

# Cyclical Downturn or Slowing Trend? A Review Article on *Productivity Puzzles across Europe*

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## ABSTRACT

*Productivity Puzzles across Europe* examines European productivity before, during, and since the Great Financial Crisis, with a special focus on country-specific labour-market institutions. This review emphasizes first, that European productivity growth has been slowing for decades — it is not just a recession and post-recession phenomenon. Second, the book’s analysis of labour markets, which highlights incentives to hoard labour, is relevant for understanding cyclical fluctuations in total factor productivity (TFP) around that trend. For example, institutions in Germany encouraged use of intensive margins (hours per worker and maybe effort), so measured TFP fell sharply in the recession but then rebounded quickly. The labour-market analysis in the book sheds little light on the slowing TFP trend.

In the past few years, the healing process from the Global Financial Crisis (GFC) has finally become broadly entrenched. But with the global cyclical upswing has come the increasing recognition of a different, and potentially longer lasting, concern: Trend growth rates are slow. The “surprise,” relative to expectations from before the GFC, has been in trend productivity.<sup>2</sup>

This global productivity slowdown is the

backdrop for the book, *Productivity Puzzles across Europe* edited by Philippe Askenazy, Lutz Bellman, Alex Bryson and Eva Moreno Galbis and published by Oxford University Press in 2016. The first paragraph of the introduction motivates the book as follows: “The EU as a whole is experiencing a surprising slowdown in productivity.” The book focuses in depth on aspects of European productivity performance before,

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<sup>2</sup> For example, the International Monetary Fund’s World Economic Outlook (WEO) in April 2015 made the following observation: “Potential output growth across advanced and emerging market economies has declined in recent years. In advanced economies, this decline started as far back as the early 2000s...” (IMF, 2015: 69). Each of the twice-annual WEO’s since then has taken this slow down in potential growth as a given.

during, and since the GFC, with a deep dive into country-specific labour-market institutions in France, the U.K., Germany, and Spain. The book comprises nine chapters plus a lengthy introduction and a conclusion. Fifteen authors from a range of European countries contribute.

The strength of the book is its detail on how labour-market institutions across countries shape the short-term adjustments to shocks. As a result, despite the motivating quote above, most of the book turns out to be about cyclical fluctuations in productivity during the GFC itself, rather than the slowing trend that has continued. Over the past decade, both the cycle and the trend are important. But in the global context, the book did not persuade me that Europe's experience was that distinctive. Like the United States, the big picture is that Europe suffered a deep recession superimposed on a slowing trend.

### What Are the Puzzles?

The introduction and conclusion suggest two distinct big-picture “puzzles” — or, perhaps, stylized facts — about recent European productivity growth. These puzzles are restated in various ways throughout the book, with additional nuances:

- Productivity in many countries fell more than usual during the GFC itself.
- Productivity did not pick up in the recovery the way it usually does, i.e. the trend has been low.

The flip side of the first puzzle is that, in the

U.K. and Germany, the unemployment rate response to the recession appeared muted — considerably so, in the case of Germany.

In order to document that these are, in fact, puzzles, the productivity data since 2008 would ideally be compared with long historical experience. Yet despite the large number of tables and charts in the book, most of the productivity data reported start only in the early 2000s. (The nice paper by Bart Van Ark, in chapter 1, is an exception.)

To provide this broader context, Chart 1 illustrates both of these stylized productivity facts for the euro-area as a whole. The chart shows the year-over-year growth in euro-area total factor productivity (TFP) since 1960, using data from Bergeaud *et al.* (2016).<sup>3</sup> It also shows a smoothed trend line, estimated as a biweight filter with a smoothing parameter of 12 years.<sup>4</sup>

