II. Special topics on the euro area economy

II.1. ECFIN's medium term projections: the risk of 'secular stagnation' ([43])

Between spring and autumn 2014 the European Commission revised down its growth forecasts for 2014 and 2015. Other policy institutions have also lowered their projections for growth in the euro area and other regions, and the IMF warns that 'secular' (i.e. long-term) stagnation remains a risk. This paper presents DG ECFIN's medium-term projections and analyses how structural unemployment, productivity trends and investment have contributed to persistence of slow growth since the 'great recession'. The projections show that the decline in employment and productivity growth is not just a cyclical phenomenon. It is related to a slowdown in the growth rate of the working-age population, an increase in the non-accelerating wage rate of unemployment (NAWRU) and reduced trend total factor productivity (TFP) growth. However, the largest factor weighing on potential growth is low rates of capital formation. Apart from the slowdown in potential growth, deleveraging pressures are also exerting a negative effect on investment rates. Using the QUEST model, we cannot confirm that deleveraging will reduce growth permanently, as sometimes argued in the literature. An important reason for the protracted slowdown in euro area growth was the double-dip nature of the recession, which saw the financial crisis followed by the sovereign debt crisis. The second recession, in particular, highlighted the absence of supranational financial assistance mechanism in the euro area as well the need to address powerful fragmentation forces in financial markets. Since then, however, important steps have been taken, notably with the creation of the ESM and the establishment of a European banking union. The recently announced Investment Plan for Europe and a renewed commitment to structural reforms are also essential to counter risks of secular stagnation in the euro area.

Introduction

The European Commission cut its growth forecasts for the euro area (EA) for 2014 and 2015 by 0.4 percentage points (pps) and 0.6 pps.

([43]) Section prepared by Werner Roeger.

respectively between its spring and autumn 2014 forecasts. The IMF also revised down its global growth projection for 2014 by 0.3 pps., warning that 'Global growth could be weaker for longer, given the lack of robust momentum in advanced economies despite very low interest rates' (WEO, autumn 2014). The fact that investment has not picked up yet despite low interest rates could indeed signal a chronic demand shortage in the euro area. Secular stagnation therefore remains a risk. This section looks at the secular stagnation hypothesis from the perspective of DG ECFIN's potential growth estimates and medium-term projections until 2023. We first provide an assessment of recent growth trends, then discuss possible trend reversals. Finally we discuss the upside and downside risks associated with these projections, in light of the secular stagnation hypothesis.

Recent growth trends in the euro area

Actual GDP growth in the euro area has slowed considerably since the crisis, from an average annual rate of 2.1% over the 1999-2008 period to -0.4% between 2009–14. Projections show growth remaining subdued in the medium term, at an average of 1.4% p.a. from 2015 to 2024.

There has been a major cyclical slowdown — in fact a double-dip recession — but potential growth has also declined strongly, from an average of 2.0% in the same pre-crisis period to of 0.5% in the 2009-14 period.

Thus about three quarters of the growth slowdown is due to a decline in potential growth. Over the medium term it is projected that potential growth picks up again, to a rate of 1.0% over the period 2015–24. To make a rough estimate of the impact of the financial crisis on the projected output loss until 2014 and the outlook for 2023, we have to take into account a marked slowdown in the growth rate of the working-age population by 0.4% p.a. since 2009. This factor translates into a growth slowdown of about 0.3 pps. p.a. Thus a continued pre-crisis growth rate would have been 1.7% instead of 2.0%. As shown by Graph II.1.1, compared with this alternative path the medium-term projections generate a level of GDP which is about 9% lower in 2015. Recently, Ball

(2014), [44] using OECD projections, has estimated an average output loss of 8.4% in 2015 for a sample of 23 OECD countries.

