

Productivity, production structure and non-monetary competitiveness:
Latin America in a global perspective

Hubert Escaith
Preliminary version, for discussion only.¹

1. Introduction

The main object of the paper is to analyse from a statistical perspective the real side of the globalisation chronicle, and look into the structural determinant of productivity and non-monetary competitiveness. The paper will focus on developing countries, and more particularly on a comparison between two emblematic regions: Latin America, which was the best performer during the first phase of globalization (XIX century up to the crisis of 1929) and Asia, which dominates the playfield since the collapse of the Bretton-Woods agreements, first with Japan and the Newly Industrialized Economies (NIE), and now with the emergence of giants like China and India.

True to this supply-side approach, the analysis will start from a growth accounting protocol, applied to a selection of Asian and Latin American countries. The statistical disaggregation of the mechanisms that promote productivity are imbedded into a theoretical *réfèrent* close to the structuralist school of economic development.

The results obtained allow not only to have a disaggregated measure of the respective structural sources of productivity in both regions, but also to throw some light on the Latin American phenomenon of growing informality, a preoccupying source of income inequalities.

The last part will advance some explanations to the observed phenomenon. These explanations will revisit the macro-financial aspects of the globalisation puzzle, showing that the dynamic of non-monetary competitiveness may have some of its roots into monetary and balance of payments considerations. A conclusion will sum-up the main results.

2. Globalization and mounting tensions.

Trade liberalisation was meant to be a win-win strategy, where all participants were expected to gain from the increased exchanges. Indeed, there is little doubt that free trade is welfare enhancing in absolute term at global level, but distributional considerations oblige to qualify this first conclusion. In actual fact, the variance of the distribution of benefits between countries and within countries has been so large that income inequality has increased. As it became clear that there was a "winners group" among developing countries, in terms of both income growth and market shares (v.g. the emerging Asian countries),² it became also tempting to define the not-so successful as "losers", even if only in relative term.

¹ The views expressed in this document, which has not been submitted to formal editing, are those of the author and do not represent a position, official or unofficial, of the WTO Secretariat or WTO Members.

² As shown by the Chinese example where openness, measured by the share of trade (exports plus imports) in GDP is about 60 percent today. In less than ten years, China has nearly doubled its degree of openness by raising both exports and imports. Much of this trade is related to Chinese processing of imported intermediate goods, which accounts for about one half of total Chinese trade. This strategy of export diversification has been also adopted by northern and central Latin American countries where it is known as "*maquiladora*". This strategy is credited for bringing the major benefits of openness, learning-by-doing, which occurs precisely in the area of processing trade (Blanchard and Giavazzi, 2005). Now, China is about as open as France and Italy, two economies deeply integrated in the European Single Market (for comparison, average trade openness is still below 40 percent in Latin America.)

The larger between-country variance is not an universal fact, nonetheless, and some groups of countries are not only slowly closing the gap with the most advanced countries, but also show evidences of within-group income convergence (see table 1)

Table 1. Regional Productivity Growth 1990-2005

| | Western Europe | Europe, others | Developed North America and Pacific | Asia: NIEs | Asia: emerging and developing | Latin America and Caribbean | Middle East | Africa |
|---------------------------|----------------|----------------|-------------------------------------|------------|-------------------------------|-----------------------------|-------------|--------|
| Average Annual Growth | 1.62 | 1.79 | 1.57 | 3.13 | 3.06 | 1.08 | 0.09 | 0.62 |
| Coefficient of Variation: | | | | | | | | |
| -1990-1992 | 0.16 | 0.43 | 0.19 | 1.21 | 0.24 | 0.53 | 0.46 | 0.90 |
| -2003-2005 | 0.15 | 0.49 | 0.22 | 1.16 | 0.12 | 0.58 | 0.40 | 0.92 |

Note: All values in percent, based on GDP per Person Employed, in 1990 dollars. Regional growth rates are simple average of the respective country figures; coefficients of variation refer to within regional group variance. Source: Author's calculation based on data from the Groningen Growth and Development Centre and the Conference Board, Total Economy Database, January 2007, <http://www.ggdc.net>

It is in particular the case for developing Asia, which registered a higher than average rate of growth during the last 15 years, while reducing the coefficient of variation of GDP/worker within this subgroup of countries. Transition economies from Eastern Europe have also registered similar pattern, after the initial structural adjustment that followed the collapse of the Old Order in 1989. Yet, this is has not been the general case among developing countries. Even within the "winner group" of Emerging Asia and Central European Countries, income distribution has been worsening, as shown by the evolution of Gini coefficients (table 2).

Table 2 Evolution of Gini coefficients, 1970-2000

| Years | WORLD | OECD | LAC | EAP | SAS | AFR | ECE |
|-------|--------|--------|--------|--------|--------|--------|--------|
| 1970 | 0.6677 | 0.3516 | 0.5609 | 0.4437 | 0.3799 | 0.6487 | 0.2984 |
| 1980 | 0.6814 | 0.3387 | 0.5556 | 0.4885 | 0.3837 | 0.6305 | 0.3009 |
| 1990 | 0.6855 | 0.3532 | 0.5521 | 0.4854 | 0.3813 | 0.6506 | 0.3065 |
| 2000 | 0.6842 | 0.3684 | 0.5712 | 0.5204 | 0.3338 | 0.6676 | 0.4280 |

Note: LAC: Latin America and the Caribbean; EAP: East Asia; SAS: South Asia; AFR: Africa; ECE East and Central Europe.

Source: Dikhanov (2005)

On the other hand, the relationship between trade openness and income inequality is far from being established. Indeed, the most open economies are also the most equalitarian, and this has more to do with average income and welfare state than trade policy. It is well possible that while trade openness has positive effects on average income, it may have adverse ones on income distribution.³ The trade-off between both effects may depend upon governance and institutional factors, including socially accepted fiscal covenant and redistribution policies such as in the Scandinavian Model in Europe or the Costa Rican experience in Latin America.

