

Introduction

The economic recovery in Europe has so far failed to gather much momentum and has been weaker than previous recoveries. Inflation continues to remain very low, driven mainly by low oil prices, despite the ECB's accommodative policy. Despite high public indebtedness, long-term interest rates remain rather low which suggests that markets may well anticipate a low inflation, low interest rate environment to remain in place for some time. All this has led several policy institutions to warn that Europe could be vulnerable to stagnation if it were to suffer further adverse shocks in the coming years.

This box presents model simulations to assess the effects of the prevalent adverse demand and supply forces that have been blamed for stunting growth and inflation since the crisis (2009-2014).

The secular stagnation debate

Since the popularisation of the term by Summers in his 2013 speech at the IMF Economic Forum ⁽¹⁾, a single definition of 'secular stagnation' has yet to be agreed. Most however, would agree it corresponds to a protracted period of low growth, low inflation and low interest rates. The standard secular stagnation hypothesis in advanced economies consists of adverse developments along two dimensions: a shortage of demand and/or supply.

The demand-side thesis ⁽²⁾ argues that the combination of chronic excess savings and reduced investment tends to push the equilibrium real interest rate into negative territory, leading to lacklustre demand and subdued growth. Summers (2015) ⁽³⁾ places this argument in the low inflation environment that both the US and the euro area are currently experiencing; with nominal interest rates constrained at the zero-lower bound, real interest rates cannot fall further to increase investment to a level that is compatible with full employment. According to Summers the 'savings glut' has been brought about due to an expected ageing of the

population, combined with risk aversion, readily available cheap capital and rising income inequality. ⁽⁴⁾ These elements, in particular the expected deterioration of demographics, are of particular relevance for Europe. As seen in the European Commission's 2015 Ageing Report ⁽⁵⁾, both the working-age population and the number of employed persons has been falling at a faster rate since the 2008 crisis. Although migration flows and the participation rates of female and older workers are expected to increase, these will be offset by the ageing of the European population, which is expected to accelerate rapidly from 2025 onwards.

The supply-side arguments put forward to explain secular stagnation emphasise the significance of reduced potential growth. Potential growth in the euro area has declined substantially from an average of 2% in the pre-crisis period to approximately 0.5% between 2009 and 2014 ⁽⁶⁾. Gordon (2015) ⁽⁷⁾ suggests that lower potential growth is partly driven by a deceleration in the rate of technological progress over time, as well as four 'structural headwinds'. Two of these headwinds, the expected ageing of the population and the rise in income inequality, are also relevant for the demand-side interpretation of secular stagnation. The other two are a decline in average educational attainment levels and unsustainable public finances caused by high public debt levels.

DG ECFIN's output gap calculations for the euro area show that total factor productivity (TFP) growth since 2008 has been significantly lower than it was before the crisis. By 2025, the level of TFP is expected to be roughly 10% below its pre-2008 level. For the US, Gordon (2015) projects that the reduction in TFP growth will contribute to reducing the average 2% US per capita growth rate of the 1891-2007 period by 0.6 pps. in the future. Additionally, the four headwinds together are

⁽⁴⁾ See, also Pichelmann, K. (2015). 'When 'secular stagnation' meets Piketty's capitalism in the 21st century. Growth and inequality trends in Europe reconsidered.' European Commission (DG ECFIN), *European Economy Economic Papers* 551.

⁽⁵⁾ European Commission (DG ECFIN) (2015). *The 2015 ageing report: Economic and budgetary projections for the 28 EU Member States (2013 – 2060)*. European Economy 3/2015.

⁽⁶⁾ See Roeger, W. (2013). 'ECFIN's medium term projections: the risk of 'secular stagnation'.' *Quarterly Report on the Euro Area* (European Commission –DG ECFIN) 13 (4), pp. 23-29.

⁽⁷⁾ Gordon, R. (2015). 'Secular stagnation: a supply-side view.' *American Economic Review: Papers and Proceedings* 105 (5), pp. 54-59.

⁽¹⁾ Summers, L.H. (2013). 'Secular stagnation.' Speech at the 14th Annual IMF Research Conference. Washington DC, November 14.

⁽²⁾ Hansen, A. (1939). 'Economic Progress and Declining Population Growth.' *American Economic Review* 29 (1), pp. 1–15.

