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Globalization and deindustrialization in advanced countries☆

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ABSTRACT

A strand of empirical research on deindustrialization seeks to quantify the relative importance of the economic forces behind deindustrialization, and especially of the internal and external factors, i.e. those linked to globalization and trade. The results of this literature are highly fragile, arguably because the commonly used indicators of trade are not well defined to capture the contribution of globalization to deindustrialization. While this empirical study does not necessarily contradict the widespread belief that the internal factors are quantitatively more important in accounting for deindustrialization in the OECD taken as a whole, our empirical results – based on panel data for 15 OECD advanced countries from 1970 to 2006 – nevertheless show that global exchanges have the potential to affect significantly and substantially a country's sectoral patterns of employment. They also suggest that the contribution of globalization, and especially of growing North-South integration, to deindustrialization in advanced countries may be revised upwards when resorting to better-suited indicators of trade.

1. Introduction

Structural change or structural transformation is often defined as the reallocation of economic activity across the three broad sectors agriculture, manufacturing and services. It has been the object of rising interest in the scientific literature over recent decades. The surge of interest in structural change has relied, at least partly, on the numerous issues and concerns raised by the deindustrialization process that has affected the most economically successful countries since the last third of the 20th century. Thus, deindustrialization has very commonly been associated with social troubles (e.g., Bluestone and Harrison, 1982) and relative economic decline, and blamed for leading to massive unemployment (e.g., Kollmeyer, 2013) and inferior growth (e.g., Kitson and Michie, 2014). In line with this view, the alarming hypothesis of deindustrialization as the main factor responsible for current slower economic growth in the developed world – which some economists believe to be the onset of a "secular stagnation" – has gained in popularity over recent years as the manufacturing share of total employment is reaching lower and lower levels. As shown by Palma (2014), advanced OECD countries began deindustrializing in the late 1960s. For instance, the share of manufacturing in total employment declined from 28.2% to 15.6% in the EU15 between 1970 and 2007, while it decreased from 22.4% to 9.9% in the United States (EU KLEMS Database – O'Mahony and Timmer, 2009). In 2015, it is estimated to amount around 8.9% and 12.5% in the United States and the EU15, respectively.[1]

Does deindustrialization matter for economic growth? From a theoretical point of view, the impact of structural change on economic growth depends on whether growth is "sector-indifferent" (Palma, 2014). Thus, in line with the pure Kaldorian tradition,[2] if manufacturing is believed to have some special properties that make it instrumental for growth, then the drop in manufacturing activity is likely to be harmful for growth. As noted by Tregenna

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[1] The data for the EU15 is from Eurostat. The data for the US is from the Bureau of Labor Statistics (BLS).

[2] The Kaldorian tradition attributes growth-enhancing characteristics to manufacturing activity. They include a.o. dynamic economies of scale, strong backward and forward linkages, strong properties of learning by doing as well as strong innovation and technological progress (Tregenna, 2011).

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(2009), this is especially true if both (relative) manufacturing employment and (relative) manufacturing output – i.e. not only (relative) manufacturing workforce – are declining, as the Kaldorian processes operate through both employment and output.[3] To the extent that the existing evidence provides some support for the role of manufacturing as an engine of growth, deindustrialization would be of great concern from a growth perspective (Tregenna, 2011).

In reality, the study of deindustrialization really took off in the 1980s as both the scale and regional consequences of economic restructuring and job losses in manufacturing became much more apparent and tangible – especially in the UK and the US – thus contradicting Lawrence's (1983) early claim that deindustrialization was a myth (Strangleman and Rhodes, 2014). As part of the large research agenda, a strand of literature has been devoted to identifying the economic forces behind deindustrialization. Though this research question calls for specific considerations, it is actually part of a larger discussion on the determinants of structural change. Thus, theoretical literature has identified various channels through which structural change – and hence deindustrialization – can take place in market economies. Accordingly, the factors potentially responsible for deindustrialization range from preferences (e.g., Kongsamut et al., 2001; Foellmi and Zweimüller, 2008; Comin et al., 2017) to technology (e.g., Ngai and Pissarides, 2007; Acemoglu and Guerrieri, 2008; Alvarez-Cuadrado et al., 2017). They also include elements about input-output (or inter-sectoral) linkages (e.g., Berlingieri, 2014) and globalization and trade (e.g., Matsuyama, 2009 and Uy et al., 2013). While these factors now seem to be relatively well understood on theoretical grounds, a number of empirical issues still remain wide open. For instance, the relative contribution of the economic forces behind the process of deindustrialization observed in most affluent countries is not well established in the literature. More particularly, the role and relative importance of the "internal" and "external" factors – i.e. those linked to globalization and trade – is still very far from being consensual. As argued by Kollmeyer (2009), this is partly because most previous empirical research on deindustrialization has either ignored one or more of the main explanations of deindustrialization altogether or has simply failed to test all of them simultaneously. In addition to this potential omitted variable bias, we argue that the usual measure of globalization in previous studies is inaccurate and can, therefore, lead to misleading results. Adapting the usual measure of globalization to better capture the (relative) contribution of globalization to deindustrialization, this study – based on panel data for 15 OECD countries from 1970 to 2006–shows that international exchanges have the potential to affect significantly and substantially a country's sectoral patterns of employment, and that the direct contribution of trade – especially trade with developing nations – to deindustrialization in advanced countries may be revised upwards.

