The role of industrial and exchange rate policies in promoting structural change, productivity and employment

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3.1 Introduction

In mainstream economic theory the issue of employment is usually discussed in terms of a natural rate of unemployment and "distortions" in the labour market through institutions such as minimum wages, unemployment benefits and strong labour unions. However, developing economies whose labour market institutions are often weak or are ineffective outside the formal economy have experienced long periods of high unemployment. Furthermore, countries where labour unions greatly lost influence – as in Latin America in the 1970s and 1990s – nevertheless experienced rising unemployment (Stalling and Peres, 2000). Therefore, it is necessary to look at other variables when exploring the issue of employment.

In addition, most developing economies have a large surplus of labour in the subsistence sector or in sectors with extremely low levels of productivity (underemployment).¹ They are "dual" economies in Lewis' sense, or at least they comprise labour market segments with productivity levels close to subsistence level. These models view economic development as a process of moving labour from low- to high-productivity segments. The engine that draws labour out of the subsistence sector is structural change (Cimoli, 1988; Cimoli and Porcile, 2011; ECLAC, 2007; McMillan and Rodrik, 2011). Countries need to transform the production structure, that is, create new sectors and technologies that generate more productive and better jobs.

¹ This is the starting point of ECLAC's structuralist theory (Prebisch, 1950).

This chapter argues that job creation and the reduction of underemployment critically depend on the diversification of the production and export structures. Here, diversification is taken to mean developing and expanding sectors that are more dynamic in a Keynesian and Schumpeterian sense (KS dynamic), i.e. they show higher rates of demand growth and more opportunities for technical change.² Two variables that determine the diversification process will be highlighted: the real exchange rate (RER) and industrial and technological policies (ITPs). The RER is defined as the price of foreign goods in terms of domestic goods. Therefore, a high RER, reflecting a depreciated domestic currency, implies more competitiveness. In recent years the literature has clearly established the importance of the RER in structural change and growth.³ As for ITPs, this chapter defines them in a very broad sense, including all measures that create incentives in favour of certain sectors and in favour of technological change. Although the idea that successful catching up requires active ITPs has only gradually reached mainstream economics, this is an old, well-established point in the tradition of economic history and heterodox growth theory.⁴

This chapter discusses the trajectories of four Latin American economies – Argentina, Brazil, Chile and Mexico – between 1970 and 2008 and compares them with that of a successful catching-up economy, the Republic of Korea. These four economies have been chosen because they represent a significant share of Latin America's total gross domestic product (GDP) (81.6 per cent in 2008⁵); they also illustrate the diversity of experiences in economic policy in the region. First, trends in production, employment, productivity and structural change are discussed for the manufacturing sector. Then, the evolution of these variables is studied for the whole economy.

A caveat is necessary. Manufacturing is the starting point because it has been, as is generally acknowledged, a privileged locus of learning, accumulation of

² Dosi, Pavitt and Soete (1990) define sectors with Keynesian or growth efficiency and Schumpeterian efficiency in terms of the dynamism of demand and of technology, respectively. Usually, there is a large overlap between these two categories. Of course, some countries may just have good luck in the "commodity lottery" (Díaz-Alejandro, 1983) and perform well (for some time) in the international economy without building technological capabilities, but this is not the rule in economic history. Evidence of a positive relation between export diversification and growth can be found in Saviotti and Frenken (2008); Hausmann, Hwang and Rodrik (2007); and Agosín, Alvarez and Bravo-Ortega (2012).

³ The literature is extensive; see, for instance, Frenkel (2004); Pacheco-Lopez and Thirlwall (2006); Bresser-Pereira (2008); Eichengreen (2008); Freund and Pinerola (2008); Rodrik (2008); Razmi, Rapetti and Skott (2009); and Rapetti (2011). Early contributions are Baldwin (1988), and Baldwin and Krugman (1989).

⁴ See Amsden (1989); Reinert (1995); Bell (2006); Cimoli and Porcile (2009 and 2013); and Ocampo (2011).

⁵ Based on ECLACSTAT, Latin America and the Caribbean, by economic activity.

technological capabilities and diffusion of technology to the whole economic system – at least for most of the period addressed in this chapter. In the postwar years, to catch up and to promote structural change in developing economies has largely meant to industrialize. While other sectors play an important role in development and production of externalities, it will be argued here that a rising share of technology-intensive activities in manufacturing is a good proxy for the process of learning in the whole economy. Manufacturing does not monopolize learning, but it tracks well the learning process in a developing economy. In addition, along with construction and services, manufacturing is responsible for a substantial share of total employment. What happens to employment in manufacturing has significant repercussions for employment and productivity in the rest of the economy.

