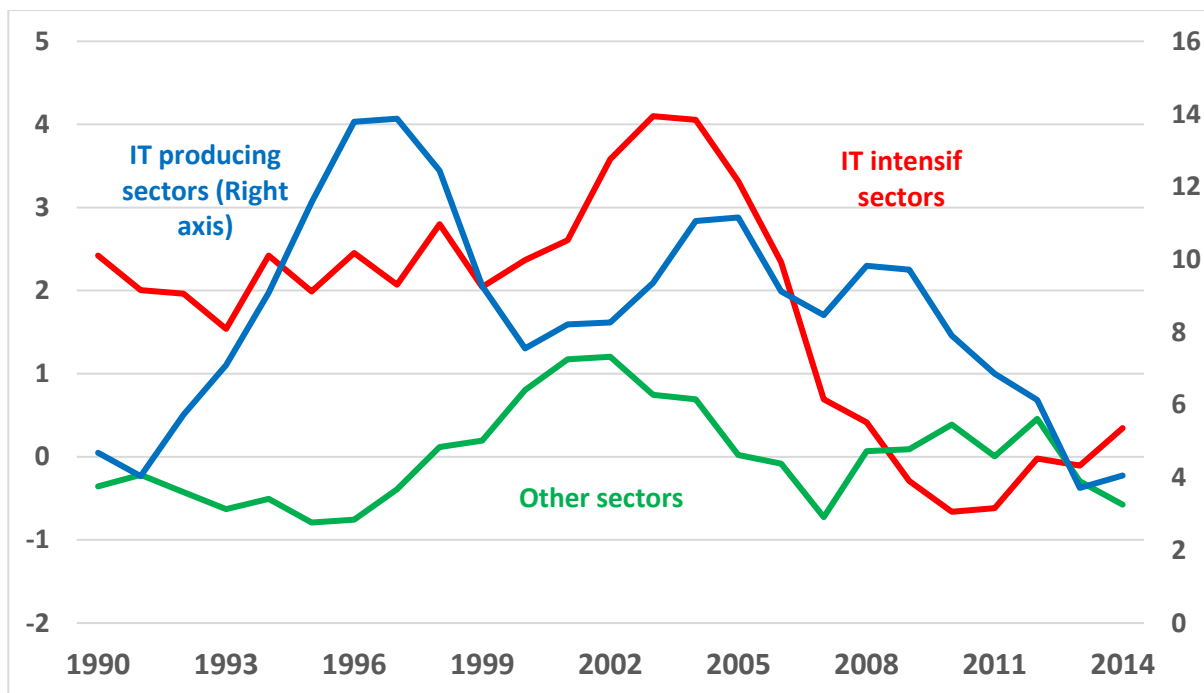


Falling growth and rising rents in the United States

By [Antonin Bergeaud](#)

The United States has undergone significant macroeconomic changes over the past 30 years. Economic growth has been on a downward trend (except between 1995-2005), the labour share fell sharply in the late 1990s and sectoral concentration has increased to particularly high levels. These profound changes have been driven by the spread of information and communication technologies that have radically altered the structure of the market.

Chart 1a: Productivity gains and information and communication technologies (in %)



Source: Aghion et al. (2019).