The building-up of social tensions and governance deficits that could go hand in hand with increased income inequality has been accompanied by a building up of imbalances at macroeconomic level, conforming a preoccupying cocktail. Indeed, the complex and multidimensional relationship among globalization, external imbalances, social tensions and international adjustment has become of increasing interest to policymakers because of its potentially explosive nature.

³ Hewitt and Gilson (2003) investigates precisely the income distribution impact of trade facilitation in developing countries, to advance a number of policy recommendations.

To provide answers to this concern, the specialists in international trade have spend more and more efforts to understand the macro, sectoral and micro causes of the apparently increasing gaps between the so-called "winners" and "losers" of globalisation. It is not an easy task as globalisation unleashed a completely new set of business and cultural parameters, and coincided with the Information Technology (IT) revolution.

Indeed, globalisation and IT revolution are intricately mixed, which makes the relationship between the dynamics of globalization, comparative advantages, international trade and external imbalances a very complex issue which encompasses many aspects. This fast evolving branch of economics is producing a series of new "new" trade theories to capture the complexity of the micro-macro relationships created by globalisation.

Despite its complexity, there are basically two ways of analysing the situation: from the macro-financial side, or from the supply side. Yet, at the difference of the famous dual/primal solutions of optimisation programs, the two different ways of approaching the problem do not unfortunately lead to the same diagnostic, nor do they converge to a unique set of solutions.

At macroeconomic level, the diagnostic of globalization points to preoccupying facts that include: (i) wide and persistent current account deficits run by the US, with correspondingly high surpluses in some emerging economies; (ii) low private and public saving rates in the US and high saving rates in the developing countries; (iii) a tendency for emerging economies to peg their currencies to the US dollar, effectively allowing to maintain this current accounts disequilibrium; (iv) a rising US external debt, reflected in a large accumulation of US financial assets in international portfolios, particularly in the balance sheets of some emerging economies' Central Banks. According to some, the very nature of the global market lead to an environment in which large current account surpluses or deficits can emerge and be sustained (IMF 2005). Other call for a completely new design of the international financial architecture.

On the real side, the situation looks less explosive when considering the two culprits of the macro-financial story. Both the US economy and the emerging Asian economies presents favourable indicators from the supply side. After a period of slow growth, where its leadership over European economies was eroded, the US is registering a boom in its labour productivity (the so-called "New Economy" factor). Its status as the world locomotive has not been affected by the accumulation of external imbalances. Indeed, international investors are still sanguine about the US prospects and the US is the biggest destination of direct foreign investment. Mirroring this situation, the emerging Asian countries are also registering a steady growth in their labour productivity, and receive an increasing share of foreign investment.

The rest of the paper will focus on the real side of this dynamic. Because non-monetary competitiveness is closely related with labour productivity, the comparative dynamic analysis provides interesting information on the evolution of comparative advantages. Yet the macroeconomic aspects cannot be totally set aside. In fact, they need to be re-introduced in order to provide an explanation for the observed divergence that affect the dynamic of the structural aspects of productivity when comparing Asia with Latin America.

3. Sectoral Growth Accounting, Structural changes and Productivity.

The role of sectoral performance in economic growth has been a topic of major importance in growth studies, starting with "founding fathers" of the profession such as A. Smith or D. Ricardo. The empirical study of the relationship between productivity and productive structure from a Sectoral growth accounting perspective was restricted by the availability of data, and it is not before the early XX Century that the systematic breakdown of productivity could be analysed from a statistical perspective. Maddison (1952) attributes to S. Fabricant ⁴ the paternity of the fundamental formula which can separate the rise in productivity into two components: the change in productivity in each sector of the economy, which he calls the rise in "productivity proper" and the changes in the

⁴ According to Maddison (1952), this formula is to be traced to Fabricant's paper "Employment in Manufacturing 1899-1939" published by the National Bureau of Economic Research in 1942.

productive structure. But when it comes to development economics, the obvious conceptual reference is the model devised by Lewis (1954).⁵

Arthur Lewis classical closed model with unlimited supplies of labour analyses the mutation of an homogeneous traditional society, where subsistence activities predominate, into a modern "industrialised" economy. Labour is abundant, and its productivity is much higher in the modern sector. As long as the two sectors coexists, the dynamic of productivity cannot be captured by an aggregate production model "à la Solow" and growth of the modern sector does not proceed at diminishing rates during the transition (Ros, 2000). During the labour surplus phase, the capital intensity of the whole economy rises, and with it the per capita income. But at the difference of the Solow model, this rise is due to the reallocation effect of labour from the subsistence economy to the capital intensive sector, and can occur even if there is no gain in "productivity proper".

Because non-monetary international competitiveness is closely related to comparative labour productivity, understanding the dynamics of productivity put an interesting light on the evolution of comparative advantages. In this comparative framework, competitiveness relates to labour productivity compared to a benchmark (usually given by the USA or other mature industrialized economy).

As always in economics, the results should not lead to jump to simplistic conclusions, particularly in such a complex domain as globalization-related issues. For example, the average productivity level (an indicator related to income) is not always an indicator of efficiency. Caselli and Coleman (2006) find that efficiency do not always go hand in hand with development level as measured by average added-value per capita. In particular, there is a skill bias in cross-country technology differences which is determined by income levels. Higher-income countries use skilled labour more efficiently, while they use unskilled labour relatively and, possibly, absolutely less efficiently than lower-income countries.

On the same token, islands of international competitiveness in developing countries can coexist in a sea of backwardness. Putting emphasis on the development of such "islands" (e.g., the development of "special" export processing industrial zones, or "maquiladoras", as they are known in Latin America) was, for example, a strategy used successfully by many developing countries, China being probably the best known example.

