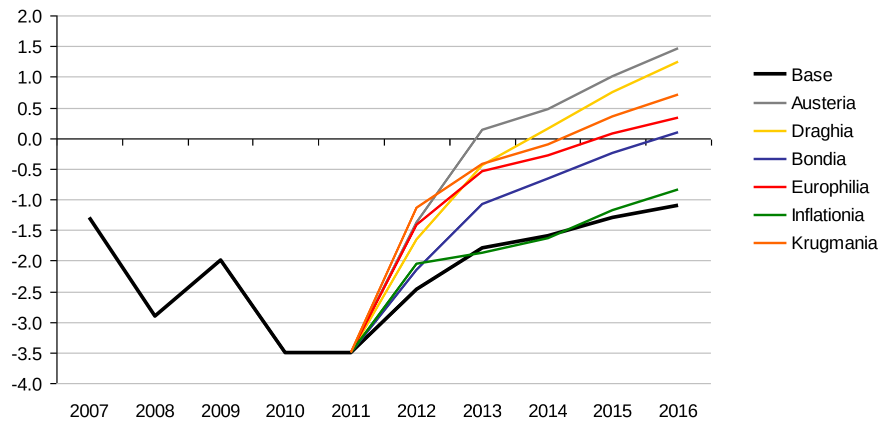
Unemployment (%)



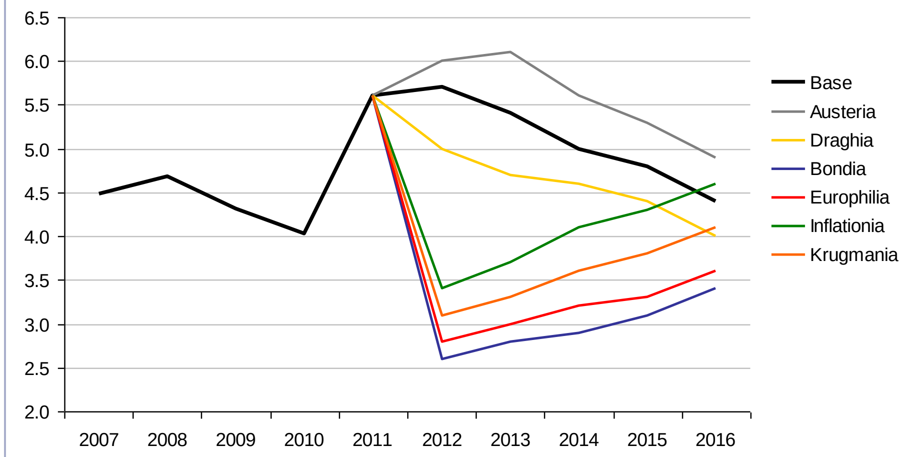
Debt-to-GDP ratio (%)



Current account (% of GDP)



10yr government yield (%)



Spain – growth boost of up to 3½%

Base (muddle through)	2012	2013	2014	2015	2016
GDP, % yoy	-1.3	-0.3	0.9	1.0	1.4
Unemployment, %	24.4	25.7	26.3	26.7	26.7
CPI, % yoy	1.8	1.7	1.2	1.6	1.7
Current account (% of GDP)	-2.3	-1.8	-1.5	-1.0	-0.6
Debt/GDP	0.0	0.0	0.0	0.0	0.0
Yields (gov 10yr)	0.0	0.0	0.0	0.0	0.0

- More reflationary scenarios add as much as 3% to growth, although inflation picks up to 4%
- Public debt-to-GDP ratio rises in Austeria, but other scenarios see it fall back towards 80%,
- Current account improves by 2% at most

Austeria	2012	2013	2014	2015	2016
GDP, % yoy	-2.3	-1.9	0.3	0.6	1.2
Unemployment, %	25.2	27.2	28.0	28.3	28.5
CPI, % yoy	1.5	0.8	0.5	1.0	1.2
Current account (% of GDP)	-1.2	0.1	0.6	1.3	2.0
Debt/GDP	0.0	0.0	0.0	0.0	0.0
Yields (gov 10yr)	0.0	0.0	0.0	0.0	0.0