Graph II.1.1: **Various potential and actual output paths for the euro area**
(1998-2024, Index 2008=100)
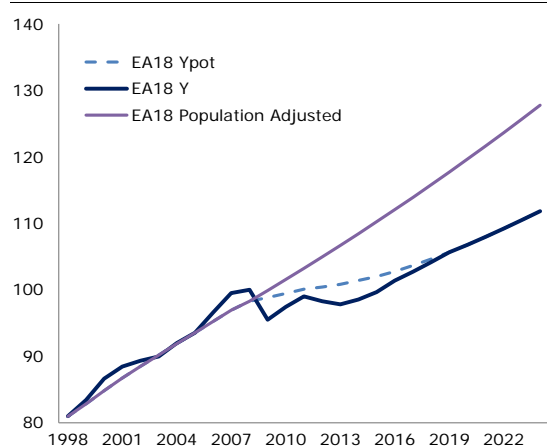
Analysing the growth slowdown

Growth has been weak since 2008, and even in 2014 euro area GDP has not reached its pre-crisis level. Such a long slump suggests that potential growth was reduced with the onset of the financial crisis. We can identify four reasons for a slowdown in potential growth: a decline in the growth rate of the working-age population, an increase in the NAWRU, a decline in trend TFP growth and a reduction in capital growth.

It appears that the decline in the total contribution of labour (trend hours) has lowered potential growth by 0.5 pps. since the onset of the crisis. Whereas in the 1999-2008 period the average contribution of labour to potential growth was 0.4 pps. p.a., for the 2009-14 period, labour had a negative contribution of potential growth of 0.1 pps. p.a. on average. However, only a growth reduction of 0.2 pps. can be attributed to an increase in the NAWRU. The drop in the growth rate of the working-age population (from 0.4% to 0.1%) has added another 0.3 pps. Since, according to these calculations, the NAWRU is now at its peak level, the impact of employment on growth

will stop being negative and become positive from 2017 onwards. [45]

For proponents of hysteresis effects — as revived by DeLong and Summers (2012), for example — this might be an optimistic scenario. On the other hand we also know from empirical analyses on NAWRU cyclicality (see Orlando, 2012) that unemployment in the euro area is subject to medium-term cycles, with hysteresis effects that do not last indefinitely. [46] In fact the NAWRU declined from 9.5% in the previous peak in the mid-1990s to 8.8% in 2007. A similar decline, as projected for the next 10 years, might nevertheless appear optimistic given that the last fall in the NAWRU occurred during a prolonged boom phase. However, labour market reforms enacted in various Member States after the crisis could be a trigger for a decline of the NAWRU this time.

Graph II.1.2: **Euro area NAWRU**
(1970-2024, %)
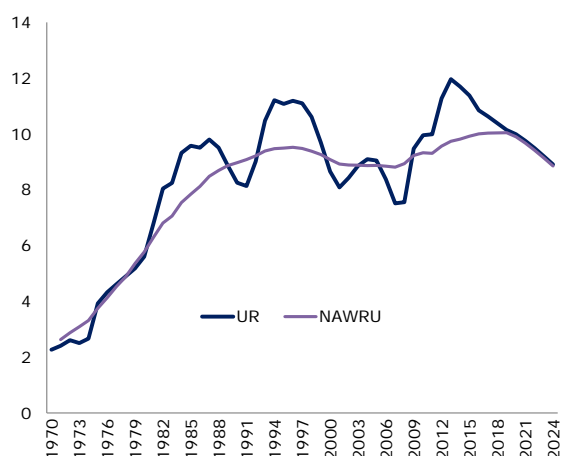
A worrying supply-side phenomenon is that actual TFP levels have so far not returned to their 2007 peak (see Graph II.1.3). For the 2009–14 period, we still estimate reduced but positive annual trend TFP growth of 0.4 pps. compared with the average of the pre-crisis decade. This relatively small adjustment in trend TFP growth relative to actual TFP growth is mostly explained by a strong decline

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[44] Ball, L. M. (2014):'Long-term damage from the great recession in OECD countries', *NBER Working Papers No 20185*.

[45] For a presentation of the NAWRU methodology see: F. Orlandi (2014): 'New estimates of Phillips curves and structural unemployment in the euro area', *Quarterly Report on the Euro Area*, Volume 13, Issue 1.

[46] DeLong, B. and L. Summers (2012): 'Fiscal policy in a depressed economy', *Brookings Papers on Economic Activity*, Spring 2012, pp. 233-299; Orlandi,F. (2012): 'Structural unemployment and its determinants in the EU countries', *European Economy — Economic Paper*s, 455.