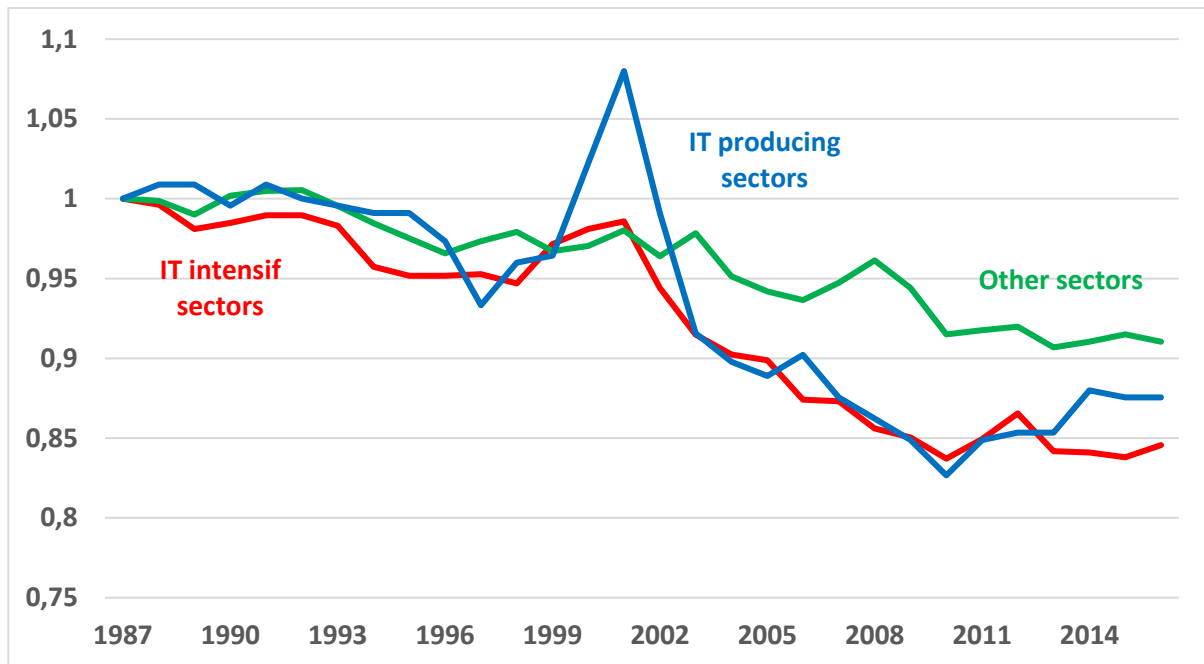
Note: Productivity trends in different sectors in the United States: IT producing, IT-intensive and other sectors.

Major structural changes

Between 1865 and 1965, [US labour productivity growth averaged 2.5% and total factor productivity growth averaged 2.0%](#). These growth rates then gradually declined to historically low levels in the 2010s. However, this downward trend came to a

temporary halt between 1995 and 2005 with the productivity wave generated by the spread of information and communication technologies (ICTs), which considerably improved the efficiency of some firms, as discussed in detail by [Bergeaud, Cette and Lecat \(2016\)](#). Chart 1a shows that this growth wave mainly occurred in ICT-using sectors, which subsequently saw their productivity gains slump rapidly. Using the same classification, these very sectors are also those which, over this period, saw the labour share in value added fall most sharply (Chart 1b).

Chart 1b: labour share and information and communication technologies (index 1 = 1987)