⁽³⁾ Summers, L.H. (2015). 'Demand side secular stagnation.' *American Economic Review: Papers and Proceedings* 105 (5), pp. 60-65.

projected to deduct another 1.2 pps. from the US per capita growth rate over time.

The third line in the debate with regards to the causes of secular stagnation relates to the ‘debt supercycle’ hypothesis. Rogoff (2015)⁽⁸⁾ argues that despite the effective real interest rate profile in the economy being high because of both demand (post-crisis higher inherent riskiness) and supply (financial regulation) forces, it has incentivised low-risk borrowers, such as pension funds, banks and insurance companies, and governments to hold disproportionately more safe assets. This has generated strong deleveraging pressures and has resulted in weak growth in the US, UK and Europe.

A model-based assessment using QUEST

Using the Commission’s QUEST model, this section presents results of simulations to investigate the impact of the prevalent adverse demand and supply forces in pushing the euro area economy towards a period of low growth and low inflation since the crisis (2009-14), and subsequently leading it towards a phase of recovery in the medium-term.

The model used is a two-region dynamic general equilibrium model for the euro area economy and the rest of the world.⁽⁹⁾ The simulations begin in 2009, at the start of the financial crisis and the model is calibrated to closely reflect the current economic environment, which is characterised by constraints on monetary policy.

The developments assessed, which cause a shortage of demand and supply and are able to generate an environment of protracted low growth are the following: private sector deleveraging, which reduces private debt by 10 pps. of GDP over a 10-year period⁽¹⁰⁾; fiscal deleveraging, which comes in the form of reductions in government consumption and investment; a temporary slowdown in the growth rate of TFP of around 10%

⁽⁸⁾ Rogoff, K. (2015). ‘Debt supercycle, not secular stagnation.’ *VOX CEPR Policy Portal*, April 22.

⁽⁹⁾ For a description of the model and its calibration see: Priftis, R., W. Roeger, and J. In’t Veld (2015). ‘The slow recovery in the Euro Area.’ DG ECFIN, mimeo.

⁽¹⁰⁾ The reduction of household debt (as a % of GDP) following a deleveraging episode is consistent with the calculations in: Cuerpo, C., I. Drumond, J. Lendvai, P. Pontuch, and R. Raciborski (2013). ‘Indebtedness, deleveraging dynamics and macroeconomic adjustment.’ *European Economy Economic Papers* 477.

over 15 years (which is consistent with DG ECFIN’s output gap calculations and gradually recovers in the medium-term); temporary increases in corporate and housing investment risk consistent with the patterns observed during the 2008 financial and 2012 sovereign debt crises; and demographic projections, including a 67% rise in the dependency ratio by 2060.⁽¹¹⁾

Graph 1 shows the results of the model simulations.⁽¹²⁾ Each subplot presents the aggregate effect of all shocks combined on GDP, inflation, and investment (as a % of GDP) and contrasts their responses to actual data available.⁽¹³⁾ As can be seen, the persistent adverse supply and demand shocks can largely explain the decline of the inflation rate, investment and GDP in the period 2009-2014. However, as these shocks gradually fade away, the model predicts that GDP will gain some strength and inflation will accelerate, consistent with the short-term forecast.