Europhilia	2012	2013	2014	2015	2016
GDP, % yoy	2.0	0.5	1.6	1.5	1.8
Unemployment, %	23.5	24.0	24.0	24.0	23.9
CPI, % yoy	1.8	1.4	1.2	1.5	1.8
Current account (% of GDP)	-1.2	-0.5	-0.2	0.4	0.8
Debt/GDP	0.0	0.0	0.0	0.0	0.0
Yields (gov 10yr)	0.0	0.0	0.0	0.0	0.0

Draghia	2012	2013	2014	2015	2016
GDP, % yoy	-1.2	-1.0	1.1	1.4	1.8
Unemployment, %	24.5	26.2	26.5	26.6	26.5
CPI, % yoy	2.3	1.5	1.4	2.2	2.5
Current account (% of GDP)	-1.5	-0.5	0.3	1.1	1.8
Debt/GDP	0.0	0.0	0.0	0.0	0.0
Yields (gov 10yr)	0.0	0.0	0.0	0.0	0.0

Inflationia	2012	2013	2014	2015	2016
GDP, % yoy	2.6	1.8	1.7	1.3	1.4
Unemployment, %	23.2	23.1	23.0	23.1	23.2
CPI, % yoy	4.1	3.1	2.3	2.7	2.9
Current account (% of GDP)	-1.9	-1.9	-1.5	-0.9	-0.3
Debt/GDP	0.0	0.0	0.0	0.0	0.0
Yields (gov 10yr)	0.0	0.0	0.0	0.0	0.0

Bondia	2012	2013	2014	2015	2016
GDP, % yoy	-0.6	-0.5	1.4	1.6	1.8
Unemployment, %	24.2	25.2	25.5	25.6	25.5
CPI, % yoy	1.7	1.4	1.1	1.6	1.8
Current account (% of GDP)	-2.0	-1.1	-0.6	0.1	0.6
Debt/GDP	0.0	0.0	0.0	0.0	0.0
Yields (gov 10yr)	0.0	0.0	0.0	0.0	0.0

Krugmania	2012	2013	2014	2015	2016
GDP, % yoy	2.7	1.1	1.7	1.4	1.7
Unemployment, %	23.2	23.4	23.3	23.4	23.4
CPI, % yoy	3.0	2.1	1.6	1.9	2.1
Current account (% of GDP)	-1.0	-0.4	0.0	0.6	1.2
Debt/GDP	0.0	0.0	0.0	0.0	0.0
Yields (gov 10yr)	0.0	0.0	0.0	0.0	0.0