EA18	Potential Growth (annual % change)		Contributions to Potential Growth*					Determinants of Labour Potential and Capital Accumulation			
Autumn 2014	Ypot per capita (PopWA 15-74)	PF Potential Growth	Total Labour (Hours) Contrib.	Labour (persons) Contrib.	Changes in Hours (per Empl) Contrib.	Capital Accumulation Contrib.	TFP Contrib.	Growth of Working Age Population (annual % change)	Trend Participation Rate (% of Working Age Population)	NAWRU (% of Labour Force)	Investment Ratio (% of Potential Output)
1999	2.0	2.3	0.4	(0.7)	(-0.3)	0.9	1.0	0.3	62.5	9.4	22.2
2000	2.0	2.4	0.5	(0.8)	(-0.3)	0.9	1.0	0.3	63.0	9.2	22.7
2001	1.9	2.3	0.5	(0.8)	(-0.3)	0.8	1.0	0.4	63.4	9.1	22.5
2002	1.5	2.0	0.4	(0.7)	(-0.3)	0.7	0.9	0.5	63.8	9.0	21.8
2003	1.4	1.9	0.5	(0.7)	(-0.3)	0.7	0.8	0.5	64.1	9.0	21.7
2004	1.4	1.9	0.5	(0.7)	(-0.2)	0.7	0.7	0.5	64.4	9.0	21.9
2005	1.3	1.8	0.4	(0.6)	(-0.2)	0.7	0.6	0.5	64.7	9.0	22.0
2006	1.4	1.8	0.4	(0.6)	(-0.2)	0.8	0.6	0.4	65.0	8.9	22.8
2007	1.3	1.8	0.4	(0.6)	(-0.2)	0.8	0.5	0.4	65.3	8.9	23.5
2008	1.0	1.4	0.2	(0.4)	(-0.2)	0.8	0.5	0.4	65.5	9.0	23.1
2009	0.4	0.6	-0.2	(0.0)	(-0.2)	0.4	0.4	0.1	65.7	9.3	20.4
2010	0.6	0.6	-0.1	(0.1)	(-0.2)	0.4	0.4	0.0	65.9	9.4	20.2
2011	0.6	0.7	-0.1	(0.1)	(-0.2)	0.4	0.4	0.0	66.0	9.4	20.4
2012	0.3	0.3	-0.3	(-0.1)	(-0.2)	0.2	0.4	0.0	66.1	9.6	19.6
2013	0.2	0.4	-0.1	(0.0)	(-0.2)	0.2	0.3	0.2	66.2	9.8	19.1
2014	0.4	0.6	0.1	(0.2)	(-0.1)	0.2	0.3	0.2	66.3	9.9	19.1
2015	0.5	0.6	0.0	(0.1)	(-0.1)	0.2	0.4	0.0	66.4	10.0	19.3
2016	0.7	0.7	0.0	(0.1)	(-0.0)	0.3	0.4	0.0	66.5	10.0	19.9
2017	0.8	0.9	0.1	(0.1)	(-0.1)	0.3	0.5	0.1	66.6	10.1	20.4
2018	0.9	0.9	0.1	(0.2)	(-0.1)	0.4	0.5	0.1	66.7	10.1	20.7
2019	0.9	1.0	0.1	(0.2)	(-0.1)	0.4	0.5	0.0	66.9	10.1	20.9
2020	1.0	1.0	0.2	(0.2)	(-0.0)	0.4	0.5	0.1	66.9	9.9	21.0
2021	1.1	1.1	0.2	(0.2)	(0.0)	0.4	0.5	0.0	66.9	9.7	21.1
2022	1.2	1.2	0.2	(0.2)	(0.0)	0.4	0.5	-0.1	66.9	9.5	21.1
2023	1.3	1.2	0.2	(0.2)	(0.0)	0.4	0.5	-0.1	67.0	9.2	21.2
2024	1.3	1.2	0.2	(0.2)	(0.0)	0.4	0.6	-0.1	67.0	8.9	21.2
Periods											
1999-2008	1.5	2.0	0.4	0.7	-0.2	0.8	0.8	0.4	64.2	9.0	22.4
2009-2014	0.4	0.5	-0.1	0.1	-0.2	0.3	0.4	0.1	66.0	9.6	19.8
2015-2024	1.0	1.0	0.1	0.2	0.0	0.4	0.5	0.0	66.8	9.7	20.7