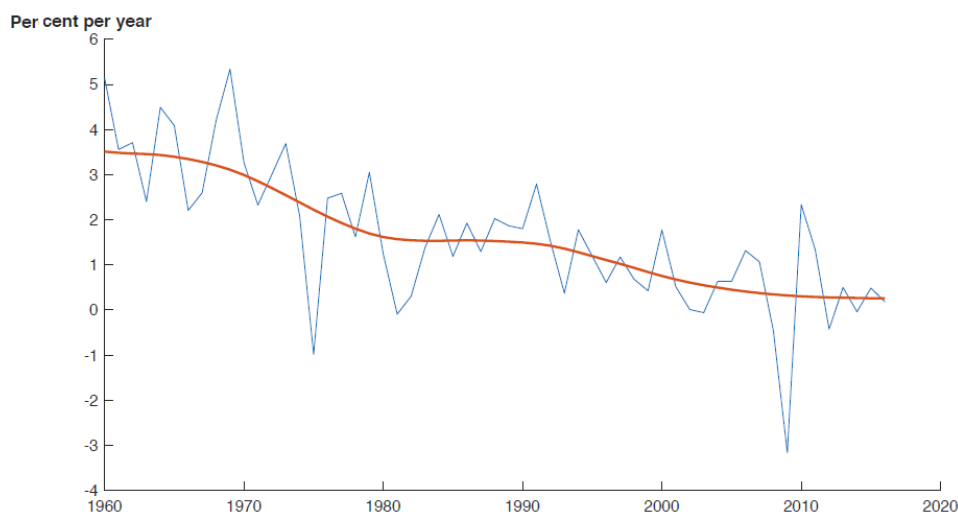
The chart illustrates the two puzzles. First, looking at the year-over-year fluctuations, the decline in euro-area TFP in 2009, during the most severe portion of the GFC, was deeper than any previous European recession. That said, it is only modestly worse relative to trend than in the early 1970s, and was not as persistent as the downturn in the early 1980s. Second, the trend line has continued to weaken in the recovery. The slow trend in the chart is common across countries. For example, the Van Ark chapter finds, strikingly, that every major country in Europe had negative TFP growth in the 2008-2014 period. Conceptually, the two puzzles are distinct. A large economic literature looks at cyclical productivity. A separate, large literature

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<sup>3</sup> The data refer to the total economy. A virtue of the Bergeaud *et al.* data is their long time series for the (pseudo) euro area. A shortcoming is that they do not adjust hours worked for labour quality or composition. Labour quality tends to rise in downturns, since lower-skilled workers are more likely to lose their jobs. So if TFP were measured with quality-adjusted labour, it would have declined even more than Bergeaud *et al.* estimate in 2009. Capital services data are also constructed with relatively aggregated types of capital.

<sup>4</sup> The trend line is close to being a 12-year centered moving average, except it is smoother and it becomes increasingly one-sided at the end points.

Chart 1: Trend and Cycles in Euro-Area Total Factor Productivity (TFP), 1960-2015



Source: Bergeaud *et al.*(2016). Trend is a biweight filter, with bandwidth of 12 years.

looks at trend growth.

### Europe's Slowing Trend

My first main reaction to the book is that the slowing trend is not new. Looking at Chart 1, TFP growth in Europe has been declining since the 1960s.

Moreover, although the book's introduction highlights the slowing trend, very little of the book is actually about the trend. The trend is mainly addressed in the first two chapters, by Bart Van Ark (2016) (comparing Europe to the United States) and Nick Crafts (2016)(asking whether secular stagnation is the future of Europe).

The implicit framework that underpins these first two chapters is familiar from the conditional convergence literature. In this literature, growth depends on innovation as well as the forces of convergence. Specifically, growth at the frontier is determined primarily by innovation. But frictions might keep countries from achieving that frontier — they might converge to their own steady state relative to the frontier. A corollary is that countries can grow faster than the frontier if they can remove impediments and converge towards the frontier.

The long-term slowing trend in Chart 1

reflects several forces. One force is the end of post-war economic convergence. A second, and more worrying, is some deterioration relative to the U.S. frontier following the U.S. ICT boom of the mid-1990s. This second force is a major focus of the Van Ark chapter (see also Cette *et al.*, 2016). Van Ark notes that a continuing post-crisis divergence from the United States could occur if the crisis caused labour, product and capital market frictions to increase misallocation. But while this is possible, the book does not actually show that any of these events took place. In addition, there is evidence that digitalization has had a more muted effect on growth in Europe than in the United States and, perhaps relatedly, intangible capital appears to contribute less to growth in Europe.