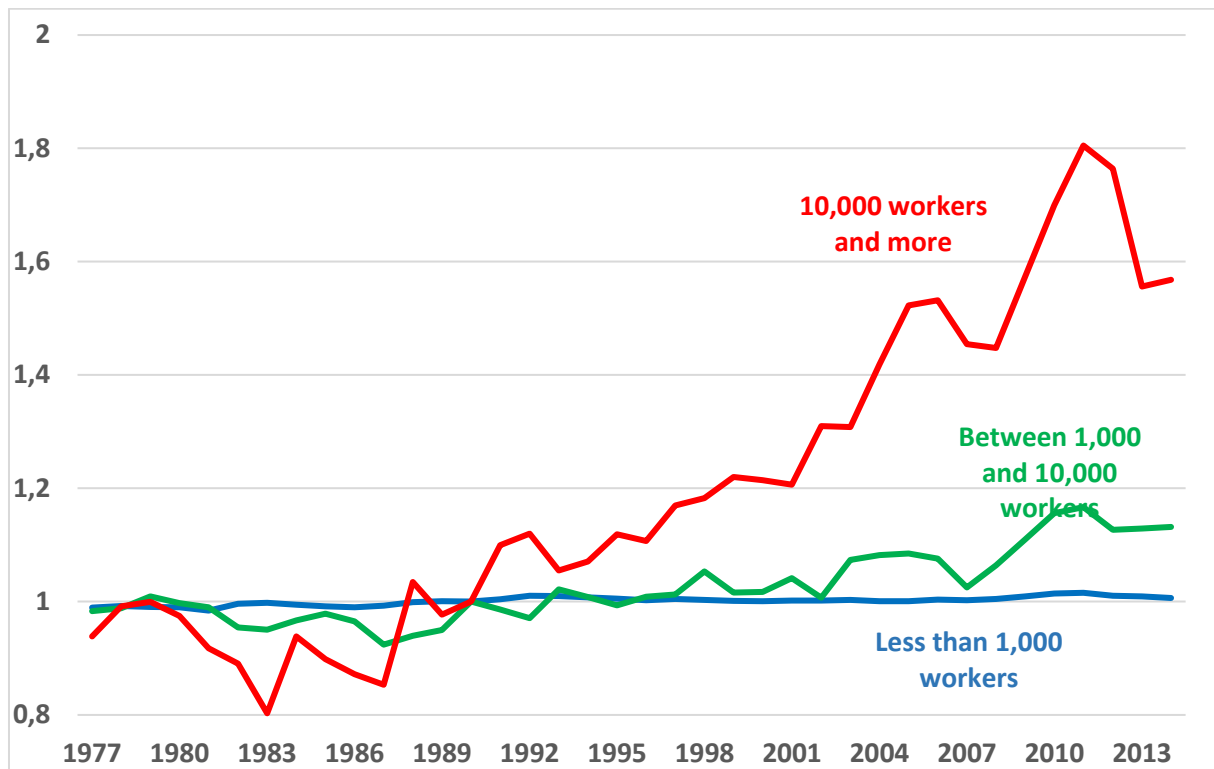


Source: Aghion et al. (2019).

Note: Changes in the labour share of value added of the groups in sectors defined in Chart 1a in the United States.

In addition to this slowdown in productivity, some authors such as [Gutierrez and Philippon \(2017\)](#) report an increase in concentration in all sectors, particularly retail trade, but also air transport and telephone operators. This increase in concentration is concomitant with an apparent decline in the labour share which, as we see in [Aghion, Bergeaud, Boppart, Klenow and Li \(2019\)](#), is the result of a composition effect: the average firm has seen its labour share increase, but a few firms with a low labour share have become increasingly dominant, notably by expanding geographically across the United States (and thus through the addition of new establishments as shown in Chart 2).

Chart 2: Change in the number of establishments per firm for different firm sizes in the United States. (index 1 = 1990)



Source : Aghion et al. (2019).

Note: The size given corresponds to the number of employees in 1990.

ICT diffusion as a driver of these phenomena

To explain these phenomena, in [Aghion, et al. \(2019\)](#), we argue that ICTs, and in particular the acceleration in their diffusion between 1995 and 2005, facilitated the hegemony of certain firms by enabling them to become increasingly dominant in their sector, to the detriment of their competitors. In particular, we take the example of Walmart, whose [expansion was made possible](#) by a large-scale logistics plan incorporating a wide range of optimisation technologies. Other studies such as [Lashkari et al. \(2019\)](#) also show that the largest firms invested more in ICT and intangible assets than the others. The decline in the cost of ICTs thus appears to have benefited the largest and most efficient firms more.

If ICTs have been more beneficial to the most productive firms, it might seem consistent to expect a positive effect on growth. In [Aghion et al. \(2019\)](#), we argue that the effect is more subtle over the longer term, as these technologies disrupt the market structure and competition and may hamper growth by discouraging innovation. Our model is based on the idea that a company will decide to invest in R&D and enter a new market if the cost of this investment added to the cost of managing an additional product line does not exceed the profits that would be generated. When costs are too high, the entry of new companies is more complicated and incumbents are protected from competition.

What the digital revolution initially made possible was a significant reduction in the cost of adding a product line. As a result, the intensity of innovation, and therefore of growth, increases and the best-performing companies are then able to expand rapidly in several markets. But, subsequently, as these firms become increasingly dominant, they become more and more exposed to competition from other efficient firms, which reduces their profit margins (particularly because it means lowering prices). The drop in potential profits therefore discourages them from innovating, and hampers growth. This idea is consistent with both [Autor et al. \(2019\)](#) who show that the increase in sectoral concentration has been accompanied by a fall in profits within companies and with [Rossi-Hansberg et al. \(2018\)](#) who show that locally, large companies are more likely to compete with each other, paradoxically leading to a fall in sectoral concentration at more detailed geographical levels.

Following a technology shock, the model we propose thus converges towards an equilibrium in which concentration is higher, i.e. the market share of the most efficient firms has increased sharply, and in which growth is low. Moreover, since these efficient companies have a lower share of labour than the others, our model also predicts a decline in the latter via a composition effect, which is consistent with reality. It is interesting to note that while the decline in productivity seems to be a widespread phenomenon among OECD countries, it is not always accompanied by a decline in the share of labour [particularly in France](#) but more generally in Europe. And indeed, Europe did not have an ICT wave in the 1995-2004 period.

Qualitatively and quantitatively, our model is thus able to account for the many structural changes observed in the United States and described above.