Table II.1.1: **Potential and per capita growth, euro area**

Source: DG ECFIN

in capacity utilisation rates. As can be seen from Table II.1.1, in our medium-term projection the secular decline of the TFP trend does not continue, but a modest increase in TFP trend growth from 0.3% in 2014 to 0.5% is projected for the 2015-24 period. This trend reversal must be seen as uncertain and possibly optimistic, however. Even in the United States there is debate about a secular decline in technology; Gordon (2012) in particular argues that recent innovations which mostly emanate from the IT sector have weaker macroeconomic productivity effects than innovations of the industrial revolution, which were associated with an expansion of the manufacturing sector. (47) This argument is even stronger in the case of Europe, where most countries lack a sizeable IT sector and therefore an important driver of innovation. A second argument for a secular slowdown in TFP growth is declining growth rates of skill acquisition and evidence of skill mismatches in the labour force. A further reason why we may be too optimistic about trend TFP is that actual TFP growth has been persistently weak since the crisis. As capacity utilisation rates return to normal levels, we may have to revise the TFP trend downwards.

Graph II.1.3: **Actual TFP, trend TFP and capacity utilisation in the euro area (2000-2014)**
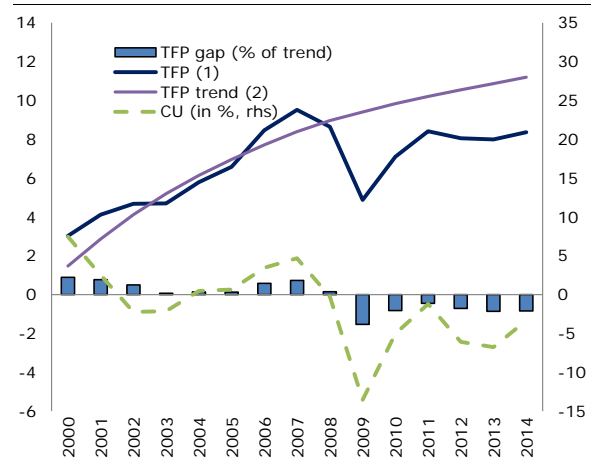
(1) Index of log (TFP) (base year 1997) =log TFP(1997)=0
(2) Index of log (TFP trend) (index is chosen such as to respect the % deviation between actual TFP and trend TFP)
Source: DG ECFIN

Low investment reduced potential growth by 0.5 pps. p.a. over the 2009–14 period on average when compared to the 1999-2008 period, and was the biggest driver of the growth slowdown. A number of factors contributed to the weakness of

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(47) Gordon, R. (2012): 'Is US economic growth over? Faltering innovation confronts the six headwinds'. *NBER Working Papers No 18315.*

investment. [48] Firstly, investment responds to both lower trend growth and lower demand (via the accelerator mechanism). Secondly, capital costs are likely to be too high, because the zero lower bound has prevented a further decline in policy rates and because there has been a divergence between lending rates and the policy rate in several Member States. The main reasons for this divergence are either an increased investment risk or a higher degree of risk aversion in financial markets. The divergence in borrowing rates between periphery and core countries suggests there is a correlation between risk premia and the leverage of the private and public sector. It therefore appears likely that more fundamental risk perceptions in financial markets are playing a role. Risk premia point, among other things, to deleveraging pressures from lenders, but also to higher bank capital costs and higher risks of debtor default in some Member States. High and risky private sector leverage has its counterpart in excess capital formation during the pre-crisis boom. This is illustrated by the pattern of gross fixed capital formation (relative to potential output) between peripheral countries (Ireland, Greece, Spain, Italy and Portugal) and core countries. As Graph II.1.4 shows, peripheral countries have been affected most by declining investment rates since 2008, while the fall in investment in the core countries has been moderate.

Graph II.1.4: Investment to potential output ratio
(1995-2024,%)
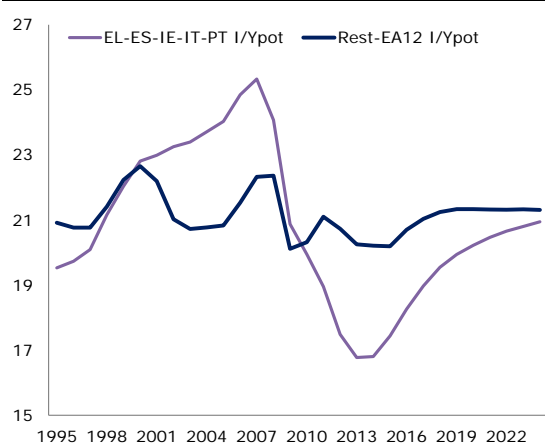
Source: DG ECFIN

DG ECFIN's projections show that the investment rate has now reached a trough at 19.1% and will increase to 19.9% at the end of the short-term forecast horizon in 2016. In the medium term, a further increase is expected. This projection is, however, conditional on a decline in NAWRU and a slight recovery in trend TFP growth, as discussed above. Furthermore, investment rates will remain significantly below their pre-crisis averages in the medium term.