True to the structuralist approach used in the present paper, we nevertheless define international competitiveness as systemic. It implies, *inter alia*, for the whole economy, as an average of its productive sectors, to be moving forwards and closing, at least in average, the productivity gap.

a. The conceptual and statistical frameworks

This section describes briefly the methodology used to isolate the contribution of sectoral effects to aggregate labour productivity. To make easier the reference with the on-going research agenda of the Goningen Growth and Development Centre, which provides interested readers with a world wide data base on productivity, the presentation will follow as far as possible the growth accounting notation used by Van Ark (2003).

As indicated, our economic model starts from a structuralist departure from the Solow aggregate model of homogeneous markets. In developing economies, market segmentation implies structural and persistent differences among sectors as far as marginal productivity of labour and capital are concerned. This means that welfare gains, measured as value added per worker, can "simply" be obtained by reallocating productive factors (capital and labour) from a low productivity to a high productivity sector.

For practical reasons, related with the lack of detailed information on capital stock, the analysis will focus on labour productivity. It should be noted, nevertheless, that leaving out the investment side does not incur in a large loss of relevant information for our present purpose. Indeed, previous studies indicate that the effect of capital reallocation is very reduced (Poirson, 2000). This tends to confirm the intuitive perception that capital markets (with the notable exception of agricultural land, but it is not an flexible asset) are less segmented than labour markets in developing countries.

⁵ See Syrquin (1988) for an overview of the role of structural changes in development economics, and Ranis (2003) for an update on the theoretical debate.

Starting from a Lewis model with two sectors, one "traditional" and one "modern" economy, aggregate labour productivity can be decomposed as follows:

$$Y = Y_1 + Y_2 \quad [1]$$

where

Y = total GDP

Y_i = Valor added in sector $i=1,2$

L being the total labour force employed in the economy, we can write, using the same convention:

$$L = L_1 + L_2 \quad [2]$$

A any point of time $t=T$:

$$P^T = Y^T/L^T = [Y_1^T/L_1^T \cdot L_1^T/L^T] + [Y_2^T/L_2^T \cdot L_2^T/L^T] \quad [3]$$

which can be simplified as :

$$P^T = P_1^T S_1^T + P_2^T S_2^T \quad [4]$$

with:

P_i^T : Value added per employed worker in sector $i=1,2$ at $t=T$

S_i^T : Share of labour force employed in sector i ($i=1,2$) at $t=T$.

At the initial stage described by Lewis (1954), most labour force is (under)employed in the traditional sector, leading to very low per capita income in this sector, at, or close to, subsistence level. Added value per worker in the modern sector is much higher than the subsistence income.

$$S_1^T \gg S_2^T \quad [5]$$

and

$$P_2^T \gg P_1^T \quad [6]$$

When a developing economy transits to higher level of industrialization and income, labour moves from sector 1 to sector 2. The large structural differences in labour productivity indicated in [6] implies that the aggregate labour productivity may raise thanks to sectoral reallocation effects, even if there is no gain in "productivity proper".

The two-sectors framework can be used also to model the evolution of the Gini income concentration coefficient (Esaith, 2006). As transition occurs, the Gini describes an inverted U curve "à la Kuznets", being maximum when $L_1 = L_2 = 1/2$ for any given level of income differential between sector 1 and 2.⁶

For growth accounting purpose, the two sector model can be easily generalised to n sectors. In a multisectoral context, changes in labour productivity between two disconnected period of time can be decomposed as follows:

$$(P^T - P^0) = \sum_{i=1}^n [(P_i^T - P_i^0) \cdot (S_i^0 + S_i^T)/2] + \sum_{i=1}^n [(S_i^T - S_i^0) \cdot (P_i^0 + P_i^T)/2] \quad [7]$$

The first sum represents changes in "productivity proper" in the n sectors. The second one indicates the reallocation effect of labour between sectors. When labour shifts from a low-productivity to a high productivity sector, the net effect is positive on aggregate labour productivity.

We can expect the first element to be positive, as developing countries incorporate more and more technical progress in their production process. The second term should also be positive as long as the labour markets are segmented and the economy transits from a traditional to an industrialized state. In this case, one should expect workers to shifts to more productive employment opportunities. This is, for example, one of the force behind the rapid urbanization observed in developing economies.

⁶ This result holds even when discarding the Solow hypothesis of factor remuneration at the marginal productivity, as long as wages are in relation with sectoral added value (for example using a conceptual *réfèrent* based on reservation or efficiency wages).

When the economy reaches its steady state, labour markets are more homogeneous and structural shifts should not be as important compared with the transition phase. In this case, the economy starts to behave according to the Solow aggregated model.

It should be noted that, because the analysis applies to discrete changes (and not to marginal continuous ones), various weighting sets of parameters can be used, and decomposition is not unique. For practical and statistical reasons,⁷ we decided to use the arithmetic average of start and end points $[(S_i^0 + S_i^T)/2 \text{ and } (P_i^0 + P_i^T)/2]$.

The decomposition formula [8] can be used on national account data which are generally available at constant process for most countries in the world, provided that the corresponding disaggregation exists for labour force employed. The latter is, unfortunately, quite a restricting factor. For many developing countries, comprehensive labour force estimates by sectors of activity are available only for census years, because regular household surveys have an incomplete geographical coverage.

b. Comparing Asia and Latin America.

Two different sources were used for the purpose of comparing the dynamic of productivity and its sources, sectoral recomposition or "productivity proper". Albeit using different approaches in the normalization of national account data and adopting slightly different version of the Fabrican Formula, the methodological approaches used in both sources remain sufficiently similar to allow for a direct comparison.⁸

For Asia, we use the results of Van Ark y Timmer (2003), from the Groningen Growth and Development Centre. They were computed using a very similar formula for nine Asian economies, at different stages of industrialization (Korea, Hong Kong, India, Indonesia, Japan, Malaysia, Singapore, Thailand y Taiwan.) The authors find that the traditional source of reallocating resources from agriculture to industry is still quite powerful for South Asian and South East Asian developing countries. The structural factor has not yet disappeared in the most advanced East Asian countries. These finding can be completed and reinforced with the results of a recent IMF publication, which uses similar decomposition approach and include more Asian countries, albeit at a more aggregated sectoral level. The results show that sectoral shifts have been particularly important in explaining the catching-up process. Within Asia, and especially in China, labour moved out of agriculture at a faster rate. Another reason explaining the strength of the sectoral reallocation effect is that the initial intersectoral productivity differentials were higher in Asia than in other developing regions (IMF, 2006).