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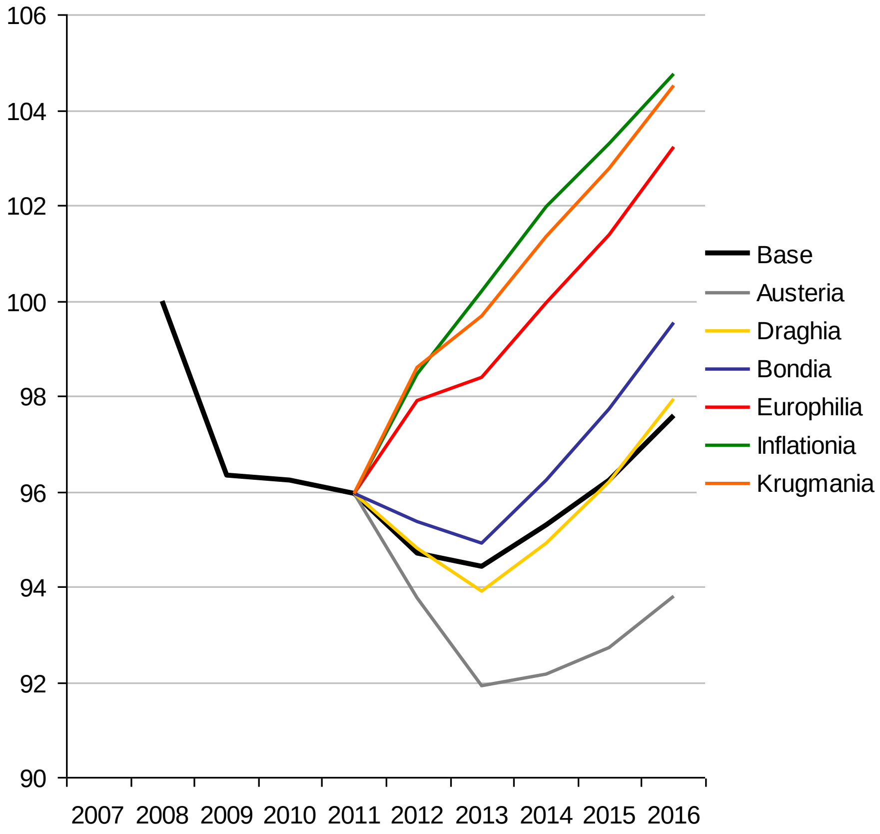
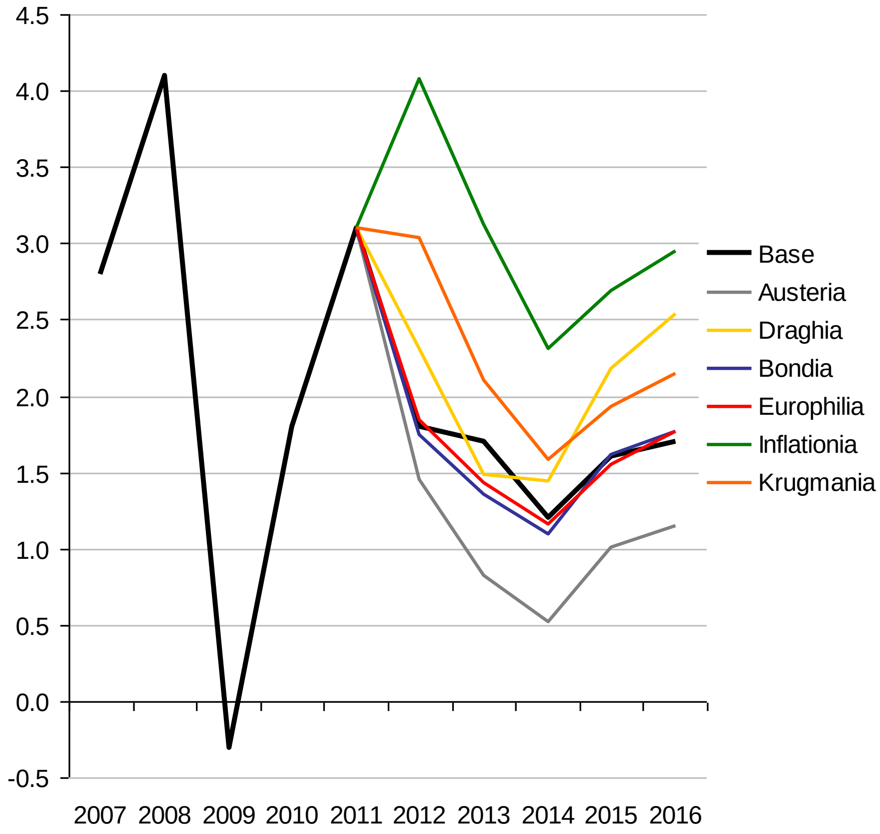
Spain: GDP and inflation

GDP (index, 2008=100)

