

Luis de Guindos: Investment, technological transformation and skills

Speech by Mr Luis de Guindos, Vice-President of the European Central Bank, at the joint EIB-ECB conference on investment, technological transformation and skills, Luxembourg, 28 November 2018.

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Introduction

It is an honour to open this joint conference on “Investment, technological transformation and skills” together with EIB President Werner Hoyer.

The euro area economy is continuing to grow. We have now seen almost six consecutive years of expansion, with growth that is broad-based across countries and sectors. During this recovery, the countries that were most affected by the crisis have regained competitiveness thanks to a combination of accommodative monetary policy, fiscal consolidation and structural reforms.

But challenges remain in the form of low trend growth compared with other advanced economies, and persistently high public and private debt levels in a number of euro area countries. Further efforts are therefore needed to strengthen productivity growth and boost productive investments to lift long-term potential growth. In turn, this higher growth will help reduce debt burdens, create fiscal space and raise long-term equilibrium interest rates, bolstering monetary policy’s ability to support macroeconomic stabilisation.

In that context, the discussions taking place at this conference are both timely and relevant for policymakers. In the rest of my opening remarks, I want to highlight the potential productivity benefits – and also the challenges – arising from digitalisation. I will also briefly comment on a few areas where policy changes are needed to promote the greater diffusion of technology.

Digitalisation and its implications for productivity

The global economy is transforming fast, with an ever-increasing share of technological and digital content. The proportion of total investment accounted for by intangible assets, reported as intellectual property products in the national accounts, has almost doubled over the last two decades. And not all intangible assets are fully captured in national accounts and corporate balance sheets under current reporting standards.¹ Other measures, such as connectivity and digital public services, also show a steady rise.²

A recent ECB survey of large companies³ finds that digitalisation is viewed as something that increases productivity, thanks to knowledge-sharing and more efficient production processes. But the impact of digitalisation extends beyond productivity; it also affects potential output, competition, employment and economic welfare.⁴

Let me give some examples. Automation and the increasing use of robots and artificial intelligence are changing the relative prices of labour and capital, and the allocation of resources between them. The internet, social media, cloud computing and big data analysis are affecting competition by altering relative prices and market shares between, for example, small and large firms.

But the overall impact of digitalisation on productivity and potential growth does not depend solely on innovation and the creation of new technology. For new technology to truly achieve its full effect, it has to spread from its creator to other businesses in the economy.

Yet at present, firm-level productivity appears to be becoming more dispersed, as firms rich in intangible assets are scaling up investment much more than firms that are lagging behind. This divergence seems to be related to inefficiencies in the reallocation of resources from the least to the most productive firms within each sector, rather than inefficient allocation between sectors. Factors that drive such capital misallocation⁵ appear to be partly related to market rigidities, poor policy reactions and banks' reluctance to address their non-performing loans.

There are three main avenues for policymakers to harness the benefits of technological progress and drive an improvement in living standards. The first is to encourage education policies that mitigate the impact of technology on some workers. The second is to bolster competition to provide businesses with incentives to invest in technology. And the third is to ensure we have a financial sector that is capable of supporting innovation and growth.

Digitalisation and demand for skills

Introducing new technologies appears to reduce the demand for low and medium-skilled workers.⁶ At the same time, it creates new jobs which require highly skilled workers and provides opportunities for further.⁷ These changes already appear to be having repercussions for wage distribution and working conditions.

These challenges come at a time when labour's relative contribution to potential growth is diminishing in the context of an ageing population. All else being equal, unfavourable demographics increase the relative importance of capital deepening for underpinning potential growth.⁸

Education and infrastructure policies promoting entrepreneurship could smooth the transition and mitigate adverse effects on low-skilled workers. These include retraining and lifelong learning opportunities. We have witnessed a sharp increase in the participation rate of older workers during the past decade. Continuing this trend by providing opportunities for this part of the population to reskill and remain connected to the labour market would help mitigate the impact of ageing on growth.

Policies to support competitiveness

Policies to boost competitiveness and attract investment in Europe are an important step in promoting the diffusion of technology, and are rightly a recurrent theme of this conference.

Research has revealed a number of factors that can inhibit competitiveness and impede investment decisions.⁹ Beyond cyclical and financial factors, such as weak demand, uncertainty and excessive corporate debt levels,¹⁰ structural factors, such as weak economic institutions and rigid product and labour markets, can also play a negative role.

To encourage the effective diffusion of technology, structural and macro conditions favouring the market entry and expansion of productive firms, as well as the exit of persistently unproductive firms, need to be in place. To ensure a level playing field for firms in the area of new technology, policies are also needed to settle issues of ownership, tax treatment, property rights, competition and product regulation associated with intellectual assets. Reforming insolvency regimes would break the vicious circle of weak banks and zombie firms having an adverse impact on productivity.¹¹

Investment finance

That brings me to my last point. The widespread diffusion of technology requires financing that is conducive to innovation and growth. Monetary policy has played a key role since the financial crisis by helping to lower financing costs and increase access to finance. It will continue to

maintain favourable liquidity conditions and an ample degree of monetary accommodation.

But what matters most in the long term is deep and integrated financial markets. Equity funding, in particular, is becoming increasingly important, as confirmed by the positive impact of deeper stock markets on growth in high-tech and patent-intensive industries.¹² Investment in new technology and intangible assets seems to be more reliant on firms' internal funding.¹³ This appears to be related to the characteristics of intangible investment,¹⁴ such as the low market value and the sunk cost nature of production, making it harder to use as collateral for external funding. So completing the capital markets union is of paramount importance.