For Latin America, we use the results of Escaith (2006). The decomposition [8] was used to another set of nine Latin American countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Venezuela. The main findings of the reference paper are that inter-sectoral reallocation of resources was also relevant in explaining total labour productivity. But the labour shift was not predominantly from agriculture to industry, but from agriculture to services. Indeed, while industry was able to increase its "productivity proper", it was not creating enough job for the expanding urban population. As a result, the share on labour in manufacture decreased. This phenomenon was perceptible since the 1970s. Because the jobs created in services were of diminishing productivity, the end result was a slower increase in total value added per worker. Once again, these results can be compared with the findings of the IMF (2006), with Latin America registering lower share of manufacturing employment and lower share of manufacturing value-added than Asia. Indeed, according to this publication, "unlike Asia, Latin America experienced a decline over time in manufacturing productivity related to the United States", while "by contrast [with Asia] sectoral shifts were too weak to help promote convergence toward the United State".

⁷ On practical aspects, using an average value avoids making arbitrary assumptions on the choice of parameters; more formally, it allows for symmetry in the decomposition formula.

⁸ This particularly true if comparisons are restricted to first differences and do not parallel absolute magnitudes (which would require normalizing a series of parameters, such as the base year to be used in deflating prices).

Tables 3.a and 3.b show the results obtained from the two references studies, for Asia and Latin America, respectively. The period covered corresponds to the 1985-2001 period, corresponding to the years for which most data were available in van Ark and Timmer (2003).⁹

As always in descriptive statistics, the choice of the sample, in this case start and end years, may influence the results. The period 1985-2001 corresponds for Latin America to the depth of two economic recessions, the first one being harder than the second. In that sense, it makes sense to compare them as they correspond to the same phases of the respective economic cycles. As far as Asia is concerned, 2001 was a year of stagnation in many countries, after the 1997-1998 crisis. This may perhaps introduce a negative bias in the indicators.

Nevertheless, the first fact that literally jump to the eyes is that very few numbers from table 3.a (Asia) are negative, while they represent more than 40% on the numbers appearing on the Latin American sheet. As a matter of fact, average annual productivity growth (a close indicator of wages income) has been negative in Bolivia, Mexico, Peru and Venezuela, while it almost stagnated in all other Latin American economies, with the exception of Chile.

Indeed, with a 3.6% average annual increase in labour productivity, Chile is the only Latin case which approximate the Asian pattern of productivity growth. If we exclude Japan, a mature industrialized country whose productivity per worker grew at close to 2% yearly, the results for the Asian developing and New Industrialized Economies (NIE) range from 2.6% (Indonesia) to 4.8% (Taiwan).

⁹ Escaith(2006) covers the period 1960-2003.

Table 3.a Sectoral decomposition of aggregate labour productivity as percentage of aggregate growth, Asia 1985-2001 (in percentage)

| | Asia | | | | | | | | |
|---|-----------|--------|--------|----------|--------|--------|-----------|--------|--------|
| | Hong Kong | | | India | | | Indonesia | | |
| | Total | Proper | Shifts | Total | Proper | Shifts | Total | Proper | Shifts |
| Agriculture | -1 | -1 | 0 | 4 | 11 | -7 | -29 | 4 | -33 |
| Mining | 0 | 0 | 0 | 3 | 2 | 0 | 15 | -5 | 20 |
| Manufacturing | 32 | 32 | 0 | 21 | 21 | 0 | 57 | 18 | 39 |
| Public Utilities | 12 | 10 | 1 | 4 | 3 | 0 | 8 | 4 | 4 |
| Construction | 1 | 0 | 0 | 8 | 7 | 1 | 5 | -6 | 11 |
| Wholesale and Retail Trade | 19 | 13 | 6 | 17 | 15 | 1 | 17 | 7 | 11 |
| Transport and Communications | 12 | 9 | 3 | 12 | 12 | 0 | 6 | 0 | 6 |
| Finance, Insurance and Real Estate | 7 | -29 | 36 | 13 | 11 | 2 | 7 | -19 | 26 |
| Community, Social and Personal Services | 19 | 15 | 4 | 19 | 19 | 0 | 14 | 10 | 3 |
| Total | 100 | 50 | 50 | 100 | 102 | -2 | 100 | 13 | 87 |
| Annual Labour Productivity Growth | 3.6 | 1.8 | 1.8 | 4.0 | 4.1 | -0.1 | 2.6 | 0.4 | 2.3 |
| | Japan | | | Malaysia | | | Singapore | | |
| | Total | Proper | Shifts | Total | Proper | Shifts | Total | Proper | Shifts |
| Agriculture | 0 | 0 | 0 | -1 | 2 | -4 | -1 | 0 | 0 |
| Mining | 0 | 0 | 0 | 15 | 9 | 6 | 0 | 0 | 0 |
| Manufacturing | 44 | 43 | 1 | 27 | 18 | 9 | 44 | 43 | 1 |
| Public Utilities | 4 | 3 | 1 | 5 | 3 | 2 | 4 | 3 | 1 |
| Construction | 2 | 0 | 2 | -4 | -1 | -3 | 7 | 7 | 0 |
| Wholesale and Retail Trade | 9 | 10 | -1 | 7 | 11 | -4 | 18 | 19 | -1 |
| Transport and Communications | 7 | 6 | 1 | 8 | 5 | 2 | 16 | 15 | 2 |
| Finance, Insurance and Real Estate | 22 | 19 | 4 | 18 | 10 | 8 | 13 | -5 | 18 |
| Community, Social and Personal Services | 7 | 3 | 4 | 9 | 10 | -1 | -2 | 6 | -9 |
| Total | 100 | 88 | 12 | 100 | 85 | 15 | 100 | 88 | 12 |
| Annual Labour Productivity Growth | 1.9 | 1.7 | 0.2 | 4.5 | 3.8 | 0.7 | 3.8 | 3.3 | 0.4 |
| | Korea | | | Taiwan | | | Thailand | | |
| | Total | Proper | Shifts | Total | Proper | Shifts | Total | Proper | Shifts |
| Agriculture | 1 | 4 | -2 | 1 | 1 | 0 | 1 | 8 | -7 |
| Mining | 2 | 2 | 0 | 1 | 1 | 0 | 8 | 6 | 2 |
| Manufacturing | 60 | 57 | 3 | 35 | 33 | 2 | 47 | 22 | 26 |
| Public Utilities | 6 | 5 | 1 | 4 | 4 | 0 | 14 | 9 | 5 |
| Construction | 7 | 3 | 3 | 0 | 1 | -2 | -3 | -12 | 8 |
| Wholesale and Retail Trade | 4 | 8 | -4 | 17 | 16 | 1 | 5 | -11 | 16 |
| Transport and Communications | 10 | 9 | 1 | 11 | 10 | 0 | 17 | 11 | 6 |
| Finance, Insurance and Real Estate | 12 | 3 | 9 | 14 | 3 | 11 | 0 | -5 | 5 |
| Community, Social and Personal Services | -3 | -3 | 0 | 7 | 8 | -1 | 8 | 2 | 6 |
| Total | 100 | 87 | 13 | 100 | 86 | 14 | 100 | 32 | 68 |
| Annual Labour Productivity Growth | 4.6 | 4 | 0.6 | 4.8 | 4.1 | 0.7 | 4.2 | 1.3 | 2.8 |

