

PRESS RELEASE

Dissecting the global growth and productivity slowdown

Economic growth in the developed world has been persistently weak since the global financial crisis. Much has already been written to try to explain this, mostly emphasising macroeconomic factors and the role of monetary and fiscal policies, or changes in the dynamics of trade and the global integration of production.

A new study released today by the Vienna Institute for International Economic Studies (wiiw) finds that the weakness of ICT investment and productivity provides is another main explanation for the persistently slower growth over the past decade. As part of the study, wiiw has updated and revised the EU KLEMS database, a large dataset providing information on growth and productivity drivers at the total economy and detailed industry level (the database is accessible at www.euklems.eu). Our results, and the multiple challenges facing the global economy at present, suggest that a return to something like pre-crisis rates of growth is highly unlikely in the coming years.

Key conclusions of the study are as follows:

- › *GDP and productivity growth has been significantly lower in the post-crisis period in the EU and the US than before 2008. Both have increased slightly in Japan, but from lower levels.*
- › *The main factors behind the slowdown are lower contributions to growth from total factor productivity (TFP) and information and communication (ICT) assets, both tangible and intangible.*
- › *Growth in the EU has been much less driven by ICT investments and R&D compared to the US and Japan.*
- › *Traditional drivers of growth, such as TFP, skills, and investment in tangible assets, still account for the majority of growth. However, as these traditional drivers remain weak (by pre-crisis standards), the role of intangible assets (including R&D, software and databases, innovative properties and economic competencies) are becoming relatively more important.*

Slowdown in GDP growth reflects weaker contributions from growth in total factor productivity (TFP) and capital

A key part of the slowdown in post-crisis growth reflects the weakness of total factor productivity (TFP; see Figure 1 below). We find that average annual TFP growth, including changes in labour composition, declined from slightly above 1% to 0.75% in the EU-15, and from 1% to 0.5% in the US. In EU-CEE, the slowdown was even stronger, from 4% in the pre-crisis period to 2.5% in 2010-17. Only Japan recorded higher TFP growth, from 0.5% in 2000-06 to more than 1% in the post-crisis period. It is important to note here that the causality of direction between TFP and overall growth performance might go in both directions, i.e. that the slowdown in TFP could also be the consequence, rather than the cause, of weaker overall growth.

We identify a similar pattern when considering growth rates for labour productivity allowing a focus on changes in capital deepening (capital stocks relative to hours worked). Figure 2 reveals that in the period after the crisis the contribution of capital deepening strongly declined, particularly so with respect non-ICT capital.

The digital revolution has lost steam

With respect to ICT and intangible assets, we identify three important facts with respect to growth dynamics.

First, the importance of tangible (ICT hardware) and intangible (software and databases) investments has declined significantly, and contributed even slightly negatively to growth in Japan. Whether this indicates that the 'digital revolution' (which started in the 1950s and has accelerated in the 1990s) has lost steam or whether we face a [re-emergence of the 'Solow paradox'](#) remains an open question.

Second, the role of 'other' intangible assets – R&D and other innovative properties and economic competencies - proved to be more stable, with similar contributions to growth before and after the crisis. Therefore, the relative importance of these intangible assets has increased.

Third, we find that ICT and intangible assets account for around 10-15% of total growth. Therefore, the 'classical' growth drivers (TFP and labour quality, tangible investment) still explain the lion's share of economic activity.

From the European perspective these results also reveal the meagre role of investment in tangible and intangible ICT (and partly R&D) in the pre-crisis period. The EU has become more similar to Japan and the US because of the weaker contributions to growth in the latter countries, rather than a stronger performance in Europe.