In terms of policy implications, the Van Ark and Crafts chapters do suggest policies aimed at innovation and catch-up. For example, Crafts suggests easing labour and product market regulations that have slowed the diffusion of ICT; completing the single market in services; and improving education.

## Labour Markets, Labour Hoarding, and Cyclical Productivity

After chapter 2, analysis of the trend slowdown largely disappears from the book (though not always from the book's rhetoric). In particular, the core contribution of the book is contained in four country chapters that look, separately, at the experiences of France (Askenazy and Erhel, 2016), the U.K. (Bryson and Forth, 2016), Spain (Hospido and Moreno-Galbis, 2016), and Germany (Bellman *et al.*, 2016). Those four countries account for some 60 percent of European Union (EU) GDP. These chapters focus in depth on labour market issues and each provides some novel firm- and workplace-level analysis. These country chapters are accompanied by valuable essays by Dan Andrews (2016) (discussing the U.K. and French chapters) and Tito Boeri (2016) (discussing the Spain and Germany chapters).

The distinguishing feature of the country chapters is that they explore the role of labour-market institutions, and to a lesser extent rising educational attainment, in explaining productivity movements. The editors argue for focusing on labour markets because they have “received limited attention in the productivity literature thus far”. The introduction states (Askenazy *et al.*, 2016: 24):

...the hoarding of skilled workers and the dramatic educational amelioration of the workforce, combined with labor market reforms and labor market policy reactions to the recession, constitute important hypotheses to explain a lesser adjustment of the aggregated workforce in the three largest European economies [Germany, the U.K., and France] during the Great

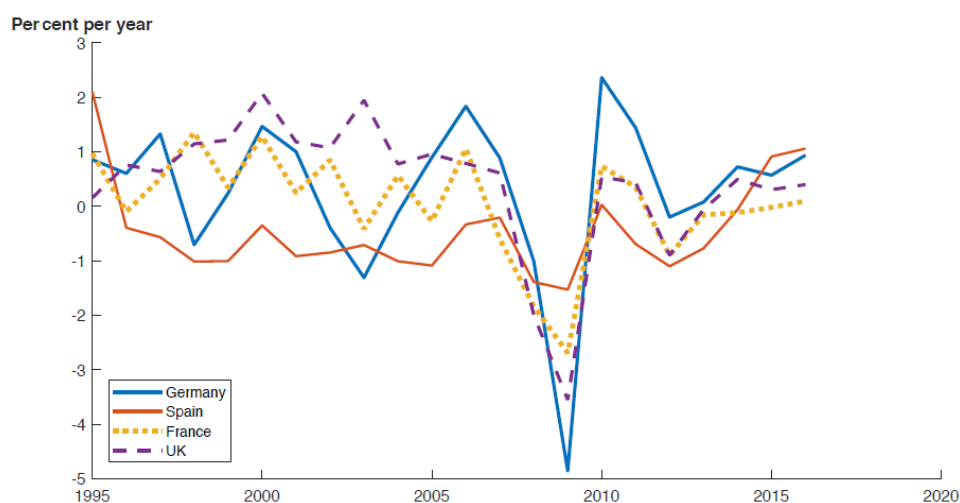
Recession and the apparent productivity slowdown.

My second main reaction to the book is that its labour-market focus — which emphasizes incentives to hoard labour — is primarily about the cyclical productivity dynamics in 2009 and 2010. The last line of the above quote suggests that the labour market issues that are discussed might also explain the persistent slowdown in growth. But to my reading, the country chapters provide little or no insight into the broader issues of that slowing productivity trend. It is confusing to the reader that the rhetoric of the editors, and some of the chapter authors, blurs the distinction between the cycle and the trend. Sometimes, there is an attempt to shoehorn these conceptually distinct issues together.

In particular, a large literature discusses why measures of productivity vary systematically over the business cycle. TFP is generally procyclical — rising in booms and falling in recessions. The conventional view of procyclical TFP is that it reflects procyclical factor utilization — arising from labour hoarding and variable capital utilization (see Fernald and Wang, 2016, for a review). Labour hoarding, of course, is the idea that, in a cyclical downturn, firms might hold onto workers to avoid losing valuable skills that they will need when the economy turns up again.

