Market-oriented reforms, cycles of destruction, creation of production capacity and building up of domestic technological capabilities

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Abstract

This article discusses some of the implications of the market-oriented reforms and the rapid pace of globalisation of the world economy in the 1990s for industrial technological capability building in Latin America. On the one hand, such changes have permitted much better macroeconomic management, allowing governments to curb inflation, and to deal with recurrent fiscal and balance of payments imbalances. These reforms and the process of globalization have also induced the inception of a modern sector of production which has managed to incorporate many new computer-based production organisation technologies and to attain rapid progress in the use of ICTs. New sectors of economic activity have emerged in the economy, many of which now lead in terms of international competitiveness.

Key words: market oriented reforms; globalization; Latin America competitiveness.

1. The regional scenario after market-oriented structural reforms

For more than three decades now – at different times and with varying degree of success - Latin American countries have opened up their economies to foreign competition, de-regulated markets, and privatised economic activities. Said actions, that are normally referred to as market-oriented structural reforms, involved a major departure in policy regime from the 'inward-oriented' and state-led' regime, that prevailed since the immediate post-war period. The new regime – together with the rapid process of globalisation of the world economy that was accelerated during the 1990s – induced a major transformation of the economic, institutional and technological scenario in every country in the region. Beyond any doubt, we can say that Latin American countries have gradually moved into a new model of institutional and socio-economic functioning, which has significantly affected growth, international competitiveness, equity and the development of domestic technological capabilities.

Contrary to what policy makers and academic economists thought at the time such reforms started to be proclaimed (Krueger, 1974, Williamson, 1990), and considering first the aggregate picture of the region as a whole, with the benefit of insight we now know that the impact has been less positive than *a priori* expected. This is clearly the case if we consider growth rates of GDP and GDP per capita - as compared with the 1960s and 1970s – and it is also the case if we look at international competitiveness, the capacity of the economy to create new jobs and the degree of equity with which the benefits of the transition to a more open and de-regulated policy regime have been distributed among different walks of society.

As far as domestic technological capabilities are concerned we notice that, as a result of the destruction and creation of production capacity in the economy, the stock and flows of said capabilities have suffered a major transformation. Engineering and product design capabilities have contracted in, say, the metalworking sector, involved in the production of automobiles or machine tools, as most plants have moved closer to the ´maquila´ type model of production organization, i.e. higher unit import content and assembly of imported parts and components. On the other hand, they have expanded in natural resource processing activities, such as it is the case of salmon farming and wine production in Chile, for example. An interesting, and a-typical case of

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expansion of a knowledge-intensive sector is that of airplanes design and construction in Brazil. Concerning sector-specific situations we shall have more to say further down this article.

In all of the above mentioned dimensions – GDP growth rates, productivity improvements, employment generation, equity and the expansion of domestic technological capabilities – the New Latin American Economic Model has performed worse than a priori expected. (Katz, 2000; Katz, 2004). Furthermore, and in spite of the region presently enjoying a period of bonanza - as a result of buoyant world demand, and high international prices for raw materials and natural resource-based industrial commodities (the 'China effect', we could call it) - it can be said that, as a result of an a-critical adoption of orthodox market principles, many countries in the region still lack an adequate long term growth strategy which could simultaneously bring them higher rates of economic expansion, less macroeconomic volatility, more competitiveness in world markets, more equity and a more vibrant expansion of domestic technological capabilities. And yet, without such a strategy – and a significant expansion of exports featuring higher domestic value added - it is difficult to see the region reducing the productivity gap it presently exhibits *vis-à-vis* more developed industrial nations, let alone significantly diminishing current high levels of unemployment and poverty.

New sectors of economic activity have emerged in the economy throughout the 1990s, while many 'old' activities have gradually been phased out. Labour expulsion from manufacturing and agriculture, and a rapid increase of the informal sector in the economy, took place in most Latin American countries during the 1990s. Different forms of capital intensive computer-based production organisation technologies have been introduced by the larger firms in the economy – many of them subsidiaries of multinational corporations (MNCs), or property of nationally-owned conglomerates – displacing 'old' – more labour intensive – production organization routines. Said transition has introduced a major labour-saving bias in the production structure, particularly among 'large' companies. On the other hand, as a result of the lack of finance or technological capabilities or as a consequence of imperfect understanding as to the new responses a more open and de-regulated economy demanded, most SMEs have not followed this same path. Thousands of them were forced to leave the market - estimates being that around 8,000 small and medium sized enterprises (SMEs) closed down in Chile and more than 12,000 did so in Argentina during the 1980s – while the large majority of the ones that remained in business found themselves 'lagging behind' 'large' firms as far as productivity growth and innovation is concerned.