How realistic is this medium-term growth scenario?

The medium-term projections provide a scenario in which the euro area economy would eventually move partially back towards its pre-crisis growth rate, corrected for capital growth, which appears to have been too high in the pre-crisis boom. This baseline scenario does not include any further growth impetus from structural reforms [49] but is largely based on three assumptions. First, currently high levels of unemployment would not lead to long-lasting hysteresis effects. Second, about 50% of the TFP growth decline since the crisis could be recovered in the medium term. And third, firms and households make use of investment opportunities offered by favourable reversals in supply side trends, but will not benefit from further reductions in capital cost. Under these conditions secular stagnation would be avoided and average growth rates over the next 10 years could be around 1.4% p.a. This baseline scenario also assumes that the output gap would be closed.

Looking at the supply-side factors, there are two downside risks. First, hysteresis effects could last longer than assumed in this projection. Apart from the standard arguments for hysteresis effects which are related to skills degradation among the long-term unemployed, an additional hysteresis risk appears: delayed wage adjustments in a low-inflation environment. However, looking at the evidence for negative growth rates in both nominal and real unit labour costs in euro area economies with high unemployment, this risk appears small. A stronger downside risk is

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[48] European Commission, 2014: 'Drivers and implications of the weakness of investment in the EU', *Autumn Forecast*, Box I.1.

[49] For an in-depth analysis of the potential impact of structural reforms see Varga, J. and J. in't Veld (2013), 'The growth impact of structural reforms', *Quarterly Report on the Euro Area*, Vol. 12, Issue 4, pp. 17-27. The analysis shows that if Member States could manage to close half of the gap with the three best performing euro area Member States, euro area GDP growth rates could be boosted by ½ pps. each year over a 10-year period.

associated with the assumed recovery of trend TFP growth to 0.6% at the end of the medium-term projection. This implies a reversal of a long-lasting downward TFP trend and can thus be seen as an optimistic assumption. If this trend reversal does not occur but TFP growth remains at 0.4% (or even declines further to 0.3% if the downward trend persists), this could shave 0.2–0.3 pps. p.a. off the average trend growth projection in the 2015-24 period.

Probably a more fundamental challenge to this projection comes from concerns about demand-side factors related to the debt overhang and deleveraging needs in some euro area countries. As pointed out by Rogoff (2014), [50] private-sector deleveraging has not brought down debt levels significantly as a share of GDP in recent years. Based on these observations, Rogoff speculates that demand pressures resulting from deleveraging will exert further downward pressure on growth. Eggertson et al. (2014) develop a model where deleveraging leads to a permanent increase in the savings rate. [51] In addition, a recent paper by Buttiglione et al. (2014) points to a potential vicious circle whereby debt overhang reduces growth which makes deleveraging more difficult and slows down demand and growth further. [52]

DG ECFIN regularly considers deleveraging pressures in its short-term forecasts. In various scenarios (see for example Cuerpo et al. (2013), Raciborski (2014)) the vicious circle hypothesis has been analysed with the European Commission's QUEST model. In the baseline scenario, deleveraging in the household and (non-financial) corporate sectors is considered. Deleveraging in the household sector is captured by a combination of:

- a drop in credit availability due to a reduction in the loan-to-value (LTV) ratio required by banks, and

- a fall in house prices simulated as a shock to housing demand through an increase in the risk premium on housing investment.