Given the book's focus on labour markets, the country chapters all focus extensively on incentives to hoard labour (or not) during the GFC. But firms do not hoard labour forever — labour hoarding is related to the business cycle, not the trend. That is, it is most naturally an explanation for negative TFP growth in 2009 and, though barely noted in the book, the cyclical rebound in TFP in 2010. If one wants to use labour hoarding to explain what is now close to a decade of weak productivity growth, one

Chart 2: TFP Growth in Germany, Spain, France and the U.K, 1995-2017



Source: Conference Board Total Economy Database.

needs to make a strong case that firms are hoarding labour for that long.

Chart 2 shows a plot that I wish had been in the book’s introduction. Using Conference Board data, and focusing on 1995-2017 period, it shows TFP growth for the four countries. Note that TFP growth in all of the countries fell in the depths of the GFC — mostly fairly sharply. On the flip side, TFP growth rebounded in 2010, with the rebound inversely proportional to the decline.

The TFP decline in 2009 and rebound in 2010 were sharpest in Germany. The Germany chapter (Bellman *et al.*, 2016) documents what margins of adjustment firms used in the GFC. For example, institutions in Germany (such as short-time work) encouraged use of the intensive margin (hours per worker, and perhaps effort per hour) rather than the extensive margin of hiring and firing. Economic conditions and business expectations also supported the intensive margin. For example, manufacturing surveys show that businesses thought the downturn would be temporary, so they had an incentive to hold onto workers they would want in the

recovery.

Spain, in contrast, saw the smallest TFP decline in 2009 and the smallest rebound in 2010. That is, TFP growth was only slightly procyclical. As the chapter highlights (Hospido and Moreno-Galbis, 2016: 253), firms disproportionately used the extensive margin of labour-input adjustment: “When the crisis began, firms disproportionately fired individuals with temporary contracts”. One reason for the large use of temporary contracts is that, relative to other countries, a high share of employment was seasonal (e.g., linked to summer tourism) or tied to particular contracts in the construction sector. In addition, “hours of work are not easily an adjustment variable in Spain because firms are, in general, covered by collective agreements at a sector level which ... specify hours of work” (Hospido and Moreno-Galbis, 2016: 254). As Tito Boeri (2016: 299) says in his comment on the Spain chapter, “the strong responsiveness of employment/unemployment to output changes in Spain is not so surprising.”

Interestingly, in terms of trend, Spain’s TFP growth was negative before the recession and for most of the period since. In

the chart, TFP growth only turned positive after the recovery gained traction in 2015 and 2016. Until then, there was little apparent pickup in TFP growth after the recession.

Of course, as the book notes, Spanish labour productivity (output per hour) did look quite different — it rose in 2009 and was relatively strong for the next few years. The book seems to consider that to be a puzzle. As a reader, I would have liked it if the Spain chapter had been clearer on the growth accounting. The literature on cyclical productivity points out that TFP is likely to be procyclical (because of cyclical factor utilization), but all the other cyclical forces affecting labour productivity are countercyclical. After all, capital per hour worked is strongly countercyclical; and in recessions, low-productivity workers disproportionately lose jobs. Both of these factors work to make labour productivity countercyclical — consistent with Spain's experience.

In particular, given the depths of Spain's recession, I would argue that it is no surprise at all that labour productivity rose in the recession. TFP was only weakly countercyclical because all the incentives were to adjust labour input through the extensive margin, not the intensive margin. And all the other forces push strongly for countercyclical labour productivity.

In Chart 2, the U.K. and France were intermediate in terms of the cyclical TFP decline in 2009. The chapter on France has many rich details (Askenazy and Erhel, 2016). Unfortunately, I had a hard time

figuring out how most of the details mattered for productivity dynamics. Still, one interesting detail was the rise in educational levels. Surprisingly, employment of workers with a tertiary education was completely acyclical in the Great Financial Crisis. This illustrates a more general point: As the introduction notes, tertiary employment in France, Germany, and the U.K. is uncorrelated with GDP growth. All of the cyclical adjustment in employment is done by workers with lower levels of education.