(to be continued .../...)

Table 3.b Sectoral decomposition of aggregate labour productivity as percentage of aggregate growth, Latin America 1985-2001

| | Latin America | | | | | | | | |
|---|---------------|--------|--------|----------|--------|--------|------------|--------|--------|
| | Argentina | | | Bolivia | | | Brazil | | |
| | Total | Proper | Shifts | Total | Proper | Shifts | Total | Proper | Shifts |
| Agriculture | 6 | 16 | -10 | -15 | 32 | -48 | 23 | 106 | -83 |
| Mining | 11 | 16 | -6 | -14 | 110 | -124 | 17 | 5 | 12 |
| Manufacturing | -12 | 74 | -86 | -10 | -83 | 73 | -22 | -115 | 93 |
| Public Utilities | 11 | 16 | -5 | 9 | 21 | -12 | 21 | 13 | 9 |
| Construction | -6 | 8 | -14 | -7 | -62 | 55 | -14 | -47 | 33 |
| Wholesale and Retail Trade | -5 | -12 | 6 | -17 | -174 | 157 | 1 | -15 | 16 |
| Transport and Communications | 32 | 14 | 19 | 33 | 45 | -12 | 57 | 36 | 21 |
| Finance, Insurance and Real Estate | 47 | -33 | 79 | 39 | -196 | 235 | -47 | 42 | -89 |
| Community, Social and Personal Services | 17 | -24 | 41 | -118 | 4 | -122 | 65 | -2 | 67 |
| Total | 100 | 75 | 25 | -100 | -303 | 203 | 100 | 21 | 79 |
| Annual Labour Productivity Growth | 0.80 | 0.60 | 0.20 | -0.13 | 0.39 | -0.26 | 0.15 | 0.03 | 0.12 |
| | Chile | | | Colombia | | | Costa Rica | | |
| | Total | Proper | Shifts | Total | Proper | Shifts | Total | Proper | Shifts |
| Agriculture | 7 | 13 | -5 | -7 | 51 | -58 | 1 | 39 | -38 |
| Mining | 9 | 21 | -12 | 44 | 33 | 12 | -1 | 0 | -1 |
| Manufacturing | 16 | 22 | -6 | -19 | -11 | -8 | 43 | 36 | 7 |
| Public Utilities | 4 | 5 | -1 | 2 | -1 | 4 | 9 | 2 | 7 |
| Construction | 10 | 5 | 5 | -33 | -35 | 2 | -9 | -11 | 3 |
| Wholesale and Retail Trade | 14 | 6 | 8 | -19 | -70 | 51 | 27 | -74 | 100 |
| Transport and Communications | 13 | 10 | 3 | 6 | -3 | 10 | 39 | 9 | 30 |
| Finance, Insurance and Real Estate | 23 | -28 | 51 | 26 | 55 | -29 | 19 | -62 | 81 |
| Community, Social and Personal Services | 5 | 18 | -13 | 99 | 61 | 38 | -28 | 25 | -53 |
| Total | 100 | 70 | 30 | 100 | 80 | 20 | 100 | -35 | 135 |
| Annual Labour Productivity Growth | 3.6 | 2.5 | 1.1 | 0.5 | 0.4 | 0.1 | 0.8 | -0.3 | 1.1 |
| | Mexico | | | Peru | | | Venezuela | | |
| | Total | Proper | Shifts | Total | Proper | Shifts | Total | Proper | Shifts |
| Agriculture | -17 | 8 | -25 | 18 | 37 | -19 | -3 | 7 | -10 |
| Mining | -5 | 8 | -13 | -4 | 40 | -43 | 15 | -2 | 16 |
| Manufacturing | 13 | -2 | 15 | -17 | 3 | -20 | -27 | -25 | -1 |
| Public Utilities | 2 | 3 | 0 | 9 | 11 | -2 | 1 | 3 | -2 |
| Construction | -15 | -36 | 21 | 14 | 28 | -13 | -18 | -28 | 10 |
| Wholesale and Retail Trade | -30 | -135 | 105 | -25 | -113 | 88 | -28 | -27 | 0 |
| Transport and Communications | 23 | 13 | 11 | 0 | -20 | 20 | -5 | -12 | 7 |
| Finance, Insurance and Real Estate | 10 | -30 | 40 | 9 | -74 | 83 | -21 | -35 | 14 |
| Community, Social and Personal Services | -83 | -45 | -39 | -105 | -99 | -5 | -15 | -20 | 5 |
| Total | -100 | -215 | 115 | -100 | -189 | 89 | -100 | -139 | 39 |
| Annual Labour Productivity Growth | -0.4 | 0.8 | -0.4 | -0.6 | 1.0 | -0.5 | -1.0 | 1.4 | -0.4 |

Notes: Values in percent of total labour productivity variation. Annual growth is lineal (simple arithmetic average) and not a compound rate.