The combined effect of the shocks is calibrated to reduce the household debt-to-GDP ratio by about 30 pps. after 10 years and decrease house prices by around 24%, which is similar to the assumptions made in Cuerpo et al. (2013). [53] The deleveraging in the corporate sector is captured by a negative LTV shock leading to a drop in the corporate debt-to-GDP ratio of about 16 pps. after 10 years. The size of this shock roughly corresponds to the difference between the actual level of the corporate debt-to-GDP ratio in 2011 in Spain and the sustainable level of the ratio, calculated according to the methodology elaborated upon in Cuerpo et al. (2013). [54]

The basic prediction made by these deleveraging scenarios is that the deleveraging process indeed leads to a prolonged slowdown in growth for three to four years — driven by a strong reduction in residential and corporate investment — but this process stabilises and the slowdown is not permanent. During this period private sector debt remains high and falls only slowly because of denominator effects (see Graph II.1.1). An important reason for debt remaining high initially is the fall in inflation, which raises the real interest rate. This leads to a decline in private consumption and investment demand and aggravates the negative demand effect. In that sense there is an element of a vicious circle. However, since price and wage adjustment slows down as the economy becomes more competitive, the real interest rate declines and domestic demand stabilises and the deleveraging process gains momentum. Thus, in contrast to Buttiglione et al., this analysis suggests that a vicious circle will be only temporary and both competitiveness and interest rate effects will stabilise the economy in the medium term. The adjustment path generated by these deleveraging scenarios is qualitatively similar to that observed

[50] S. Lo and K. Rogoff (2014): *Secular Stagnation, debt overhang and other rationales for sluggish growth, Six Years On,* 13th Annual BIS Conference, 27 June 2014, Lucerne, Switzerland.

[51] Gauti B. Eggertsson, G. B. and N. R. Mehrotra (2014): 'A model of secular stagnation', *NBER Working Papers No 20574.*

[52] Luigi Buttiglione, Philip Lane, Lucrezia Reichlin and Vincent Reinhart (2014): *Deleveraging, what Deleveraging?*, 16th Geneva Conference on Managing the World Economy, May 9, ICMB, CIMB and CEPR, Geneva.

[53] It is worth putting the size of these shocks into context. Cuerpo et al. (2013) calculate that the Spanish household debt-to-GDP ratio rose from around 40% in 2000 to above 85% in 2008, with its value in 2011 only slightly below this number. According to the OECD (see http://s-ecfin-web/directorates/db/u1/data/housing/hp.html), real house prices increased by about 65% between 2000Q1 and their peak in 2007Q3. They have since fallen by about 45%. Between 2011Q1 and 2013Q2 they fell by about 26%.

[54] The exact value of this gap has been kindly calculated by Carlos Cuerpo Caballero, unit ECFIN.B1 and is equal to 12.4 pps.
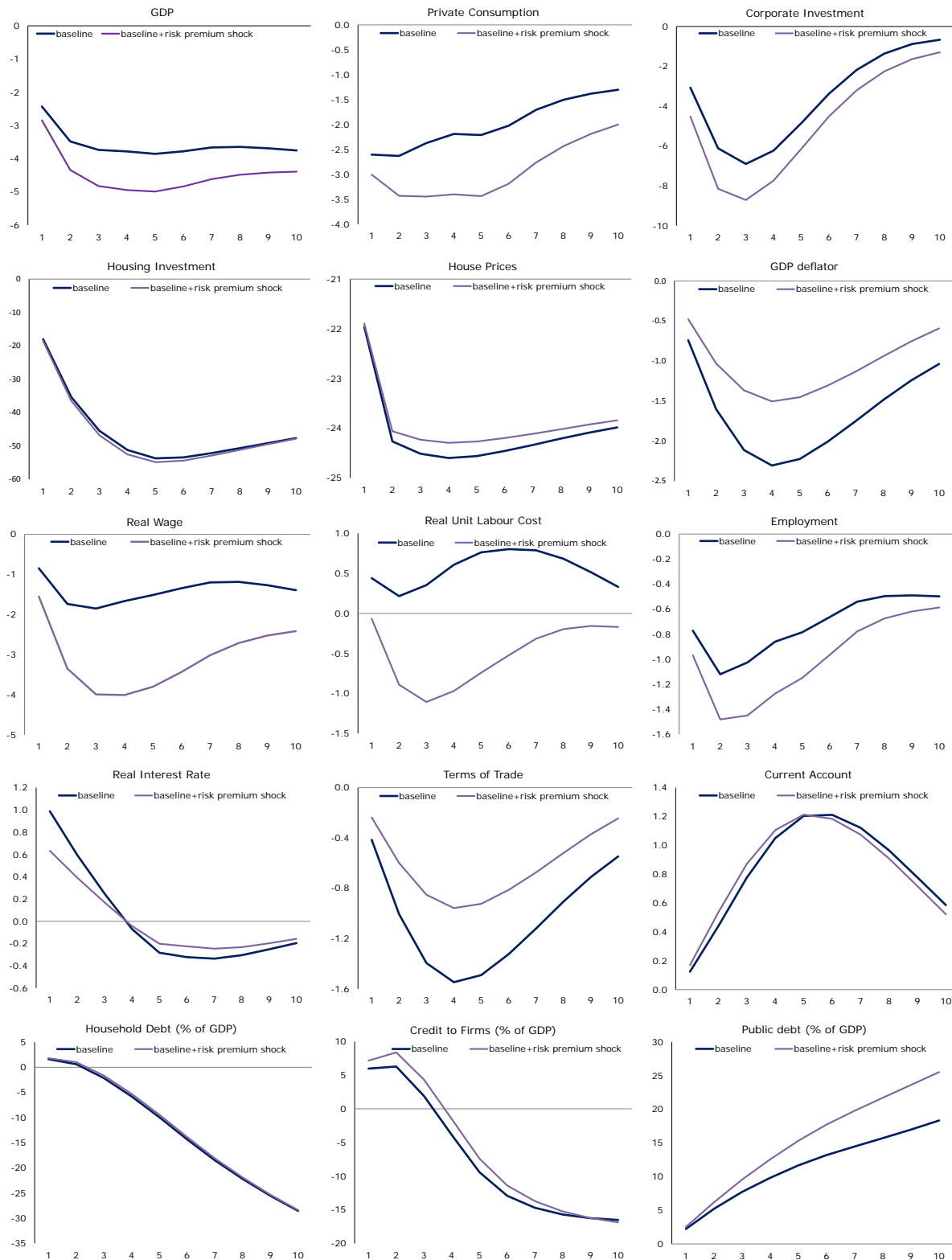
(1) The figures show % deviation from baseline levels.
Source: DG ECFIN.