A feature I liked about the U.K. chapter is that it sought to explain the mechanisms through which labour hoarding makes TFP procyclical. (The chapter on France seems to just presume this link, which made the discussion less useful than it could have been.) Labour hoarding naturally makes employment less cyclical, so it mechanically makes output per **worker** move procyclically along with output. But if the intensive margin of hours per worker can adjust relatively flexibly, then the implications of labour hoarding for labour productivity (output per hour) and for TFP might be different.<sup>5</sup>

The key question is what the hoarded workers are doing. The U.K. chapter (Bryson and Forth, 2016) makes some effort to figure that out. For example, one thing that skilled workers might do is undertake innovation — a form of unmeasured intangible investment. The evidence is mixed, but there is little evidence that hoarding of labour raised the rate of innovation. I would have liked it if the chapters on France, Spain, and Germany

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<sup>5</sup> More formally, if the hoarded workers are pure overhead workers, then that is a form of increasing returns to scale; and increasing returns makes TFP move in the same direction as overall inputs (i.e., procyclically). Alternatively, labour hoarding can lead to mismeasurement of either inputs or outputs. On the input side, labour effort might be low when there is less work to do (see Basu, Fernald, and Kimball, 2006, for a model and empirical work that assumes this). On the output side, workers might shift to doing unmeasured tangible or intangible investments (painting the factory walls, for example, or developing new products.) If there are increasing returns, or if there is mismeasurement of inputs or outputs, then labour hoarding does push measured TFP to be procyclical.

had tried to provide similar evidence on what hoarded workers were doing.

In terms of policy, Boeri points out that we do not actually know much about the relative costs and benefits of using the extensive versus intensive margins of labour-market adjustment. We all tend to think that the limited cyclical fluctuation in employment in Germany is “better” than the large fluctuations in Spain. But as Boeri notes (2016: 296), there is limited evidence on the “welfare properties of different adjustment mechanisms”. For example, policies (such as work accounts) that are helpful in downturns might also interfere with needed reallocations of resources, which could be relevant for productivity trends.

### **Is Europe’s Recent Productivity Experience Really Puzzling?**

For the United States, the leading hypothesis is that the U.S. economy suffered a deep recession superimposed on a sharply slowing trend (e.g., Fernald, Hall, Stock, and Watson, 2017). In the U.S. context, it is quite clear that the productivity slowdown predated the GFC (Fernald, 2014).

Is Europe’s experience inconsistent with this same narrative? In particular, is anything inconsistent with the view that this was an unusually deep and long recession leading to a sizeable but temporary decline in factor utilization in many countries — that was superimposed on a sharply slowing productivity trend? The book, in combination with Charts 1 and 2, does not provide evidence against this view.

In particular, Chart 1 shows that the TFP trend has been slowing for a long time. And the Van Ark and Crafts chapters — the only ones that are primarily focused on the trend — do suggest that this interpretation is consistent with Europe. Certainly, there

are potential channels through which the recession could have made the trend worse, by reducing innovation or by pushing Europe further inside the “frontier.” The country chapters provide little new insight on these issues.<sup>6</sup>

### **Conclusion**

Boeri makes a comment about the Spain and Germany chapters that resonated with me in terms of both the strengths, and the weaknesses, of the book. He notes that those chapters provide “a large body of relevant institutional details, which are often missed by those researchers who are interested only in the so-called big picture...” (Boeri, 2016: 296). That comment applies more broadly to much of the book. The strength of the book is its discussion of labour market issues and adjustment mechanisms. But the weakness is that many of the chapters, including the introduction and conclusion, often lose sight of the big picture. As a result, the reader often struggles to understand the purpose of all the details.

In this regard, it is helpful to understand that Europe’s productivity trend has been slowing for a long time. It is also important to recognize that the main focus of the core of the book (the country chapters) is on cyclical adjustment during the depths of the GFC — where Europe’s experience is consistent with the standard paradigm of procyclical TFP.

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<sup>6</sup> Adler *et al.* (2017) do provide some evidence on this.

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