Market-oriented reforms and the process of globalization of the world economy of the last two decades have triggered off a major Schumpeterian episode of 'creative/destruction' throughout the economy, significantly altering the domestic production structure. Many sectors of economic activity have contracted, or simply disappeared, while new ones have emerged. On the other hand, structural heterogeneity has increased as large firms have managed better to adapt to the incentive regime introducing computer-based production organization technologies which permitted them to expand productivity, while most SMEs have lagged behind, incapable to respond adequately to the new rules of the game.

Even though the reforms have not delivered what was *a priori* expected from them, in terms of an across-the-board improvement in economic performance, it is nevertheless true that in each and every country in the region a modern sector of economic activity has emerged over the last two decades. In said sector computer-based production organisation technologies have gradually been brought on board. The size of said sector, however, varies across nations – involving 30 to 40% of GDP in the richest countries in the region, and not much more that 5 to 10% in the poorest ones. Such sector exhibits above average labour productivity and features new production activities which were not present in the economy one or two decades ago, or were present in a much poorer production organization environment. Said sector includes: (i) natural resource processing activities carried out with modern ´state-of-the-art´ production technologies – such as genetically modified soya beans and vegetable oil in Argentina, salmon farming and wine production in Chile, fresh flowers in Colombia, and many others; (ii) high productivity service industries including banks, telecoms, energy and tourism; and (iii) a few technology intensive manufacturing activities, such as airplanes design and construction in Brazil or the assembly of vehicles and electronic equipment, mostly on the basis of imported intermediate parts and components, in the case of Mexico.

At variance with the above, however, average, country-wide, labour productivity has not improved much, particularly when we compare with more developed industrial nations, many of which managed to increase their rate of productivity growth during the 1990's, making the 'catch-up' process all the more difficult. The bottom line is that average labour productivity in Latin America still remains in the range of 20-50% of labour productivity in the United States, with Argentina and Chile in the upper part of the range and Ecuador, Paraguay and Bolivia in the lower one.

As mentioned before, the transition to a more open and de-regulated policy regime did not bring much improvement neither to the employment creation capabilities of the economy nor in the degree of equity with which the benefits of a more open and de-regulated economy have been distributed in society. Although the equity issue is not one which we shall examine in this paper it is important to recall here that most countries in the region live now with a higher rate of open unemployment – and a bigger informal sector – than that of the 1960s and 1970s. Additionally, as far as equity is concerned, a major deterioration can be noticed in the large majority of Latin American societies. In most countries in the region nearly 50% percent of the population – or even more in some cases - now lives in the vicinity of the poverty line, even though recent figures on the incidence of ´hard poverty´ - population living with less than two dollars a day – suggest that some progress has been attained on this front.

Although not dealing extensively here with issues of poverty and equity, we intend to return to such topics at the end of this article when dealing with the likely contents of a technology policy agenda for the future. Improving on equity involves fundamental technology questions in areas such as health and medical technology, environmental protection or access to information and communication technologies (ICTs), to mention just a few of the topics in which the ´social divide´, has become all the more noticeable in the region during the course of the 1990s.

In sum, market-oriented reforms, and the rapid pace of globalisation of the world economy in the 1990s, turned out to be a mixed blessing in Latin America. On the one hand, they permitted much better macroeconomic management, allowing governments to curb inflation, and to deal with recurrent fiscal and balance of payments imbalances. In addition to the above, the reforms and the process of globalization have also induced the inception of a modern sector of production which has managed to incorporate many new computer-based production organisation technologies and to attain rapid progress in the use of ICTs. New sectors of economic activity have emerged in the economy, many of which now lead in terms of international competitiveness.

The (small) fraction of society that belongs in said modern area of the economy receives much higher than average per capita income and has gradually developed consumption patterns comparable to those exhibited by the large majority of citizens in more developed industrial nations. Said sector, however, only comprises a fraction of each country's economy and labour force, variable across nations. For the individuals belonging in such fraction of society the question of whether or not 'convergence' with more developed industrial nations will take place in the future is not really a question, insofar as their life style is indeed similar to the life style of the average citizen of cities such as, say, Madrid or Rome. On the other hand, however, deeper and more intractable forms of social and economic exclusion have developed in society, higher levels of informality and open unemployment now prevail, and more vindictive social relations – resulting from a growing climate of frustration – have become widespread, making political governance an increasingly difficult proposition.

We conclude that opening up to foreign competition, de-regulating markets and privatising economic activities has not been a sufficient condition for Latin America countries to attain faster productivity growth, more international competitiveness, and a more vibrant development of domestic technological capabilities. The question remains open as to why this has been so.

Before actually addressing such question, however, we have to recognize that there is a widely shared believe both among specialists and in the daily press that the Chilean case is somewhat different from the global picture so far presented. I consider the Chilean case in the next section.