The remainder of the chapter is organized into three sections. Section 3.2 briefly presents a theoretical framework for discussing the interactions between technology, structural change, demand growth and employment growth in developing economies. This framework provides the basis for a typology of patterns of growth. Section 3.3 offers empirical evidence of different trajectories of growth, productivity and employment in manufacturing under different scenarios defined by macro policies, ITPs and external shocks. Section 3.4 identifies growth patterns for the whole economy. Section 3.5 offers concluding remarks.

3.2 Employment, structural change and growth in developing economies

3.2.1 Demand, productivity and structural change regimes

This section discusses the interactions between employment, patterns of specialization and the growth of effective demand (a formal discussion can be found in the Appendix). At one level the evolution of unemployment depends on the difference between the growth rates of GDP and of labour productivity. At another level, GDP growth is frequently constrained by external disequilibrium or balance of payments (BOP) constraints, particularly for countries specialized in low-tech commodities. These countries have a low income elasticity of demand for exports and a high income elasticity of demand for imports. As a result, the deficit in the current account as a percentage of GDP tends to rise when economic growth accelerates. Such a situation is not sustainable in the long run, and hence the country is forced to reduce its rate of growth in order to curb external disequilibrium. Productivity growth is determined by changes in the RER, economic growth and structural change. The RER influences productivity growth for two reasons. First, in developing economies a significant share of total investment in capital goods is imported. Therefore, a fall in the RER reduces the price of these goods and accelerates the replacement of earlier vintages of equipment. Second, a lower RER heightens competitive pressures in domestic and external markets.⁶ Foreign goods will be cheaper, and domestic firms will have to invest more in technology than when they are "protected" by a high RER. In the analysis below, increases in productivity also come from learning-by-doing and depend positively on the rate of economic growth, a relationship referred to as the Kaldor–Verdoorn law.

Structural change, a key factor determining productivity growth, is closely associated with the diversification of production, increasing returns, new skills and capabilities and various knowledge spillovers that a more complex economic structure makes possible.⁷ Structural change also depends on the RER and productivity growth in various other ways. The RER and productivity determine unit labour costs of production in each sector. An increase in the RER and/or productivity growth allows domestic firms to break in and compete in new sectors, and it promotes both export diversification and import substitution.

Together, effective demand, productivity and structural change define the parameters that describe different growth typologies and how changes in policies and external conditions affect growth prospects and employment. The RER is influenced by the combination of macroeconomic policies, external shocks in lending and the terms of trade. Although the RER is not fully controlled by the government, it is assumed that macro policies do have an influence on this variable.

3.2.2 The three regimes and emerging patterns of growth

There are various possible combinations of the demand, productivity and structural change regimes in equilibrium. These combinations define different scenarios, which are in turn directly related to macro and industrial policies. Four scenarios will be highlighted that represent different growth and employment paths found in developing economies (table 3.1), although other combinations are possible. These scenarios correspond to the four scenarios suggested by Ocampo (2005) in terms of structural dynamics and may be seen as a complement to his typology.

⁶ See Blecker (1999).

⁷ See, for instance, ECLAC (2008) and Dosi, Lechevalier and Secchi (2010).

Employment growth (z)	Productivity growth (a)	
	Fast productivity growth	Slow productivity growth
Fast employment growth	I Virtuous circle – Strong demand regime – Strong productivity regime – Strong structural change regime	II Labour absorption – Strong demand regime – Weak productivity regime – Weak structural change regime
Slow employment growth	III Defensive rationalization – Weak demand regime – Strong productivity regime – Weak structural change regime	IV <i>Vicious circle</i> – Weak demand regime – Weak productivity regime – Weak structural change regime

Table 3.1 Growth in productivity, employment and structural change: alternative scenarios

- The first scenario is the **virtuous circle**, represented in panel I of table 3.1. This scenario emerges from macro policies that focus on competitiveness and strong ITPs, generally in a context of expansion of the world economy. A competitive RER and structural change spur economic growth. The positive effect of structural change on the growth of exports (or on reducing the growth rate of imports) boosts the rate of growth of labour demand compatible with external equilibrium. For this positive effect on labour demand to occur, the impact of structural change on demand growth must exceed its impact on productivity growth.⁸ At the same time, productivity growth is positive and rapid because spillovers and externalities produced by structural change largely overcome the drag on technical change arising from a depreciated RER.
- The second scenario is driven by **labour absorption**, represented in panel II of table 3.1. This scenario is produced by a macro policy that stresses competitiveness, while ITPs are absent or weak. Structural change is very slow, but a depreciated RER sustains demand growth. As a result, employment grows. However, productivity growth slows as a high RER raises the costs of capital goods and increases monopoly power of domestic firms. The difference between this scenario and the previous one lies mainly in the specific role of ITPs. In the first scenario active ITPs closely link the diversification

⁸ Formally, y'(z) > a'(z) (see Appendix).

of production to productivity growth and thereby compensate for the negative impact of the RER. In the second scenario the RER effect prevails due to weak spillovers and limited learning. A weak industrial policy is a policy that does not provide incentives to shift into economic activities that generate externalities, increasing returns and the absorption of new technologies. This lack of support may be the result of negligible transfers of resources to dynamic activities; weak differential incentives that are unable to counteract path dependence that reinforces static comparative advantages; the transfer of rents to industries or firms that lack clear targets and objectives; and the failure to build up infrastructure and human capital and other requirements for catching up with the technological frontier (Cimoli, Porcile and Rovira, 2010).