However, one important reason why the adjustment in the euro area has been more protracted is missing in this analysis. In the euro area the financial crisis was followed by a sovereign debt crisis, thus highlighting shortcomings in the financial architecture of the economic and monetary union. As a vicious circle between rising government debt and bank vulnerabilities developed in the euro area periphery — leading to a second recession in 2012 — the need to provide temporary financial assistance to some sovereigns and to counter financial fragmentation forces became obvious. As a response, the European Stability Mechanism was created and the European banking union was launched. ([55])

Conclusion

There are two dimensions to the classical secular stagnation hypothesis in advanced economies: low supply growth (population growth, rates of technical progress) and/or low demand (expected ageing, rising income inequalities). Both factors can contribute to a slowdown in investment and consumption and may require low real interest rates in order to generate sufficient demand.

This section has argued that the euro area is mostly facing a secular decline in productivity growth and ageing, which started before the great recession and continues today. The negative effect of these forces has been aggravated by downside demand

pressures due to the correction of macroeconomic imbalances accumulated the years before the crisis.

The pre-crisis boom can best be characterised by increased household and corporate demand which was fuelled by rising debt levels. This was associated with investment rates (particularly residential investment) which were too high and based on unsustainable income/productivity growth expectations. By contrast, consumption rates remained more in line with historical patterns. This section has argued that deleveraging pressures (mainly in the periphery) are likely to provide a good explanation for the persistence of the adjustment in the euro area, which has registered negative output gaps since 2009. Nevertheless, the length of this process as compared with the adjustment in countries outside the euro area shows that the euro area was suffering from problems with its financial architecture. This essentially led to a second recession in 2012. However, in response to the sovereign debt and banking problems important measures were taken, with the creation of the ESM, to provide supranational financial assistance. The European banking union is a further step towards improving cross-border adjustment and a more efficient allocation of risks across the euro area. The recently announced Investment Plan for Europe and a renewed commitment to structural reforms are also essential to counter risks of secular stagnation in the euro area.

([55]) F. Breuss, W. Roeger and J. in'tVeld (2014). 'The stabilising properties of a European Banking Union in case of financial shocks in the Euro Area', *DG ECFIN Economic Papers* (forthcoming) show how the Single Resolution Mechanism, the Single Deposit Guarantee Mechanism and, over a transition period, the ESM help to stabilise countries affected by adverse financial shocks.