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The incorporation of structural change into growth theory: A historical appraisal

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Abstract

3 Q1 4 Q2

Despite being an empirical fact that structural change is an inseparable companion of the growth process, it appears as if growth theorists have relegated it to a secondary role. One of the reasons for this apparent neglect is undoubtedly the difficulty of dealing with the issues of sectoral dynamic and structural change within the framework of analytical models. A second reason derives from 10 the fact that for a long time the analysis of growth, from a theoretical perspective, has focused predominantly on aspects of supply and 11 technical progress, leaving the analysis of demand and consumption evolution, crucial for the understanding of structural change, 12 aside. The present paper provides an overview of some of the main works in modern growth theory and appraises the introduction 13 of the subject of structural change into the analysis of economic growth. The exposition elucidates the sources and effects of the 14 process of structural change and surveys some of the recent literature from different schools of thought that integrates structural 15 change into their analysis, commenting on their main features and contributions. 16

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22 1. Introduction

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Although the process of economic growth might seem stable in the aggregate in the long-run, in historical perspective, the decline of the agricultural sector and the expansion of the industrial and the service sectors have led to a massive transformation of the economic landscape. The change in the relative importance of these three broadly defined sectors (agriculture, manufacturing, and services) that have accompanied the process of economic growth is one way to narrowly define structural change. However, structural change is a broader economic process that encompasses changes in the

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structure of production and employment within and between all sectors¹ of the economy as well as the emergence of new sectors and the disappearance of old ones.

The process of structural change have been documented by many authors. Fischer (1939), Clark (1940), Kuznets (1957) and Chenery (1960) are among the first ones to document it. Most of these early works were predominantly empirical without a deeper theoretical explanation regarding the sources and consequences of structural change. One early attempt to theorize the process of structural change was made by Clark (1940). In his work, Clark related the observed shifts in sectoral resources to two elements: differential productivity growth and Engel effects. By identifying these two elements, Clark laid down the basic theoretical relations that later would become the base of the theory of structural change (Syrquin, 1988, 213).

Perhaps the two early authors most cited for their work on structural change are Simon Kuznets and Luigi Pasinetti. Despite following different approaches,² these authors are praised for having emphasized the relevance of the role of structural change in the process of economic growth. Simon Kuznets,³ in particular, documented and analysed the process of structural transformation showing it to be an integral part of modern economic growth. His analysis gave rise to a broader search for uniform features or "stylized facts" of development and growth.

In his Nobel lecture, Kuznets summarized six characteristics of modern economic growth that emerged from his 42 analysis based on conventional measures of national product and its components: population, labour force, and the 43 like. The third of his six characteristics states that "the rate of structural transformation of the economy is high. Major 44 aspects of structural change include the shift away from agriculture to nonagricultural pursuits and, recently, away from 45 industry to services." (Kuznets, 1973, 248). Kongsamut et al. (2001) termed these empirical regularities the 'Kuznets 46 facts' in analogy to the stylized facts established by Kaldor (1961). Luigi Pasinetti laid out his theory of structural 47 change in two books published in 1981 and 1993: Structural Change and Economic Growth (1981) and Structural 48 Economic Dynamics (1993). His theory will be analysed in more detail in Section 5. 49

In another important contribution, Maddison (1987) documented the same sort of regularity observed initially by 50 Simon Kuznets. Maddison described the reallocation of labour in six major industrialized countries (France, Germany, 51 Japan, Netherlands, U.K. and U.S.) showing that the average employment share in agriculture was 46.0% in 1870 52 and fell to 5.5% by 1984. During the same period, the average employment share in the service sector increased from 53 26.4% to 62.2%. The most commonly observed pattern of structural change is characterized by a systematic fall in 54 the share of labour allocated to agriculture over time, by a steady increase in the share of labour in services, and by 55 a hump-shaped pattern for the share of labour in manufacturing. Herrendorf et al. (2014) reported evidence of this 56 pattern for currently rich countries.⁴ 57

⁵⁸ Despite appearing to be an obvious feature of empirical growth, structural change has not been fully integrated into ⁵⁹ the analysis of the growth process yet. There are some reasons that may explain why structural change has not being ⁶⁰ made part of growth theory. One of these reasons is the fact that many of the early models of growth were based on ⁶¹ aggregate variables. While this approach highlights important aspects of the growth process, it is unable to analyse ⁶² the driving forces of structural change. In order to incorporate structural dynamics into growth models, multi-sector⁵ ⁶³ models become necessary. Luigi Pasinetti recurrently pointed out the limitations of aggregate models. He has argued ⁶⁴ that,

Technical progress, productivity, consumption, investment, are no longer sufficient to define the economic system in a dynamic research. We must go beyond this, and find out what lies behind the façade of these aggregate expressions. In short, the research must be formulated in disaggregate terms. (Pasinetti and Spaventa, 1960, 1770).

A second reason is the fact that for a long time the analysis of growth has focused predominantly on aspects of supply and technical progress, leaving the analysis of demand and consumption evolution, crucial for the understanding

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¹ In the literature, a sector is often equivalent to an industry. Thus, it is possible to say that the manufacturing sector is composed of several manufacturing industries.

 $^{^{2}}$ For more on the distinction of the two approaches refer to Syrquin (2012).

³ Kuznets (1966) documented the process of structural change for 13 OECD countries and the USSR between 1800 and 1960.

⁴ Belgium, Finland, France, Japan, Korea, Netherlands, Spain, Sweden, United Kingdom and United States.

⁵ The term 'multi-sector' refers here primarily to the assumption of multiple consumption sectors/goods.

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