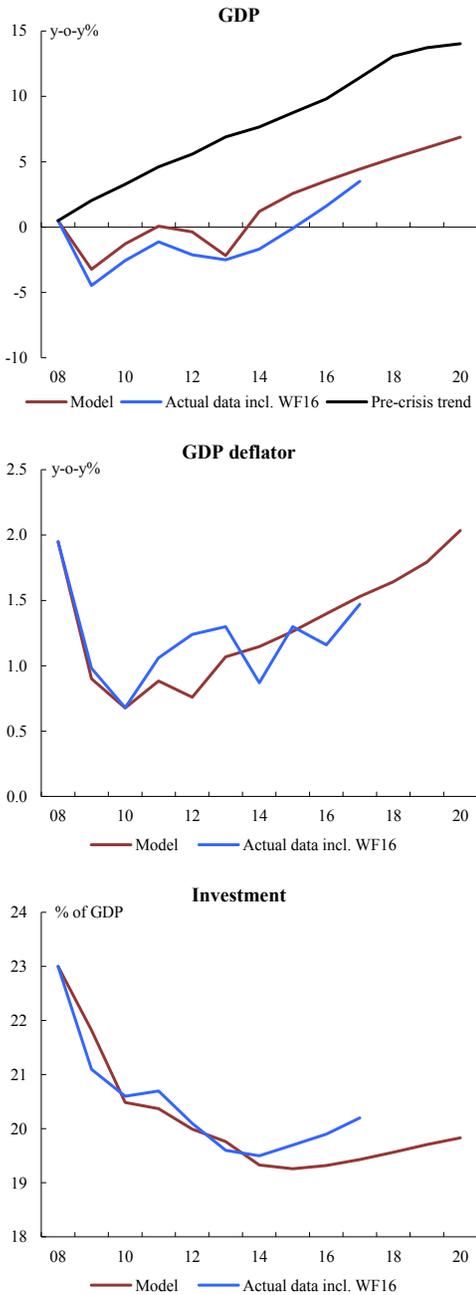
In the short-run, the model mainly produces demand-side effects that lead to a decline in GDP and inflation through a reduction in expected per-capita income. The expected fall in future per-capita income leads to a front-loaded increase in household savings, and a fall in consumption and the real interest rate. Overall, this implies that GDP will decline in the short run. However, as these adverse developments fade away in the medium-term, GDP gains strength and inflation accelerates. While the growth rate of GDP is seen to recover to pre-crisis rates, at the same time, the downward level shift of TFP, as well as the risk premium increase, restrain GDP and investment levels from fully recovering to their pre-crisis trends.

⁽¹¹⁾ For a complementary analysis of the effects of ageing on GDP growth, inflation and interest rates see: Priftis, R. (2016). ‘The effects of a slowdown in total-factor productivity growth and ageing on inflation and interest rates.’ *Quarterly Report on the Euro Area* (European Commission –DG ECFIN) 15 (1), pp. 19-24.

⁽¹²⁾ Results for GDP and the GDP deflator are deviations from a no-shock baseline, in %. Results for investment are deviations from the baseline in percentage points.

⁽¹³⁾ For years 2016 and 2017 the values reported are obtained from the European Commission’s 2016 Winter Forecast. For investment, the forecast is consistent with DG ECFIN’s medium-term projections, which predicts that investment will progress to approximately 21% by 2020. The pre-crisis trend illustrated in the subplot for GDP is adjusted for the slowdown of the total population.

Graph 1: Aggregate effect of all shocks combined on GDP, inflation, and investment



One notable result is that the model is able to capture the stylised fact observed in the data that the downturn in Europe was largely driven by a reduction in investment rather than consumption. The weak recovery of investment lends support to a

‘financial frictions’ interpretation of the ‘long slump’, suggesting that increases in spreads can be attributed to the sizeable risk premia on investment. It is also in conflict with the classical secular stagnation hypothesis, which describes a downturn due to a fall in consumption driven by ageing, deleveraging, and increasing inequality.

It is important to note that in the simulation exercise both the decline in TFP growth and the rise of investment risk are not permanent developments. Both phenomena are seen as persistent but, nevertheless transitory features of the financial and sovereign debt crisis. In particular, improving lending conditions in Europe expected to facilitate investment in productivity-enhancing innovations and leads to a turnaround of TFP growth. These assumptions on the recovery of TFP growth in the medium-term are key in limiting the economic downturn observed in 2009-2014, and hence assist the economy into entering a phase of higher, though still subdued, GDP growth following 2014. However, with the recovery still weak, any additional adverse developments could be enough to tip the economy into a more prolonged period of slow growth.⁽¹⁴⁾

The analysis presented has interesting policy implications. To counter the risks of stagnation, a number of demand- and supply-side policies would be needed to address each adverse development. In particular, a number of supply-side reforms, such as facilitating sectoral adjustments, better qualifications, education and training would be warranted to address the productivity growth slowdown. Regarding the still on-going deleveraging process in Europe, which puts downward pressure on demand, measures such as the recently-launched Investment Plan for Europe will also be crucial to counter the risk of weak investment. In addition, the current period of low interest rates favours public investment for countries with fiscal space. Additional supply-side measures to combat financial frictions in the banking sector and further support investment, apart from the creation of the ESM, would be a movement towards a European banking union that improves cross-country integration and risk sharing. Finally, the effects of demographic ageing could be offset by an increase in the retirement age.

⁽¹⁴⁾ See also, Lin, H. (2016). ‘Risks of stagnation in the euro area.’ *IMF Working Paper* WP/16/9.