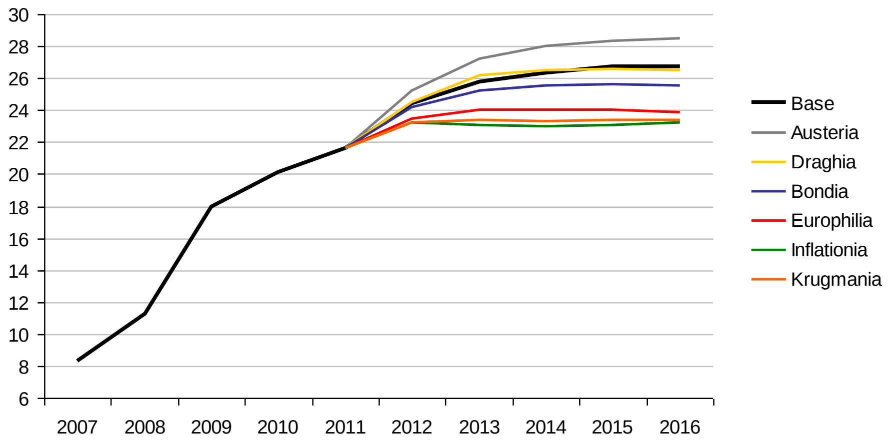


Inflation (%)

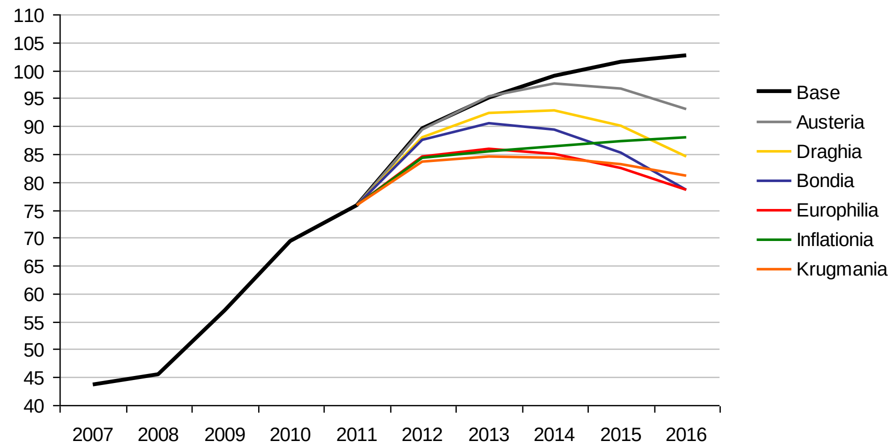


Spain: unemployment, current a/c and debt

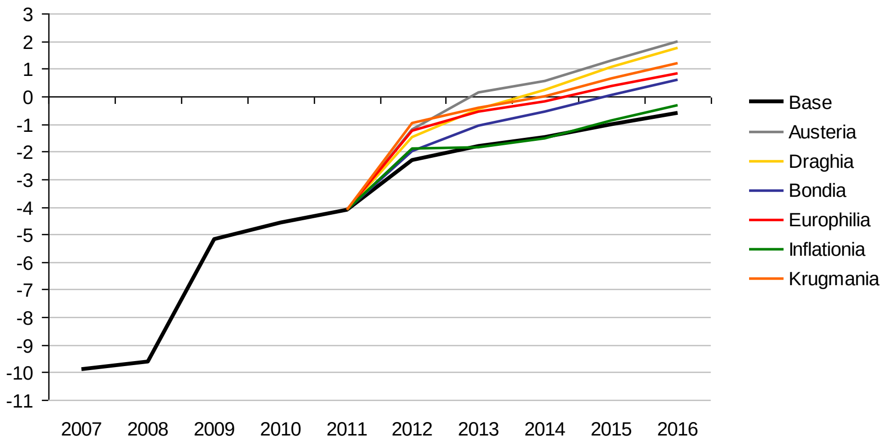
Unemployment (%)



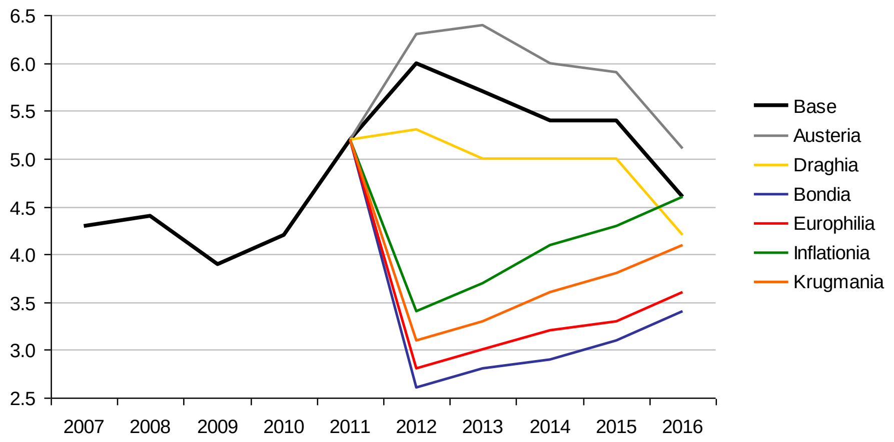
Debt-to-GDP ratio (%)