Future outlook and policy needs

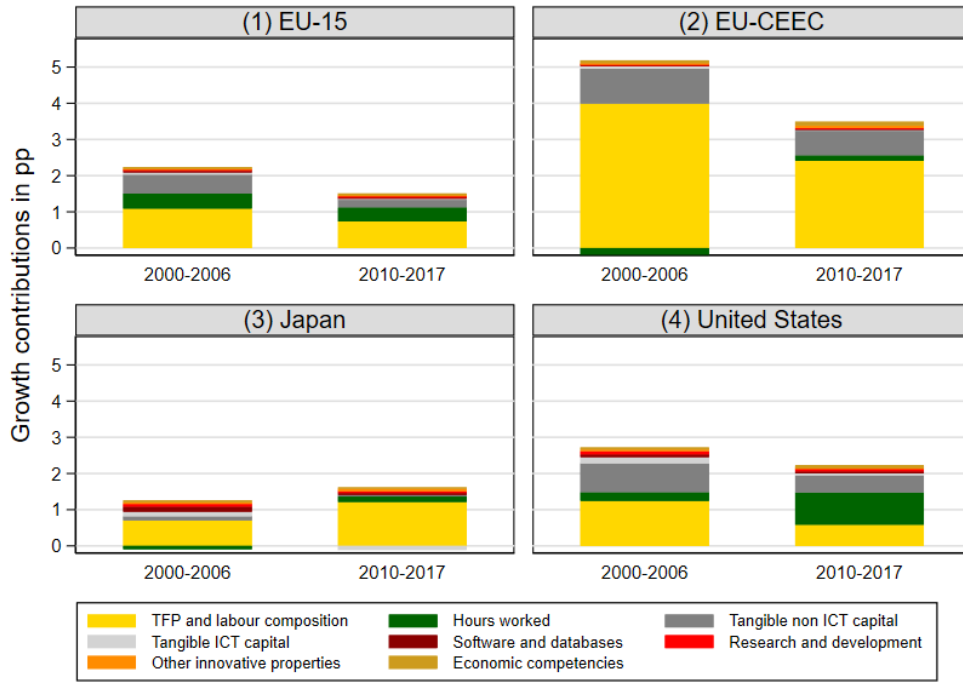
Considering the weak 2010-17 performance of the economies discussed above, we conclude that the short- to medium-term outlook is also not very rosy. The business cycle has turned downwards and the global economy faces major challenges, including a slowdown in Chinese growth (which accounts for about a third of global growth), rising trade tensions and protectionism, and general macro-economic conditions. Our research adds to existing calls for a strong policy response to the current challenges. This must include the [maintenance and strengthening of global institutions and regulations](#). In addition, we see the need and scope for fiscal and monetary policy action to address future challenges, including environmental issues and - particularly for Europe - [demographic challenges which might be combatted with higher productivity growth](#).

Contact:

Robert Stehrer (+43 1) 5336610 – 47
Veronika Janyrova (+43 1) 5336610 – 53

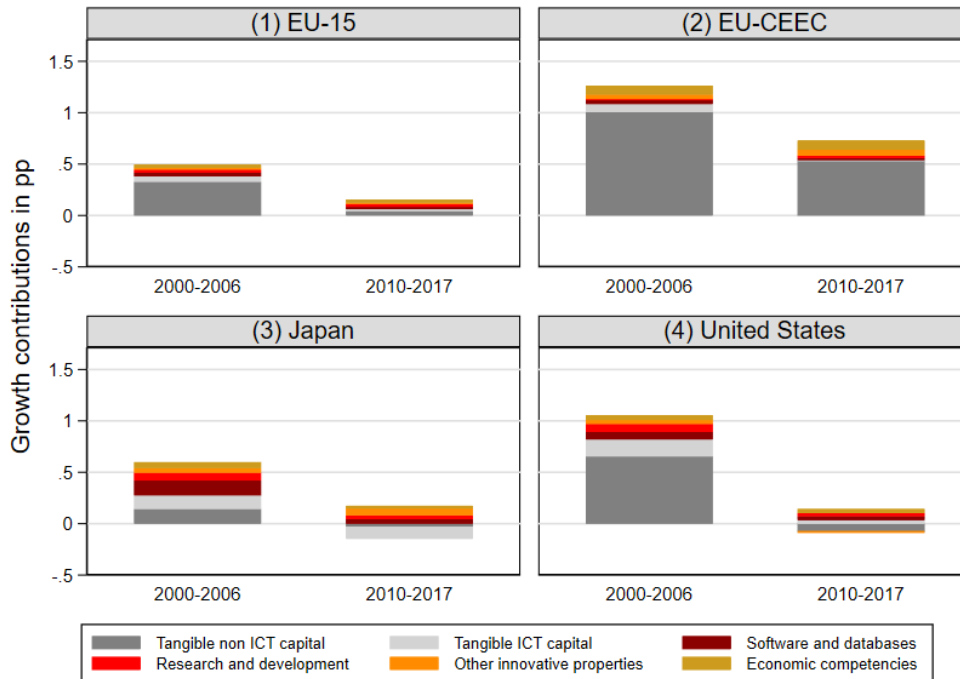
stehrer@wiiw.ac.at
janyrova@wiiw.ac.at

Figure 1 / GDP growth before and after the global financial crisis



Note: EU-15 includes AT, BE, DE, DK, EL, ES, FI, FR, IE, IT, LU, NL, PT, SE, and UK; EU-CEEC includes BG, CZ, EE, HU, LT, LV, RO, SI, and SK; Japan covers period 2010-2015.
Source: EU KLEMS Release 2019.