Sources: Author's calculations based on Van Ark and Timmer (2003) and Escaith (2006).

From a sectoral perspective, two major aspects merit attention:

- First, the importance of the industrial sector in "explaining" productivity growth in Asia, based on both "productivity proper" and labour shifts. In Latin America, it proved almost impossible for the manufacturing sector to increase simultaneously both productivity and labour share, Costa Rica being the exception. But in general the two components of productivity growth have opposite sign when they are not all negative (Colombia and Venezuela).

- Second, the sectors of services in Asia did not experience an outstanding growth in employment, relative to other sectors. The added value by jobs created in this sector increased, with a few exceptions (Finance in Honk Kong and Indonesia being the most notable, and related probably to the 1997-1998 financial crisis). In addition, shifts out of the Agricultural sectors were moderate. Thus,

Asian countries remain basically good-producing economies, with an continuing shift towards industrialization. On the contrary, in many Latin American countries, the service sectors absorbed an increasing share of the working force.

It would be wrong to pretend that this occurs because Latin American countries have more advanced economies, that are transiting towards a post-industrialised service oriented society. In Latin America, the jobs offered by the service sectors were generally of low and decreasing productivity. This denotes a situation where the highly productive sectors are not able to create new jobs and new entrants have to settle for low-quality jobs. It has been identified as one of the sources of the raise of the informal sector in this region (Escaith, 2006).

From a view point of systemic competitiveness, it would also be erroneous to reduce the debate between two models, the outwards-oriented one stressing tradable goods in Asia and the inwards-oriented post-industrialized Latin American case, with most jobs created in services. As in the business management distinction between back office and front office functions in a firm, both being necessary to the firm competitiveness and efficiency, many services are complementary to the production functions. As investment in infrastructure (roads, electricity network) is complementary to production, the same can be said of telecommunication services and other similar activities. The systemic competitiveness of the economy depends not only on its exporting industry, but also on the quality of these "infrastructure" services provided to these industries.

Taking into consideration the above mentioned arguments, the initial nine National Account sectors were aggregated into three categories: tradable goods production, "infrastructure" services, and the rest of sectors (representing basically public and private services to households).

Table 4 shows a summary of the two regions, with a sectoral aggregation between Good production (Agriculture, Mining, Manufacture); Infrastructure services (Public Utilities, Construction and Transport and Communication) and the other non specified services. The classification is arbitrary, as it is usual. For example, economic theory indicates that financial services are key to enhance firms' productivity, especially by screening out investment projects. On the other hand, most jobs created in banking were to serve households, which justified its classification in the third category.

The summary table 4 reveals the contrast between the two regions.

Table 4. Growth of Annual Labour Productivity: Comparative Aggregated Table

| | | | |
|-----------------------------------|--------------|---------------|---------------|
| Asia | Total | Proper | Shifts |
| - Goods | 45 | 38 | 7 |
| - Infrastructure Services | 21 | 14 | 7 |
| - Other Services n.e.s | 35 | 17 | 18 |
| Total | 100 | 69 | 31 |
| Annual Labour Productivity Growth | 3.78 | | |
| Latin America | Total | Proper | Shifts |
| - Goods | 51 | 440 | -389 |
| - Infrastructure Services | 190 | -16 | 206 |
| - Other Services n.e.s | -141 | -1059 | 918 |
| Total | 100 | -635 | 735 |
| Annual Labour Productivity Growth | 0.43 | | |

Sources: Table 3.

Notes: The respective contributions for each sectoral aggregate were obtained by simple addition across sectors and countries.

True to their respective cultural background, Asia is showing more harmony and equilibrium while Latin America stands for the contrasts and oppositions. But the consequences of these contrasting results for Latin America are preoccupying in terms of international competitiveness and population welfare. Once again, the poor quality of the Latin American jobs created in other services is appalling. In Asia, these services are also gaining importance in the labour market, but are doing so in line with

the development of the rest of the economies, and the job created are of good quality (productivity proper raises in these sectors, in line with labour participation).

Information gathered from secondary data sources seems to validate the contrasting sectoral results obtained between Asia and Latin America. For example, IMF(2006) indicates that "the movement of labor into the services sector was at least as large as that toward industry. Also [except in Japan and the NIEs] in most of Asia the share of industry in total employment is still growing. Unlike Asia, Latin America experienced a decline over time in manufacturing productivity relative to the United States...".

Thus, it seems safe to conclude this empirical section on sectoral decomposition of productivity growth by stating that productivity increase in Asia is based on a virtuous structural transformation, which in turn sets the grounds for a sustainable projection of the present trend. Obviously, one should expect the contribution of structural changes to total labour productivity to diminish with the reduction of surplus labour from agriculture, but for the time being the transition is functioning. It means, as a corollary, that Asia should keep on reducing its productivity gap and increase its non-monetary competitiveness on the international markets. Latin America, on the contrary, seems engaged in a perverse transition from one dualist model, where subsistence sector is located in the traditional rural area, to a new dualist society, with a growing urban informal sector.

Returning to our conceptual "referent", the sectoral data presented in this section tends also to show that Asia is going through the transition from traditional to modern as expected from the Lewis model, while the Latin American case indicate a trounced transition.

