

Has creative destruction decline in the United States between 1980 and 2020?

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March 2025

Abstract

Creative destruction in the United States has declined significantly since the 1980s despite strong growth in firm profitability which directly contradicts many macroeconomic growth models based on creative destruction such as the Schumpeterian model. However, common measures of creative destruction overlook a significant amount of innovation that has occurred in the US in recent decades and therefore should not be considered alone.

1 Introduction

Creative destruction was a term first used by Schumpeter (1915) to describe the process by which new innovations and firms replace old ones. It is an important concept in macroeconomics as modern growth theories such as Romer (1990) tend to rely on productivity growth as the main driver of sustained economic growth. Aghion and Howitt (1992) further developed the Schumpeterian model of creative destruction to show that economic growth comes directly from innovation and creative destruction.

According to Decker et al. (2016), ‘the pace of creative destruction has declined in recent decades in the United States’, which they support with data on gross job and worker flows, along with data on firm entries and exits. Decker et al. paint a bleak picture of creative destruction and business dynamism in the United States, and warn of declining productivity growth as a result; however, this places a large emphasis on creative destruction as a major indicator of innovation and growth while ignoring other factors almost completely. For example, while measures of creative destruction have declined since the 1980s, innovation has not necessarily declined itself. Since 1980, R&D spending has increased almost five-fold in real terms while the number of US originated patents issued each year has increased from less than 60,000 a year in the early 1990s to over 180,000 by 2020.

The measures of creative destruction I will look at are firm birth and death rates, the job reallocation rate, and the share of young firms in the economy. These measures indicate the level of creative destruction by showing trends and patterns in firm creation and destruction, along with through the reallocation of workers to more productive jobs.

2 Discussion

2.1 Creative Destruction

Creative destruction has been on the decline in the United States since 1980. The share of young firms in the economy is a good measure of creative destruction as a high share of young firms implies that older firms are frequently being displaced and replaced with newer and more innovative ones. Defining young firms as those that have existed for less than 5 years, we can see a steady decline across the board since 1980. The share of young establishments, young firms, and the share of employment in young firms, all declined since the 1980s; however, from the early 2010s, there has been a slight increase in the share of young firms and establishments, while the employment share has remained low.

Another useful way of analysing creative destruction is through firm birth and death rates, and the job reallocation rate. High firm birth and death rates imply a high level of creative destruction as firms are continually going out of business and being replaced by young firms. A high job reallocation rate means that workers are frequently being moved around to new positions, also implying high levels of creative destruction. Figure 2 shows the firm birth and death rates declining since 1980 suggesting that fewer new firms are entering the market and displacing old ones, while the job reallocation rate is also falling, showing that workers are moving between firms and roles on a smaller and smaller scale.

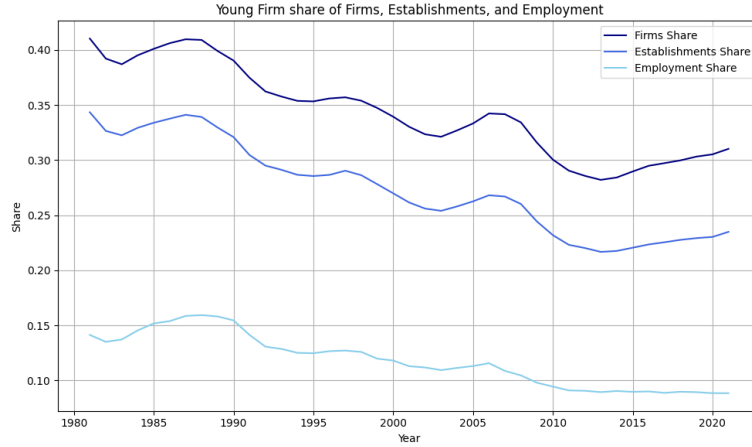


Figure 1: Share of young firms in the economy, U.S. Census Bureau (2023).