• The third scenario is related to macro policies or external shocks that increase the RER. In the case of external shocks, such increases may stem from easy lending in international capital markets or from rising terms of trade. The appreciation of the RER leads to **defensive rationalization** as the main competitive strategy and to losses of capabilities, as some sectors cannot survive. This is shown in panel III of table 3.1. A paradox may emerge in this situation, in which productivity growth accelerates while the specialization pattern moves towards low-tech commodities. The process of job destruction advances faster than job creation, and unemployment increases. The corollary of this is that productivity may significantly increase in some sectors in a context of slow growth of aggregate demand and growing unemployment in the aggregate. Labour is reallocated towards non-tradables, largely to service activities with low labour productivity.

Some policy-makers may see this scenario as a healthy process of moving back to comparative advantages and to what the economy does best. They may welcome such a combination of slower employment growth and faster productivity growth, particularly if they are concerned primarily with inflation.⁹ However, there is a significant risk of trading long-run productivity growth for short-run productivity growth. In the long run the loss of technology-intensive sectors would harm productivity growth. In other words, the adverse impact of RER on learning may be important in the short run, while adverse *structural* effects become increasingly important in the long run (see Lima and Porcile, 2013).

⁹ It is necessary also to distinguish between appreciation of the RER arising from better terms of trade and appreciation arising from easy lending. The former may be associated with high rates of demand growth, pushed by booming exports; the latter is more likely to produce slow economic growth.

• The fourth scenario is a **vicious circle** of falling productivity and employment, shown in panel IV of table 3.1. Aggregate demand stagnates or falls even with a competitive RER, either because the country is heavily indebted and has to use most of its foreign exchange to service the debt (it becomes a net exporter of foreign exchange) or because there is a large negative shock in the terms of trade that heightens the external constraint on growth. Decline in the role of structural change and loss of productivity growth reinforce each other and stifle the efforts of the country to escape from the vicious circle using the RER. Only some exogenous intervention alleviating the burden of the external constraint (through either a default on the debt or a favourable renegotiation of its terms) would be effective in this scenario.

The next section presents these scenarios in the productivity-value added plane to discuss how they relate to employment growth.

3.2.3 Combining demand side and supply side variables

The scenarios described above can be seen in terms of the co-evolution of labour productivity (*A*) and aggregate demand/production (*Y*) (figure 3.1; see also Cimoli and Porcile, 2009). In the *AY* space point *D* indicates the prevailing levels of productivity and income at t = 0; ND indicates the level of employment; and the ratio 1/ND corresponds to the slope of the line drawn from the origin to point *D*.¹⁰ Different trajectories in productivity versus aggregate demand (and hence employment) from t = 0 to t = T are described by the curves from *D* to *E*, *F*, *G* and *H*. These trajectories are related to how the country combines demandside and supply-side interactions – which, as mentioned, depend on specific combinations of macro policies and ITPs as well as on external shocks.

Consider, for instance, the virtuous circle scenario, in which ITPs aim at strengthening technological capabilities and changing the pattern of specialization towards high-growth sectors, while the macroeconomic policy sustains both a high and stable RER and the expansion of autonomous expenditure consistent with external equilibrium. This virtuous circle will take the economy – after time T – from point D to point E. The labour market will increasingly enhance the bargaining power of workers, as the rate of employment rises and real wages tend to move upwards as well.

¹⁰ This ratio multiplied by the productivity level gives total product and total aggregate demand.



Figure 3.1 Alternative patterns of productivity

In the labour absorption scenario, the RER and the expansion of world trade sustain effective demand, but structural change and learning advance at a much slower pace. After the same period T, the economy will be at point F rather than at point E, as in the virtuous circle scenario. This pattern of growth is reflected in horizontal shifts in figure 3.1, with labour productivity contributing slightly to growth (labour absorption only). The management of the demand side favours growth, but there is not enough learning to reduce the gap with the international technological frontier (weak ITPs). Employment grows, but jobs will be of lesser quality in this scenario. This also means that the demand for qualified labour will be feeble, which in turn implies almost no incentives to train and educate the workforce.

The scenario of defensive rationalization reflects a context of RER appreciation and lack of ITPs. Such a trajectory is represented by the curve from point D to point G, driven by RER effects on productivity and falling employment. In this case there is a strong initial jump in productivity – due to a short-lived investment spike based on imports of capital and intermediate goods – but it soon recedes. Moreover, if the appreciation of the RER leads to deficits in the current account, a

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