4. Globalization and the macroeconomic restrictions to full structural transition.

This part reincorporate nominal and financial aspects to examine how a broad fall in trading and financial transaction costs may have affected the key determinants of structural adjustment positively, in the case of Asia, and negatively in Latin America. The initial Lewis model was of a closed economy, and the speed of the transition from traditional to modern was constrained by internal investment and savings capacities. The liberalization of international goods and financial markets was supposed to reduce these internal restrictions by opening new export markets for the national products and facilitating capital accumulation in the modern sector by attracting external savings.

The statistical evidence shows that globalization was effective in opening both real and financial markets. In recent years, the most important feature in this respect has been the growing importance of emerging market economies in world trade. The development of international financial markets has been far more dynamic than that of trade in goods and services.

Yet our results show that Asia was able to drive on this increased demand, while Latin America failed. At least, this is the explanation that comes to our mind when looking at the evolution of services sectors observed in table 4. One plausible interpretation is that in Asia, the creation of new jobs in the service sectors responded to a larger demand for this type of activity. As the supply responded to a demand (from the expanding industrial sector, or from more affluent households), value added was created in this process. This means that sectoral and average productivity kept on increasing, and the higher salaries paid to the service sector helped sustaining the demand.

At the contrary, the Latin American data indicates a situation where industry could not increase its market access, but was forced into a process of productivity enhancing investment to defend its market shares.¹⁰ As a consequence, the modern manufacturing sector has not been able to absorb the surplus labour force coming from the traditional sector, or resulting from the natural increase in the active population. In absence of social protection for the unemployed, working in the (informal) service sector remained the only feasible strategy. As job creation in these sectors did not respond to an increase in demand for their services, value-added per worker decreased.

The truncated transition in Latin America is therefore most probably attributable to demand constraints. These restrictions from the demand side impede the expected transition to a competitive

¹⁰ Escaith (2006) shows that "productivity proper" increased dramatically in Latin America in the early 1990s, returning to the growth rate registered during the "golden years" of the 1960s. But at the same time, the industry reduced its participation in the labour force. This pattern differs from what is been observed in Asia, where investment in manufacturing increase both productivity and capacity, resulting in higher employment.

industrial economy (once again, competitiveness here is systemic: persistent dualism implies that, even if it is possible to find islands of competitiveness in Latin America, these islands do not play their expected role of development poles).¹¹

Effective demand, when one refers to developing countries, is chiefly restricted to external demand. This reductionism is explained usually by the shallowness on internal market and, more importantly, its limited multiplier effect due to the necessity of importing capital and high technology goods. This tradition of analysis starts with the Harrod-Domar' warranted rate of growth in a closed economy model, and extends it to the case of open developing economies as in the well known "two-gaps" models. Foreign capital can raise their growth rate by temporarily lifting their saving constraints, and providing the foreign exchange to pay from necessary imports. But in the long run debt should be repaid, and developing countries need to export in order to grow. A strategy focused on internal demand would quickly face balance of payment constraints, as it happened in Latin America with the external debt crisis of 1982.

The structural reforms implemented during the 1980s intended to reshape the productive sector along an export-led model of development, inspired by the "Asian Miracle". By opening their economies, the reformers expected to correct the allocation efficiency gap of previous inward-oriented policies, and to foster the development of labour intensive and internationally competitive manufactures. As a matter of fact, the reverse was observed. Most of the investment that took place in these sectors was to increase efficiency and gain competitiveness in the face of external competitors. It led to an increase in the capital/output ratio, but not to an increase in total capacity nor in the use of more labour. At the contrary, employment in these sectors reduced its share of the total labour force, as is exemplified by the negative signs affecting labour-shifts.

This may not be surprising, if one remembers that most analysis of the success behind the Asian Newly Industrialised Economies in the 1970s stressed that the demand-side factors were as or more likely to explain the success of export-led strategies, than the supply-side considerations. By adopting an export-led orientation, these countries did not immediately benefit from greater growth in technical efficiency (the Maddison's "productivity proper"); but the expanding demand linked to export orientations did help them to maintain productivity in the face of a rapid absorption of factors from agriculture and other traditional activities (Pack, 1988). Viewed from this perspective, the advantage of export orientation was more quantitative than qualitative: labour could be moved rapidly from low productivity sectors to high productivity activities without confronting diminishing returns. This implied that real competitiveness (the capacity to efficiently produce what was demanded by the international markets) had to be supported during all the transition process by a competitive exchange rate (nominal competitiveness).

Thus, the symmetry between Asia and Latin America we observed in the data (table 4) is not fortuitous. When contrasting the respective factor endowments, it appears that the difficulties of Latin America in seizing the opportunities of globalization may be related to the two regions' specific relative factor abundance and their complementarities. In an international context, Latin America is comparatively rich in natural resources, which attract investments and appreciate the real exchange rate. By the time of trade liberalization, on the other hand, Asian developing countries with large pools of unskilled labour force and lower wages, such as China and India, were already emerging in the world trade scene, rapidly gaining market shares in the OECD countries.

These effects put a cap to the development of internationally competitive labour-intensive industries in Latin America and forced a pattern of specialization based on higher-skilled labour (Perry and Olarreaga, 2006). But this niche of specialization is capital intensive, and was already occupied by the NIEs such as Korea or Taiwan. Therefore, this strategy could not generate enough jobs to absorb the new entrants in the urban labour market, and lower wages in the industrial sector would not solve the excess labour supply. At the contrary, salaries for higher-skill workers and professional increased as

¹¹ It is tempting to blame the "maquiladora" mode of industrialisation for this outcome. It is easy but erroneous: the Asian example shows that the fragmentation in the production of manufactured goods (dividing the global production process into multiple steps at different locations) can be used by emerging economies to rapidly close the productivity gap and build an industrial base out of the production of labour-intensive parts. Indeed, if our hypothesis of external demand constraints is verified, "maquiladoras" are part of the solution, and not the problem.

firms were competing to attract the needed technicians. Infrastructure services (with the exception of construction) were also investing much more in new technologies during the 1990s and relying more on capital intensive processes.