The remainder of this paper is organized as follows. Section 2 defines deindustrialization and gives evidence of the decline of relative manufacturing workforce in advanced countries since 1970. Section 3 explores the factors identified as 'causal' in the occurrence of deindustrialization by the theoretical literature on structural change. Section 4 briefly reviews previous empirical research on the economic forces behind deindustrialization and their relative importance. Section 5 provides a description of the data and discusses our empirical methodology. Empirical results are presented in Section 6. Section 7 gives some concluding thoughts and remarks.

2. Deindustrialization: definition and empirical evidence

2.1. What is deindustrialization?

Nowadays deindustrialization is commonly defined as the decline of the share of manufacturing in a country's economic activity. The most common measures of activity at sectoral level are employment and value added, two production-side measures, and consumption (Herrendorf et al., 2014). Although the different measures of deindustrialization exhibit very interesting features, the employment-based measure of deindustrialization is, by far, the most studied in the scientific literature. This is likely due to the fact that manufacturing employment is the most visible measure of the size of manufacturing in any country, the one that tends to drive public perceptions of the issue. It is also arguably the most interesting question from a social perspective, especially when concerns about deindustrialization are based on the cost of adjustment across sectors.

2.2. Evidence for currently rich countries

In the course of economic development, virtually all advanced countries have followed broadly similar qualitative patterns of structural change (Rowthorn and Coutts, 2004, 2013). In particular, the growth of GDP per capita has been accompanied with a fall in the share of agriculture in national employment, and an increase in the share of services. As shown in Fig. 1, which spotlights the evolution of relative manufacturing employment for a set of selected European countries[4] and the US from the GGDC 10-Sector Database (Timmer et al., 2015), manufacturing has moved on a different trajectory as its employment share follows a hump shape, that is, it is rising for lower levels of economic development, a process known as "industrialization", and decreasing for higher levels of economic development. The decreasing part of this trajectory refers to the process of "deindustrialization", a phenomenon which has particularly affected most advanced countries since the last third of the 20th century.

Fig. 2 puts a specific emphasis on deindustrialization using the EU KLEMS Database (O'Mahony and Timmer, 2009) that provides comparable data for a larger set of advanced countries between 1970 and 2007. Thus, it can be observed that the manufacturing share of employment and nominal value added has declined in advanced countries since 1970. By way of illustration, the manufacturing share of employment decreased from 28.2% to 15.6% in the EU15 between 1970 and 2007, while it dropped from 22.4% to 9.9% in the US. Over the same period, the manufacturing share of nominal value added declined from 26.6% to 18.1% in the EU15, while it dropped from 23.5% to 13.1% in the US. As shown in Appendix A, the UK is the country that seems to have been the most affected by deindustrialization, with an absolute variation in the manufacturing share of employment and nominal value added equal to respectively −21.4% (from 33.2% to 11.8%) and −21.7% (from 34.2% to 12.4%). Partly because of the large growth of financial services, Luxembourg is however the country that experienced the strongest decline in the manufacturing share of nominal value added, which fell by 32.5% (from 41.1% to 8.6%).

While Fig. 2 clearly reveals a deindustrialization process in the developed world over the last few decades, it remains to be seen whether the decline in the manufacturing share of nominal value

[3] Arguing in favor of defining deindustrialization in terms of a decline in both manufacturing employment and manufacturing output, Tregenna (2009), for instance, notes that a decline in (relative) manufacturing employment which is mostly accounted for by falling labor intensity of manufacturing would not necessarily have a negative impact on growth.

[4] The selection of European countries is driven by the availability of data in the GGDC 10-Sector Database.

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