Current account (% of GDP)



10yr government yield (%)



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Greece – still a (debt) mountain to climb

Base (muddle through)	2012	2013	2014	2015	2016
GDP, % yoy	-5.1	-0.8	1.2	1.5	1.7
Unemployment, %	23.0	24.0	24.1	24.1	24.0
CPI, % yoy	0.9	0.1	0.3	0.7	1.0
Current account (% of GDP)	-7.2	-5.8	-5.0	-4.6	-4.2
Debt/GDP	179.1	185.0	185.6	184.7	182.3
Yields (gov 10yr)	4.0	4.0	4.0	4.0	4.0

- More reflationary scenarios add as much as 3% to growth, while inflation generally remains subdued.
- Public debt-to-GDP ratio stays above 155% even in the most favourable scenario
- Current account improves by as much as 5%, but remains in deficit

Austeria	2012	2013	2014	2015	2016
GDP, % yoy	-6.1	-2.4	0.6	1.1	1.5
Unemployment, %	23.8	25.2	25.7	25.9	26.0
CPI, % yoy	0.6	-0.8	-0.4	0.1	0.5
Current account (% of GDP)	-6.1	-3.9	-2.9	-2.3	-1.6
Debt/GDP	180.5	189.1	189.0	185.4	178.5
Yields (gov 10yr)	4.0	4.0	4.0	4.0	4.0

Europhilia	2012	2013	2014	2015	2016
GDP, % yoy	-1.8	0.0	1.9	2.0	2.1
Unemployment, %	22.0	22.6	22.5	22.3	22.1
CPI, % yoy	0.9	-0.2	0.3	0.6	1.1
Current account (% of GDP)	-6.1	-4.5	-3.7	-3.2	-2.8
Debt/GDP	170.6	172.4	168.5	163.4	156.6
Yields (gov 10yr)	4.0	4.0	4.0	4.0	4.0

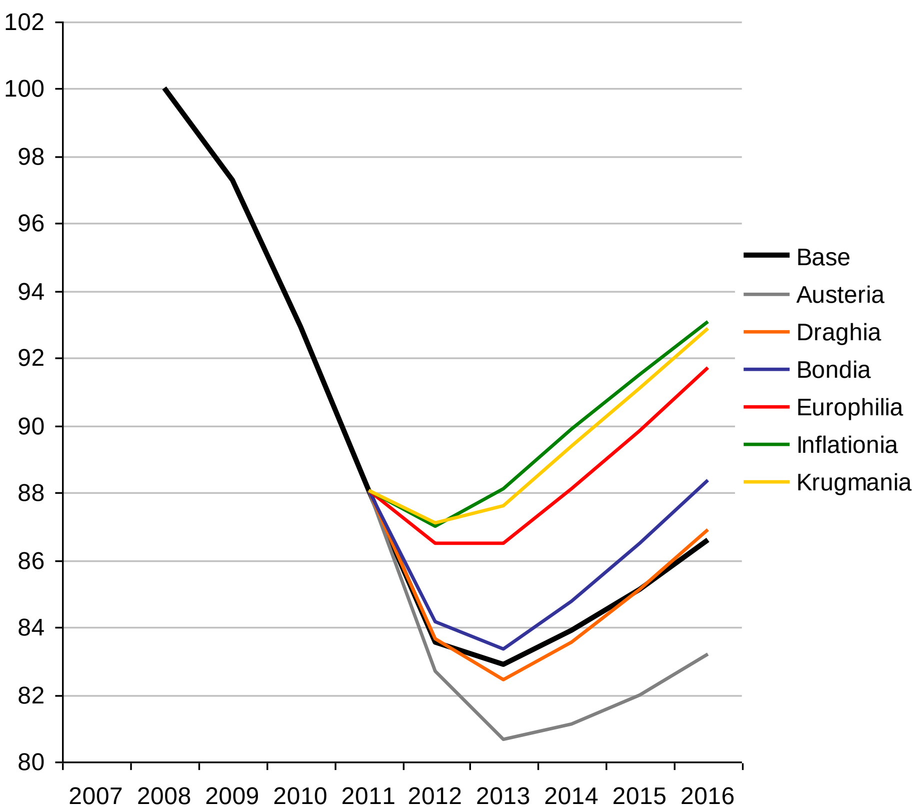
Draghia	2012	2013	2014	2015	2016
GDP, % yoy	-5.0	-1.5	1.4	1.9	2.1
Unemployment, %	23.0	24.2	24.2	24.1	23.8
CPI, % yoy	1.4	-0.1	0.5	1.3	1.8
Current account (% of GDP)	-6.4	-4.5	-3.3	-2.6	-1.9
Debt/GDP	177.1	182.8	179.8	173.4	163.8
Yields (gov 10yr)	4.0	4.0	4.0	4.0	4.0