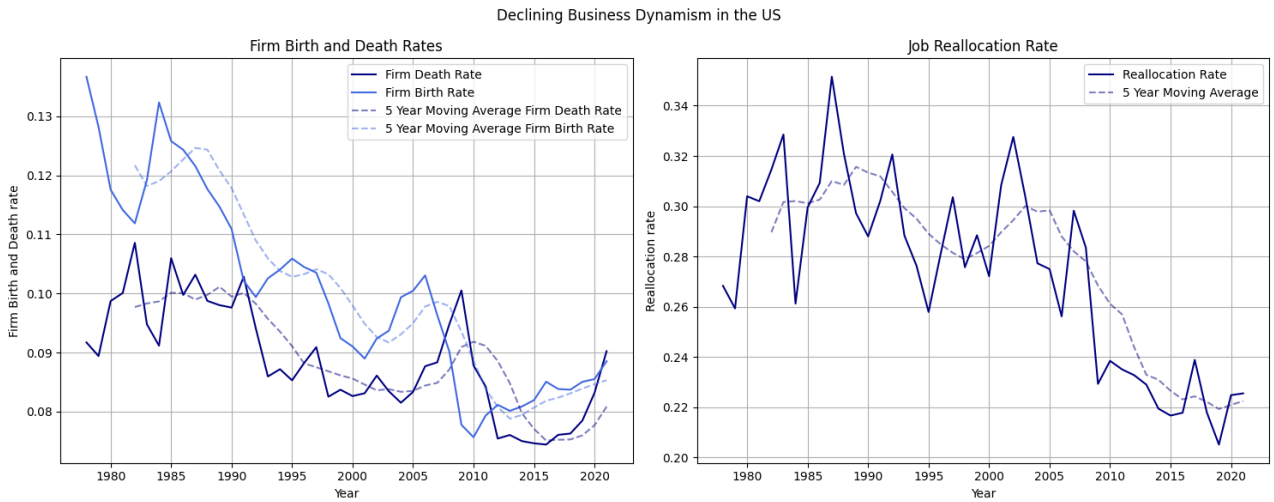


Figure 2: Job reallocation and firm birth and death rates, U.S. Census Bureau (2023).

2.2 Innovation

One key finding of the Aghion and Howitt version of the Schumpeterian model is that higher firm profitability causes higher levels of creative destruction. This is because higher profitability increases the firms present value and therefore raises the optimal level of research and development. This higher R&D increases the level of innovation that occurs and as a result, increases the amount of creative destruction. This relationship should imply that as creative destruction has been on the decline in the US since the 1980s, that it should have been caused by lower firm profitability, but as we know from De Loecker and Eeckhout (2017), firm profitability and markups have increased drastically since then.

To analyse how this occurs, we might look at whether the level of R&D since 1980 and how it has changed along with firm profitability. Figure 3 shows that from 1980, real R&D spending has increased year on year from less than \$200bn in 1980 to over \$850bn in 2021, in 2017 prices. This implies that the mechanism in the Aghion and Howitt model that sees higher profitability lead to a higher optimal level of R&D spending could be working as expected, but without firm level data on R&D spending, we cannot know this for sure.

A potential explanation for why an increase in profitability and an increase in R&D spending in the United States since the 1980s has not caused an increase in creative destruction comes from the dispersion and heterogeneity of firm profitability and markup growth. De Loecker and Eeckhout (2017) show that while the average markup has increased from less than 1.2 in 1980 to over 1.65 in the mid to late 2010s, this has mostly been driven by a large increase in the markup of the largest firms in the economy. For example, we can see that the markup of the 90th percentile of firms by market share of sales has increased from less than 1.5 in 1980 to over 2.5 in the 2010s, while the markup of the 50th percentile of firms has stayed broadly the same at around 1.2.

The Aghion and Howitt model environment has each good being produced by a single firm and so applying it in this instance sees certain markets become highly profitable and therefore significantly raises the optimal level of R&D investment; however, it is only these highly profitable firms that have the resources to invest in that

