



Is growth of services an obstacle to productivity growth? A comparative analysis

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ABSTRACT

The relationship between economic structure and productivity growth has been a subject of increasing interest over recent decades. The innovative focus of this paper concerns the role of the service sector in this relationship. Services play a core role in advanced economies, both from a quantitative and a strategic point of view. However, empirical research in this area lies considerably behind the research into the agricultural and manufacturing sectors. This paper focuses on the impact of tertiarisation on overall productivity growth, using a sample of 37 OECD countries in the period between 1980 and 2005. The results partially refute traditional knowledge on the productivity of services. Contrary to what conventional theories suggest, this research demonstrates that several tertiary activities have shown dynamic productivity growth rates, while their contribution to overall productivity growth plays a more important role than was historically believed.

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1. Introduction

The relationship between economic structure and productivity growth has been subject to much attention over recent decades. Although there has been a growth in interest and recent attempts at modelling, this is not a new line of research and the role of structural change in economic growth and productivity has been recognized since the studies of A. Smith and D. Ricardo. Previous studies have traditionally focused on two processes¹: ‘deindustrialisation’ which started with the economic crisis of the 1970s (OECD, 1975; Blackaby, 1978; Gemmill, 1982); and ‘tertiarisation’ or the creation of a services society (Chenery and Taylor, 1968; Bell, 1974; Fuchs, 1968; Lanciotti, 1971). Some of these authors considered that

the changes involved in a transfer of labour from sectors with low productivity to other more dynamic sectors constituted one of the main reasons for overall productivity growth (see, for example, Kuznets, 1966). In this regard, from the first work of Fourastié (1949) and, particularly in Baumol (1967), a part of economic literature has maintained the thesis that the growth of services in the development processes, together with the low productivity in these types of activities as compared with the manufacturing industries, results in a clear disadvantage for future growth (Baumol et al., 1985; Borjk, 1999; Wolff, 1985; Bonatti and Felice, 2008).

The novelty of this paper is the focus on the role of the services sector in the relationship between economic structure and productivity growth. Despite the quantitative and strategic weight of service activities in advanced economies, empirical work on services seems to lag behind the research on other industries. The literature focused mainly on the shift from agriculture to manufacturing or the impact of specialisation and structural change within manufacturing on productivity growth.

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¹ For further information, see Siniscalco (1985).

The main hypothesis of this paper is that structural changes, and particularly the growth of services, plays a role in productivity growth. The second hypothesis is that the scope for advances in productivity differs significantly across services branches. The first hypothesis is based on the transfer of surplus labour from less productive sectors to more productive sectors, which boosts the growth of overall productivity. To the contrary, structural changes could also slow down productivity growth if the reallocation of resources is towards those branches where productivity growth is low. In relation to the second hypothesis, recent studies have demonstrated that several services branches are not unproductive and they do contribute positively to the overall productivity growth of advanced economies.²

This paper concentrates on the analysis of the relationship between tertiarisation, structural change and productivity growth between 1980 and 2005. After initially contemplating the theoretical approach to the relationship between structural change, the services sector and productivity (Section 2), the remainder of the paper is organised in the following manner. In Section 3, labour productivity growth in the European Union countries and the United States is analysed by means of a conventional shift–share analysis. Although the results are largely consistent with other contributions in the literature at a more aggregate level (Van Ark, 1995; Peneder, 2003; Havlik, 2005), the examination of individual contributions through diverse branches of the services industry provides some interesting details. Section 4 then provides panel econometric estimations of cross-country growth regressions in a broad sample of OECD countries, together with indicators of services growth. The final section provides a brief summary and conclusions.

2. Service activities, structural change and productivity growth in recent literature

The relationship between the economic structure of a country and its overall growth of productivity has been one of the main political–economic focal points in recent decades. Despite the growing interest in this topic and the originality of some of the models recently presented, the idea that productive structure and the changes in its pattern influence growth is as old as the economy (Reinert, 1993, 1995). The first papers on this subject³ (see, for example, Salter, 1960; Denison, 1967; Chung and Denison, 1976) were followed by those focusing on the manufacturing sector (Young, 1995; Dalum et al., 1999; Fagerberg, 2000; Timmer and Szirmai, 2000; Carree, 2003; Hölzl and Reinstaller, 2007; Krüger, 2008).

Despite this progress, the services sector has not been analysed empirically as extensively as would have been

expected given its dominant role in highly developed countries. One of the most controversial topics in recent decades has been the extraordinary increase in the weight of services in advanced economies and its challenges and policy implications (Rubalcaba, 2007). An important question is whether this greater weight of the services sector affects the performance of overall productivity or not. This has not been dealt with empirically in the depth required, except for some papers such as those carried out by Dutt and Lee (1993) and Wilber (2002). The objective of this paper is to try to fill this gap and contribute to the debate on productivity in the services sector.

Some of the most inspiring opinions on the relationship between the progressive growth of services in advanced economies and their low productivity were given by Baumol (1967, 1985, 1989)⁴ and his well-known ‘cost disease’. Using the nature and characteristics of the labour force employed in services to explain differences in productivity among industries, these theories concluded that economic growth and the overall productivity growth of ‘services’ economies would lead to a deceleration. Fig. 1 shows aggregate evidence for a wide group of OECD countries. A negative relationship⁵ can be seen between the overall productivity growth rate of the economy (both in terms of labour and hourly productivity) and the weight of the service sector (in terms of employment and total hours worked). Those economies showing a higher growth of productivity are also those in which the services sector continues to occupy a lower percentage of the total, as occurs in the case of Korea, Ireland and various new members of the EU. On the contrary, countries with a high percentage of services in total production and employment, such as the US, Canada, the Netherlands or France, register lower productivity growth rates.

Logically, the latter affirmation is based on the hypothesis of low productivity growth in the services sector. However, as mentioned in Section 1, in recent years this hypothesis has been refuted in a substantial number of empirical papers. Baumol (2002) rectified and clarified his position by admitting that it is necessary to distinguish between different types of services and stressed the role of innovation and technology in the evolution of services.⁶

Other authors (Triplett and Bosworth, 2003) have also criticised the traditional theories on the services sector and even believe they have found the ‘cure’ for Baumol’s cost disease. Generally speaking, criticism and revision are based on the following components (Rubalcaba and Maroto, 2007): the need to take into account the indi-

⁴ Other contributions can be quoted although they have had less impact, such as De Bandt (1991) or Nusbaumer (1987).

⁵ Specifically, the correlation coefficient in the case of employment is -0.5223 , significant to 1% (p -value = 0.0040). Results are robust if the weight of the service sector is measured in terms of value added. Then, the correlation coefficient is -0.5838 , also significant to 1% (p -value = 0.0015).

⁶ According to Baumol, only a third of the services sector could qualify as having ‘slow productivity growth’ activities, while the rest include branches of activity which have growth rates which are similar or even higher than those of the manufacturing sector.

² See Oulton (1999), Baumol (2002), O’Mahony and Van Ark (2003), Triplett and Bosworth (2004), Wölfl (2003, 2005), Bosworth and Triplett (2007), Maroto and Rubalcaba (2008), among others.

³ For a collection of these, see Fagerberg (1994).

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