At the difference of East Asia, where manufacturing has been able to create enough low-qualification jobs to absorb the rural migrants and the new entrants into active population, in Latin America, the oversupply of labour had to be absorbed by the non-infrastructure service sector. As the domestic market for such services was not expanding accordingly, labour absorption was accompanied by a decrease in value-added per worker in the formal sector, and –increasingly– by the rise of the urban informal sector. The share of informal sector in total urban employment increased from 43% in 1990 to 47% in 2003, in a context of increased intersectoral income differential (Weller, 2005).

It would be erroneous to conclude that East Asia also was able to avoid this increase in income differentials. Table 2 indicates that the Gini coefficient raised strongly in this region between 1990 and 2000. As we previously pointed out, this outcome is coherent with the Lewis' model prediction; in the case of Asia, it reflects the rise of an urban middle class as workers move-up the income distribution ladder by reallocating from traditional to industrial sectors. But the rise of this middle class creates new demand and new jobs in services, that fuel the virtuous Lewis circle and create the condition for a more internal-demand driven economy.

The prospects for Latin America are not as bright, if the recent simulation from World Bank are to be believed: according to its simulations, the share of Latin American in the bottom decile of global income distribution could rise by 50% in 2030 (World Bank, 2007).

While macroeconomic policy has been carefully managed in most Asian country to complement export-led policies, such a strategy is not easily put into practice. First, nominal wage increases have to be kept under control in order to maintain the overall favourable competitive position. Writing on China economic policy challenges, Flasbeck (2005) recommends that, if it is not possible to keep wage increases inline with productivity, a crawling peg with constant devaluation might be the second best solution. One should be reminded that real exchange rate, which determines nominal competitiveness, is not a flexible policy variable, even with the capital controls recommended by this author. The recent experience of Thailand when such controls were implemented to curb currency appreciation are an example. In addition, competitive devaluations undertaken at global level are at best a zero-sum game and are not sustainable.

On the other hand, prudent macroeconomic management may be able to prevent the non-structural appreciation of real exchange rate that accompany the over-heating phases of the economy. Some sort of short-term capital controls may be one option to reduce volatility in the capital account of the balance of payment, and structural targets for fiscal policy are certainly helpful for reducing the volatility of internal demand.

Nevertheless, prudent macroeconomic policies might not be enough to help Latin American countries breaking the vicious circle that led to the new dualism. Our analysis suggests that productivity performances reflect in good part the capacity to reallocate existing resources. In particular, the findings underline the importance of fostering labour mobility, not only in the restricted sense of labour market flexibility, but also by helping small firms (representing the majority of jobs) to gain directly or indirectly access to the global market. Helwitt and Gillson (2003) review a series of measures that trade facilitation programmes could undertake in order to increase employment, especially from the small and medium firms.

5. Conclusions

The paper analyzed from an empirical perspective the structural determinant of productivity and non-monetary competitiveness in a selection of Asian and Latin America countries. Using sectoral growth accounting techniques, it was possible to disentangle the labour productivity variations that originated from "productivity proper" and those that were due to the reallocation of labour between sectors of activity.

The empirical analysis is based on a research conducted by Van Ark y Timmer (2003) for nine Asian economies, at different stages of industrialization and Escaith (2006) for a similar number of Latin American economies. The results for the period 1985-2001 indicate that the traditional source of reallocating resources from agriculture to industry is still quite a powerful factor in both regions,

albeit in Latin America it does not always lead to a favourable outcome as far as total labour productivity is concerned.

The results obtained indicate a very contrasted situation between both developing regions. While Asian real economy appears to be engaged in a relatively smooth transition from the low productivity traditional activities to a more industrialized economy, the pattern emerging out of the Latin American data indicates a polarizing trend, with a tendency to create a new dualistic economy.

While industry in Asia was able to close the productivity gap and gain international competitiveness in manufacturing, its industry were able to use globalization to expand their market and create more jobs. In Latin America, industries adopted a more defensive strategy, and investment in higher productivity technology was meant to preserve competitiveness in the international market, and not to increase capacity, at least on a sectoral scale.

As a result, the Asian productive sectors were able to offer jobs of increasing quality to their economic active population, even if income distribution was getting more unequal due to the resulting wage differential. On the opposite, Latin America has experienced a situation of relative excess supply of labour which was absorbed reactively by the service sector (in a context of decreasing value-added per head) and by the urban informal sector.

To explain the diverging trajectories, the paper advances that a mixture of real and nominal factors may be at work. Latin America is comparatively rich in natural resources, which raise national income, attracts investments and appreciate the real exchange rate. When Latin America tried to apply the Asian export-led strategy to solve the structural imbalances that caused the 1982 crisis, and adopted trade liberalization, a new wave of Asian developing countries with large pools of unskilled labour force and lower wages were also emerging as strong competitors in the international market. The resulting lack of competitiveness on labour intensive manufactures, aggrieved by the rise in real exchange rate that accompanied the opening of capital accounts and the return of foreign investment, squeezed the Latin American manufacture into higher productivity type of activity. In Latin America, the resulting segmentation of the labour market resulted also in a worsening of the income distribution, but this was not due, as in Asia, because of the rise of a new middle class, but because of an increasing gap between the winners (qualified and employed workers) and the losers (especially in the informal sector).

Because nominal factors are part of the determinant of the real-competitiveness equation, appropriate demand management at the macroeconomic level are therefore indispensable to avoid real exchange rate cycles and provide the domestic firms with a favorable competitive environment. These supportive policies should be accompanying a series of structural policies. Considering the importance of the labour reallocation component in explaining total factor productivity, the structural policies should include actions aimed at facilitating resource-shifts from low to high productivity sectors. As small and medium firms are the dominant employers in most developing countries, they should also be the main beneficiaries of trade facilitation policies.

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