2. Is Chile different? If so, to what extent?

One of the very few cases in the region in which things have worked differently is that of Chile. At variance with the rest of Latin America, the Chilean transition to a more open and de-regulated policy regime plus the rapid process of globalisation of the world economy during the 1990s, induced a growth faster than that in the past, stronger international competitiveness and a significant reduction in absolute poverty (though not in relative income differentials, as measured by Gini's coefficient). Hand in hand with the above, and also at variance with the rest of the region, Chile's successful economic performance has come about in the context of an increasingly stronger institutional fabric and as part and parcel of a clear consolidation of political governance and democracy.

In effect, and after a major setback in its trade liberalization process in the early 1980s, Chile managed to maintain a rapid rate of economic growth for a rather long period of time – nearly fifteen years – posting an annual average rate of GDP growth of 7.5% between 1986 and 1998. Between 1998 and 2003 the Chilean growth process 'slowed-down' to around half of the previously mentioned rate. The low growth period lasted for nearly five years, after which a new revival in Chile's GDP growth rate – an in the rate of investment – came along, hand in hand with a significant improvement in Chile's export performance. Buoyant world demand for raw materials and natural resource based industrial commodities and historically high prices for copper explain a significant part of the recent revival of the Chilean economy.

The rapid growth of GDP of the 1986-1998 period permitted unemployment to be reduced from the high 27% level recorded in the mid-1970s, to somewhere in the region of 8 to 9%. In parallel, the rate of inflation was also reduced, to a low 2-3% per annum, with the fiscal and external accounts of the economy close to equilibrium. Macroeconomic uncertainty diminished quite considerably and the country's international risk rating improved as a result of that. FDI expanded sharply during those years, particularly in fields such as mining, telecoms, energy, retailing and banks, which became emblematic of the new direction taken by the Chilean production structure in the late 1980s and during the 1990s. The service sector and natural resources processing activities – such as mining, forestry, fisheries, and wineries - expanded rapidly, capturing numerous external markets. New sectors of economic activity opened up in the economy and the number of firms engaged in export activities grew by an order of magnitude.

Pari passu with the above, Chile attained a noticeable strengthening of its institutions receiving growing international recognition for that. Trade liberalisation agreements were signed with a large number of developed nations paving the way for further penetration in international markets over the next decade. For all of the above achievements Chile clearly stands out as an outlier within the regional scenario.

Given the above we can conclude that the answer to our previous question as to whether or not Chile has performed better than other countries in the region after the reforms is clearly positive. At an aggregate level, at least, the signs are that Chile has responded in a more adequate way than other Latin American countries to the new more open and de-regulated macroeconomic policy regime now prevailing in Latin America. When looked at a more micro level, however, various sources of frailty become apparent making the Chilean case look somewhat closer to other countries in the region. Let us briefly consider below some of said frailties.

First, the process of economic and institutional transformation, that we have previously mentioned, benefits an important fraction of the Chilean population – say, 50%, but leaves out important areas of the country's production and social structure which have not as yet managed successfully to make the transition to a more modern production organization environment. Socio-economic dualism is still an issue in Chile with which future generations of policy makers will have to wrest.

Second, and related to the above, wide productivity differentials prevail between those sectors of economic activity and firms that have successfully adapted to the new more open and de-regulated policy regime and those other ones which have not. Major fields of economic activity still face significant difficulties for the absorption of modern production technologies, this being the reason on account of which the country's average

labour productivity still appears as being about half of labour productivity in the United States. (Crespi & Benavente, 1998; Katz & Stumpo, 2001).

Third, and also consistently with the above, Chile still spends very little in R&D and technology-generation activities when compared with other ´catching up´ countries. In fact, Chile spends on said activities between one half and one quarter – as a percentage of GDP – of what South Korea or Singapore does. Available evidence indicates that said expenditure is in the order of 0.6% of GDP even in spite of the fact that the estimated rate of return on said expenditure has been shown to be well above the average rate of return on investment in the economy. Conscious of this fact, the Chilean Government is presently seeking to multiply R&D expenditure by a factor of three or four over the next few years.

Fourth, and as part of the same picture, Chile exhibits major difficulties in the creation and upgrading of human capital. In spite of the fact that expenditure in education and labour training has been significantly expanded as a percentage of GDP over the last two decades the results continue to be disappointing, if we are to judge by the outcome of standard international tests in language and mathematics which place the country below average OECD standards, close to Mexico, Turkey and Greece (OECD, 1993.).

Together with a highly inequitable pattern of income distribution, the above mentioned features of the Chilean economy and society stand out as major 'barriers' for the country becoming a full-fledged developed nation. Thus, we notice that when addressing issues of productivity growth, human capital upgrading and the development of domestic technological capabilities, Chile becomes much closer to the general Latin American picture than otherwise thought.

The above discussion opens up two sets of questions. On the one hand, why is it that Chile has clearly performed better than the rest of Latin America in the transition to a more open and de-regulated policy regime? Secondly, why is it that Latin American countries in general – Chile included – find it so difficult to attain faster productivity growth and a more vibrant development of domestic technological capabilities? What could governments do about that? These are questions we shall examine in a forthcoming publication.

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