We also need more ambitious policies aimed at increasing the supply of private equity, and especially of early-stage venture capital.¹⁵ The development of fintech has the potential to expand access to credit and other financial services, in particular for small businesses.¹⁶

More broadly, to ensure an attractive investment environment in the euro area we should seek to complete the banking union, ensure adherence to fiscal rules and fully implement structural reforms.

Conclusion

Let me conclude.

Boosting productivity growth and ensuring the wide diffusion of technology is crucial to achieving a long-term increase in living standards in Europe. There are many facets to this challenge, as the broad and ambitious agenda for this conference shows. I look forward to the discussions.

¹ Human capital, knowledge in databases, organisational capital and brands are examples of assets not covered in the national accounts. See also European Central Bank (2018), "[Investment in intangible assets in the euro area](#)", *Economic Bulletin*, Issue 7, November; and European Commission (2017), "Unlocking investment in intangible assets in Europe", [Quarterly Report on the Euro Area](#), Vol. 16, No 1, pp. 23–35. However, in Ahmad, N., Ribarsky, J. and Reinsdorf, M. (2017), "Can potential mismeasurement of the digital economy explain the post-crisis slowdown in GDP and productivity growth?", *Statistics Working Papers*, OECD, the authors conclude that, while mismeasurement may occur, its magnitude cannot alone explain the slowdown in measured GDP growth or multi-factor productivity growth after the crisis.

² See the box entitled "[The role of digitalisation in shaping developments in potential output and the output gap in the euro area](#)", in European Central Bank (2018), "Potential output in the post-crisis period", *Economic Bulletin*, Issue 7, November.

³ See European Central Bank (2018), "[Digitalisation and its impact on the economy: insights from a survey of large companies](#)", *Economic Bulletin*, Issue 7, November.

⁴ See the box entitled "[The role of digitalisation in shaping developments in potential output and the output gap in the euro area](#)", in European Central Bank (2018), "Potential output in the post-crisis period", *Economic Bulletin*, Issue 7, November.

⁵ See Gamberoni, E., Giordano, C. and Lopez-Garcia, P. (2016), "[Capital and labour \(mis\)allocation in the euro-area: some stylized facts and possible determinants](#)", *Working Paper Series*, No 1981, ECB, November.

⁶ See International Monetary Fund (2018), "Capitalizing on Knowledge-Based Capital", *Euro Area Policies – Staff Report for the 2018 Article IV Consultation with Member Countries*, June, p. 18.

⁷ There is substantial uncertainty surrounding estimates of the net impact of new technologies on employment. For instance, the World Economic Forum article on "[Understanding the impact of digitalization on society](#)" states that "current estimates of global job losses due to digitalization range from 2 million to 2 billion by 2030". At the same time, it also states that "digitalisation could create up to 6 million jobs worldwide between 2016 and 2025 in the logistics and electricity industries".

⁸ Meanwhile, presumably higher depreciation rates – related to the rising share of intangible assets – require

higher rates of investment to maintain the capital stock.

- ⁹ See, for instance, Consolo, A, Langiulli, M and Sondermann, D. (2018), “Business investment in euro area countries: the role of institutions and debt overhang”, *Applied Economics Letters*, July.
- ¹⁰ See Barbiero, F., Popov, A and Wolski, M (2018), “Debt overhang and investment efficiency”, *Working Paper Series*, ECB, forthcoming; Kalemli-Ozcan, S., Laeven, L. and Moreno, D. N. (2018), “[Debt Overhang, Rollover Risk, and Corporate Investment: Evidence from the European Crisis](#)”, [NBER Working Paper 24555](#); Gebauer, Setzer, Westphal (2018), *Journal of International Money and Finance*.
- ¹¹ See Storz, M, Koetter, M, Setzer, R. and Westphal, A (2017), “[Do we want these two to tango? On zombie firms and stressed banks in Europe](#)”, *Working Paper Series*, No 2104, ECB EWP; [IWH Discussion Papers 13/2017](#) and Andrews and Petroulakis (2017), “Breaking the shackles: zombie firms, weak banks, insolvency frameworks and implications for productivity”, *OECD Working Papers*, No 1433, OECD, November.
- ¹² See Kremer, M and Popov, A (2018), “Financial development, financial structure, and growth: evidence from Europe” in ECB, *Financial Integration in Europe*, May, pp. 65–97.
- ¹³ See Falato, A, Kadyrzhanova, D. and Sim, J.W. (2013), “Rising Intangible Capital, Shrinking Debt Capacity, and the US Corporate Savings Glut”, *FEDS Working Paper Series*, No 2013–67, Federal Reserve System, September.
- ¹⁴ For more details, see Haskel, J. and Westlake, S. (2017), *Capitalism without Capital – The Rise of the Intangible Economy*, Princeton University Press. See also the appendix entitled “Characteristics of intangibles per asset type” in European Commission (2017), “[Investment in the EU Member States: An Analysis of Drivers and Barriers](#)”, *European Economy Institutional Papers*, No 062, October, p. 80.
- ¹⁵ See Popov, A and Roosenboom, P. (2012), “Venture capital and patented innovation: evidence from Europe,” *Economic Policy*, Vol. 27(71), July, pp. 447–482.
- ¹⁶ See “[The Opportunities and Challenges of Fintech](#)”, speech by Governor Lael Brainard, Federal Reserve Board of Governors, at the Conference on Financial Innovation at the Board of Governors of the Federal Reserve System, Washington, D.C., 2 December 2016; and “[The Promise of FinTech – Something New Under the Sun?](#)”, speech by Mark Carney, Governor of the Bank of England, at the Deutsche Bundesbank G20 conference on Digitising finance, financial inclusion and financial literacy, Wiesbaden, 25 January 2017