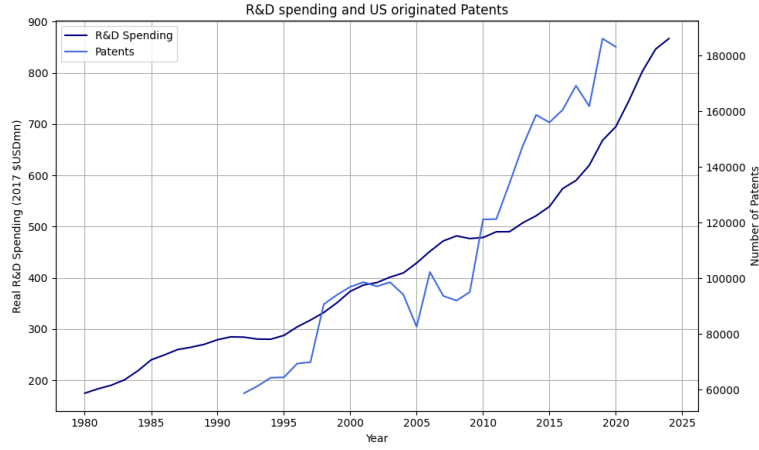


Figure 3: Measures of innovation: US originated patents, U.S. Patent and Trademark Office (2025); real R&D spending, U.S. Bureau of Economic Analysis (2025).

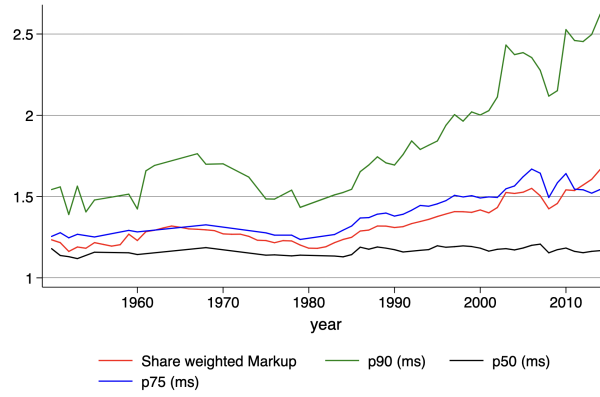


Figure 4: Markup dispersion, De Loecker and Eeckhout (2017).

level of R&D. This goes unaccounted for when using creative destruction as a measure of innovation as it does not allow for firms ‘creatively destroying’ themselves and only allows for innovation to come from competitors or new market entrants.

Therefore, to say that innovation has declined in the United States by looking at the decline of creative destruction would be ignoring other powerful metrics for analysing innovation. In 2020, the US patent office granted 183,000 patents that had originated in the United States up from less than 60,000 in 1992. Apple Inc. alone, one of the largest and most profitable US companies in recent history, has seen its patents approved per year grow from 676 in 2011 to 2,791 in 2020, Statista (2024), highlighting the pass through from high profitability to investment in R&D.

3 Conclusion

Creative destruction in the United States has declined since 1980. This is seen in the data in metrics such as the job reallocation rate, firm birth and death rates, and the share of young firms in the economy, which have all declined significantly since the 1980s. This decline in creative destruction has occurred even in the face of rising firm profitability and markups, something that according to theories of creative destruction like the Schumpeterian model developed by Aghion and Howitt should not have happened. Those models predict that higher firm profitability should increase creative destruction as innovation happens faster. However, while the first part of that mechanism seems to have held true in the data, with higher profitability leading to much higher levels of R&D spending and patent filing, this has not led to the increase in creative destruction predicted by the model. However, the fact that creative destruction has declined in the US does not necessarily mean that innovation and productivity growth have stalled as a result and instead just highlights the shortcomings of these models.

References

- Aghion, P. and Howitt, P. (1992). A model of growth through creative destruction. *Econometrica*, 60(2):323–351.
- De Loecker, J. and Eeckhout, J. (2017). The rise of market power and the macroeconomic implications. Working Paper 23687, National Bureau of Economic Research.
- Decker, R. A., Haltiwanger, J., Jarmin, R. S., and Miranda, J. (2016). Declining business dynamism: What we know and the way forward. *The American economic review*, 106(5):203–207.
- Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5):S71–S102.
- Schumpeter, J. A. (2015). *Capitalism, Socialism and Democracy*. Routledge Classics. Routledge, Chapman & Hall, Incorporated, Georgetown, 1st ed. edition.
- Statista (2024). Number of patents assigned to apple in the united states from 2010 to 2022.
- U.S. Bureau of Economic Analysis (2025). Real gross domestic product: Research and development. Retrieved from FRED, Federal Reserve Bank of St. Louis.
- U.S. Census Bureau (2023). 2021 business dynamics statistics datasets.
- U.S. Patent and Trademark Office (2025). U.s. granted patents: Total patents originating in the united states. Retrieved from FRED, Federal Reserve Bank of St. Louis.