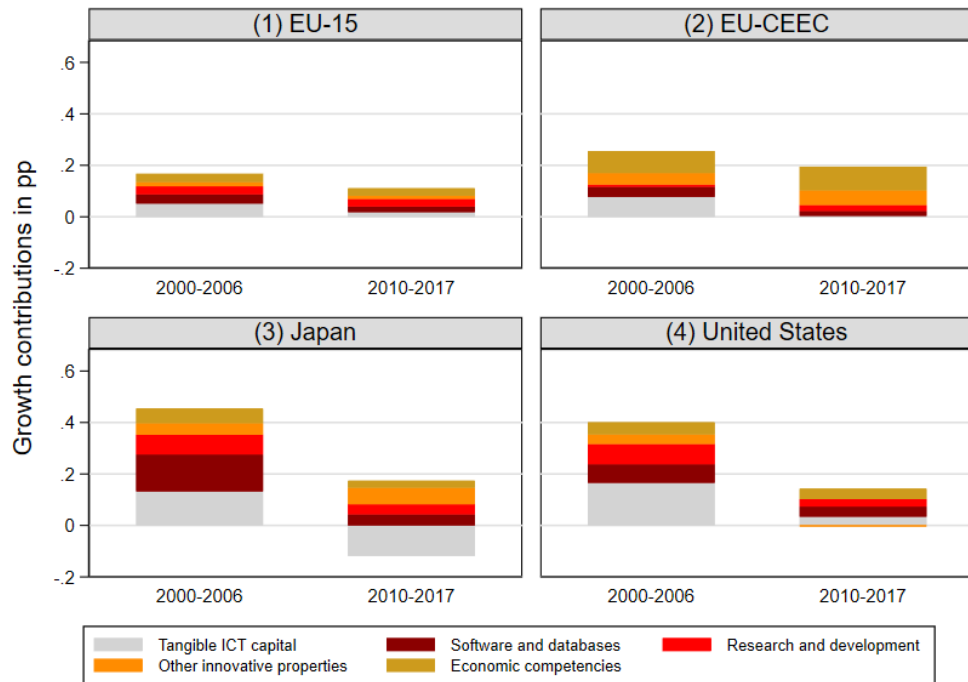
Figure 2 / Labour productivity per hour worked growth and the role of capital deepening



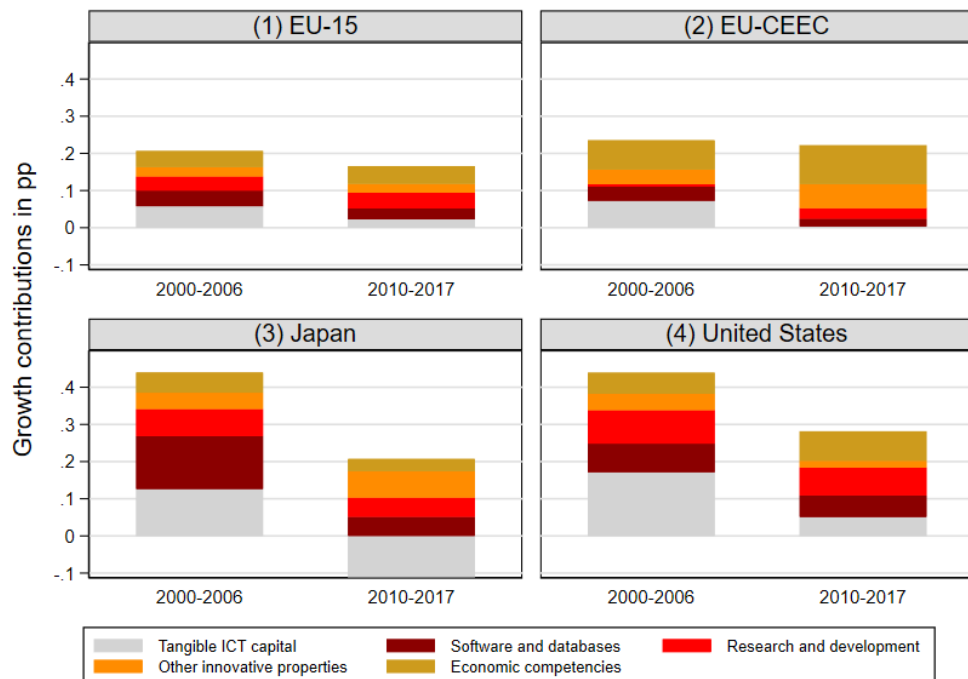
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Source: EU KLEMS Release 2019.

Figure 3 / Contributions of ICT and intangible assets to ...

.... labour productivity per hour worked growth



... GDP growth



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Source: EU KLEMS Release 2019.