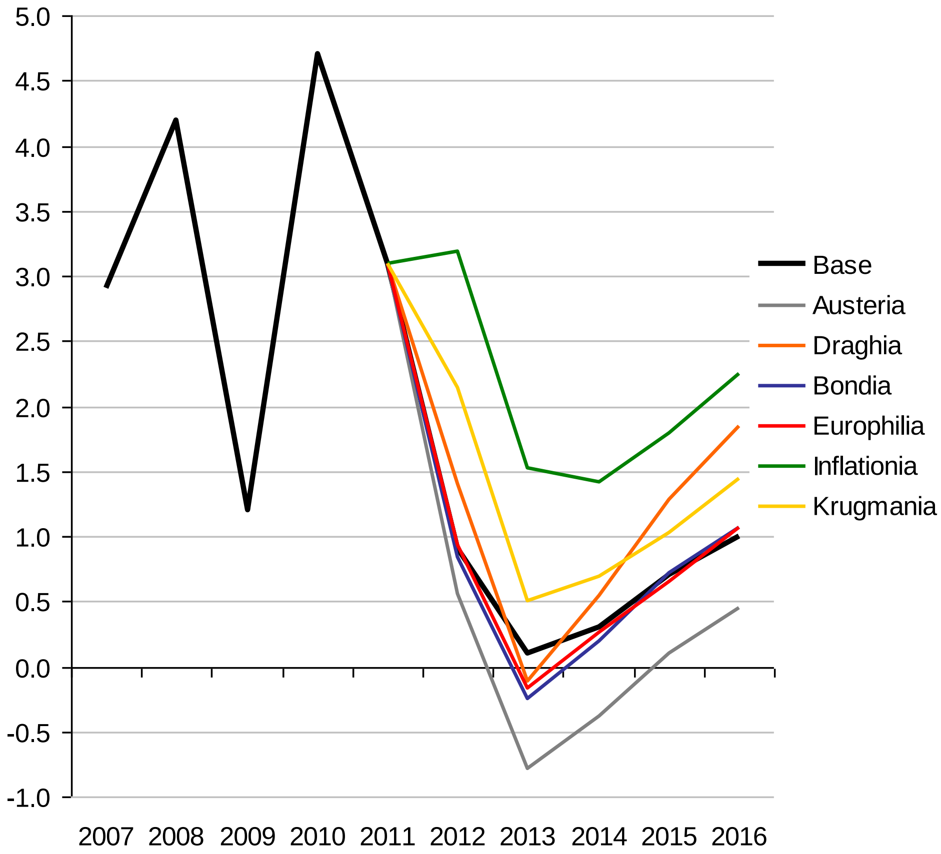
Inflationia	2012	2013	2014	2015	2016
GDP, % yoy	-1.2	1.3	2.0	1.8	1.7
Unemployment, %	21.7	21.9	21.6	21.5	21.3
CPI, % yoy	3.2	1.5	1.4	1.8	2.2
Current account (% of GDP)	-6.8	-5.9	-5.0	-4.5	-3.9
Debt/GDP	167.8	166.7	163.6	160.9	158.1
Yields (gov 10yr)	4.0	4.0	4.0	4.0	4.0

