



International evidence of time-variation in trend labor productivity growth[☆]



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HIGHLIGHTS

- We study time-variation in labor productivity growth for 14 OECD economies.
- The post-crisis slump in productivity growth is more than a cyclical phenomenon.
- On average, trend labor productivity growth follows a downward trajectory.
- Over the last half a century, labor productivity growth has slowed for a majority of OECD economies.

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ABSTRACT

We assess time-variation in labor productivity growth for a broad set of OECD countries over the period 1960–2016. The analysis utilizes a quarterly dataset and takes full account of the intensive labor margin. We apply ‘data-hungry’ endogenous break tests and time-varying parameters median-unbiased estimation. While the decline in labor productivity growth is particularly striking for European countries and Japan, it is rather mild in Anglo-Saxon economies.

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“Productivity isn’t everything, but in the long run it is almost everything (Krugman, 1994).”

1. Introduction

The anemic recovery from the global financial crisis has challenged the conventional understanding of countries’ economic potential and their future sources of economic growth. A main characteristic of the post-crisis years has been a conjectured productivity slowdown across OECD countries, pointing to a likely

failure to translate technological advances into commensurate innovations (OECD, 2016). While there is variation across countries and over time, the key question is whether the current productivity decline (e.g., Fernald, 2014; Adler et al., 2017) is only temporary or instead follows a long-term trend. Against this background, the objective of this paper is to provide empirical evidence on time-variation in trend productivity growth for a sample of 14 OECD countries since 1960.

We extend the existing literature in several directions. Firstly, we use a measure of labor productivity that is based on total hours worked. Other existing studies have used employment as a proxy for hours worked instead (e.g., Ben-David and Papell, 1998; Gust and Marquez, 2000). However, this is likely to convey a distorted picture of the evolution of productivity growth, as the increasing share of employees working part-time is ignored. Secondly, utilizing long time series at a quarterly frequency renders feasible the application of data-hungry econometric methods. Thirdly, our

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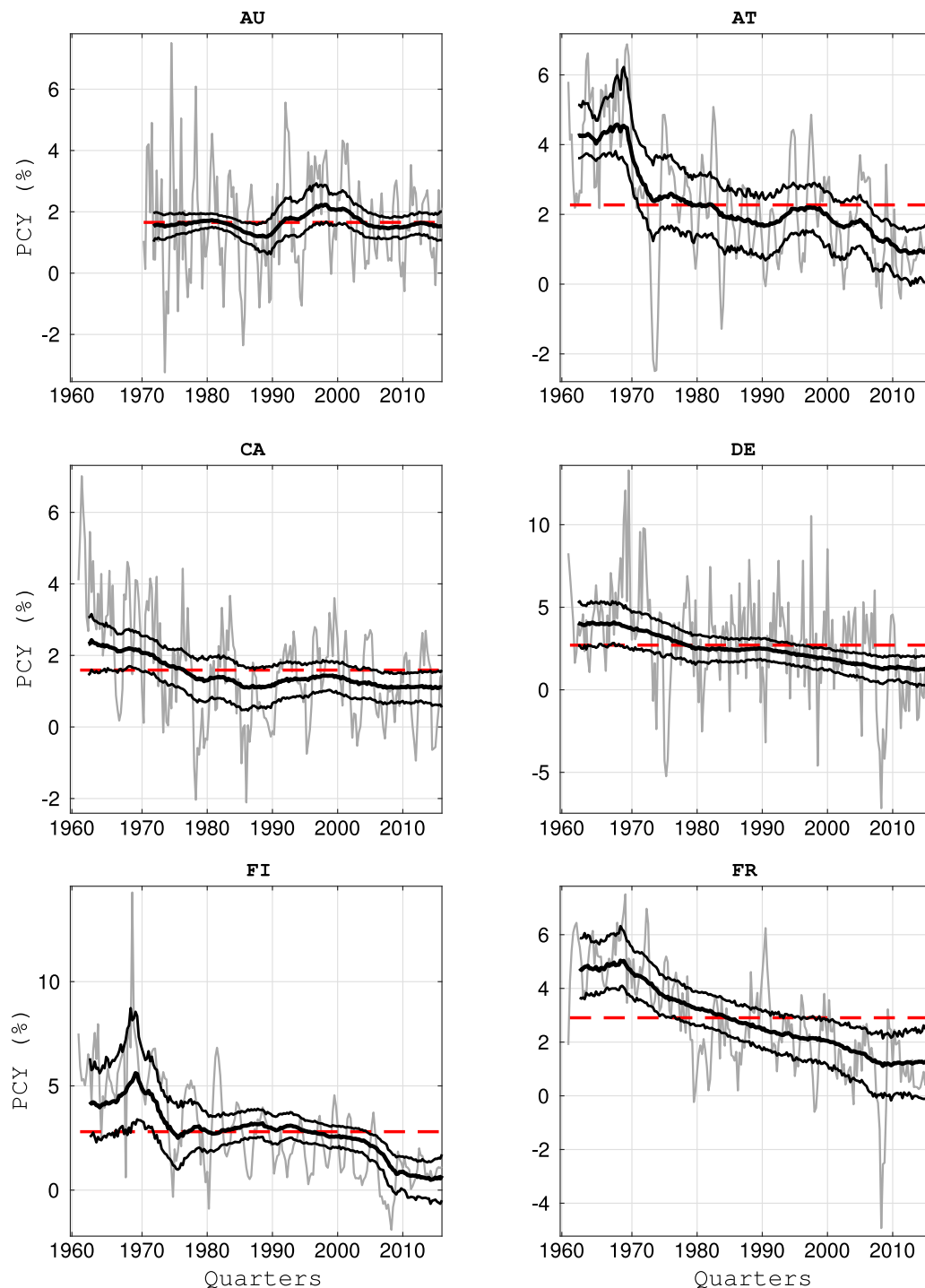


Fig. 1a. TVP-MUB estimates of trend labor productivity growth. *Notes:* — Quarterly productivity growth (y-o-y); — Average growth rate; — TVP-MUB estimate with 5th and 95th percentile of distribution. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

sample involves a large number of countries, allowing for a decent cross-country comparison.

Our empirical strategy involves two approaches. We follow the work of [Benati \(2007\)](#) and allow for changes in labor productivity growth to occur either in an abrupt fashion or, in turn, gradually. We perform endogenous break tests of [Bai and Perron \(1998, 2003\)](#) to identify multiple structural breaks, occurring at unknown points in the sample. Yet, break tests often exhibit low power when the series under investigation is characterized by (i) a slow and continuous drift, or (ii) by a certain configuration of changes

(e.g., recurrent breaks of opposite signs). Typically, such a data generating process is formalized by assuming random-walk time-variation in the coefficients. Against this background, we apply the more flexible time-varying parameters median-unbiased estimation (henceforth, TVP-MUB) methodology as proposed by [Stock and Watson \(1996, 1998\)](#). A key appeal of this approach is precisely that it allows to test for the presence of random-walk time-variation in the data, and then to estimate its extent.

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