Bondia	2012	2013	2014	2015	2016
GDP, % yoy	-4.4	-1.0	1.7	2.1	2.1
Unemployment, %	22.8	23.9	23.9	23.8	23.6
CPI, % yoy	0.8	-0.3	0.2	0.7	1.1
Current account (% of GDP)	-6.9	-5.1	-4.1	-3.5	-3.0
Debt/GDP	176.7	181.1	177.4	170.7	161.5
Yields (gov 10yr)	4.0	4.0	4.0	4.0	4.0

Krugmania	2012	2013	2014	2015	2016
GDP, % yoy	-1.1	0.6	2.0	1.9	2.0
Unemployment, %	21.7	22.0	21.8	21.6	21.4
CPI, % yoy	2.1	0.5	0.7	1.0	1.4
Current account (% of GDP)	-5.9	-4.4	-3.5	-3.0	-2.4
Debt/GDP	167.9	168.1	164.3	160.1	155.0
Yields (gov 10yr)	6.0	5.5	5.0	5.0	5.0

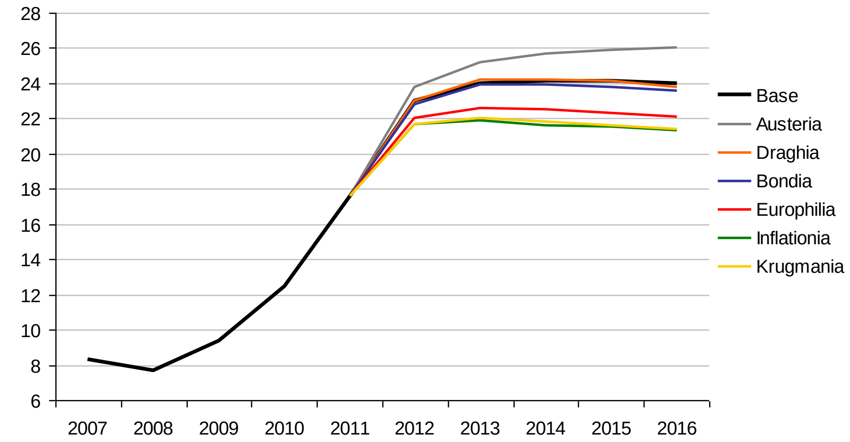
Greece: GDP and inflation



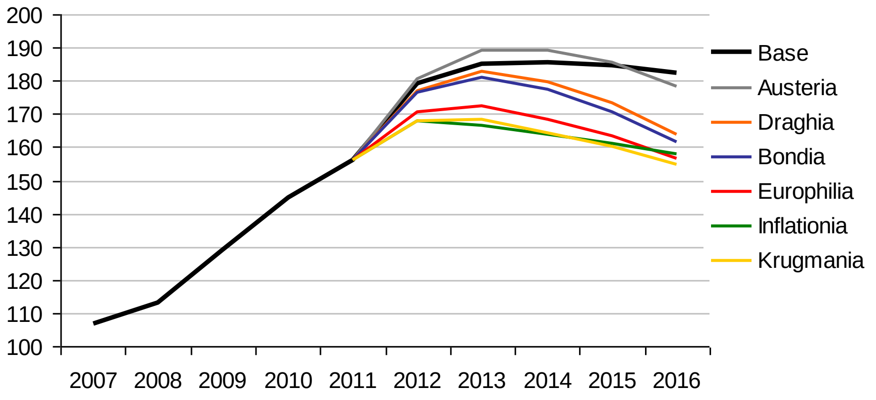


Greece: unemployment, current a/c and debt

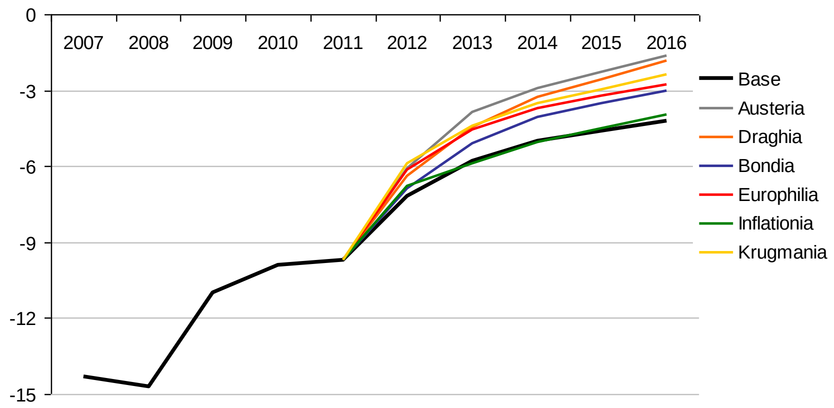
Unemployment (%)



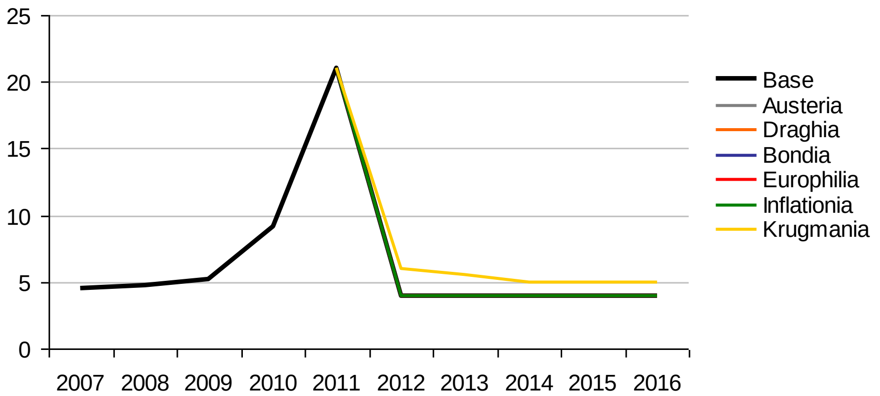
Debt-to-GDP ratio (%)



Current account (% of GDP)



10yr government yield (%)



Annex B
Methodology

EMU Survival: possible policy measures

We classified the policy measures along three dimensions: reform, reflation and redistribution. We performed a range of simulations on the Oxford Economics global economic model and compared the results reported from other large scale macro models, as well as the academic literature on specific measures. A series of 'ready-reckoners' for each set of policy measures was then produced, which then combined in an iterative fashion to produce the scenario simulations.

The table below lists the measures we studied and includes their operationalisation (for more detail see our previous report).

Reform measures	
Measure	**Operationalisation**
• Product and labour market reform (periphery)	• 12% 2 year consecutive wage cut
• Financial market reform (e.g. common bonds, DGS)	• Credit conditions return to pre-crisis levels
• Public sector reform (e.g. welfare cutbacks)	• Productivity gains from year 3

Reflationary measures	
Measure	**Operationalisation**
• Monetary policy (QE; interest rate reduction)	• 5% Eurozone GDP QE; up to 100 bp 3m rate decrease
• Exchange rate policy (depreciation)	• up to 10% € depreciation [appreciation]
• Fiscal policy (e.g. tightening, stimulation)	• up to 1% fiscal tightening [loosening]

Redistribution measures	
Measure	**Operationalisation**
• Fiscal transfers from core to periphery	• 1% GDP transfer core -> periphery (1.7%)
• Funding (common bonds)	• Credit conditions to pre-crisis levels
• Default (i.e., 'forced' fiscal transfers)	• N.a.(*Austeria* ignores debt relief for periphery, penalty to core)

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