

Growth after Globalisation: a 'Structuralist-Kaldorian' game of musical chairs?

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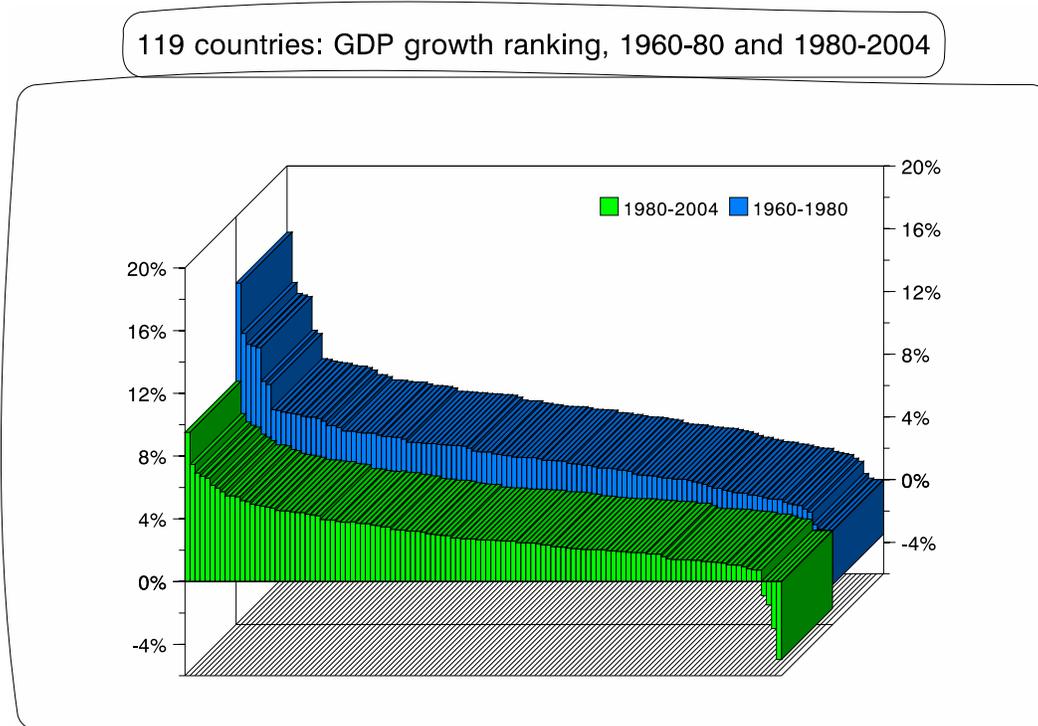
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1.- Is there an increase in growth divergence after globalisation?

The first issue to discuss when analysing economic growth across countries and regions since globalisation is whether there really was an increase in growth 'divergence' in the post-1980 period vis-à-vis the 'pre-globalisation' period of 1960-1980.

FIGURE 1



• **Source:** World Bank, World Development Indicators (WDI, 2005; growth rates at constant 2000 US\$). Unless otherwise stated, data throughout this paper will use this source.

	1960 - 1980			1980 - 2004
average	4.78		average	2.90
st dev	2.63		st dev	1.91
c of var	0.55		c of var	0.66

• **st dev** = standard deviation; and **c of var** = coefficient of variation.

Looking at the 119 countries for which the WDI (2005) provides GDP

growth data for these two periods, there are two obvious issues that stand out.² First, there is a (well-known) significant slowdown of the world economy after 1980 -- from an unweighted average of 4.8% between 1960-1980 to one of 2.9% between 1980-2004.³ Second (and contrary to common perception), there is the fact that that this slowdown in growth rates took place in a fairly even way throughout the ranking distribution. In fact, the standard deviation is actually lower for 1980-2004 (at 1.91) than for 1960-1980 (2.6%). However, as the drop in the mean was proportionally larger than that of the standard distribution, the coefficient of variation actually increased in the second period -- from 0.55 to 0.66. The crucial question, of course, is whether this increase in the coefficient of variation is sufficiently large to justify characterising the second period as one of 'increased growth divergence'?

One simple way of looking at this issue is to calculate the difference in the rate of growth of both (independent) ranking distributions.⁴

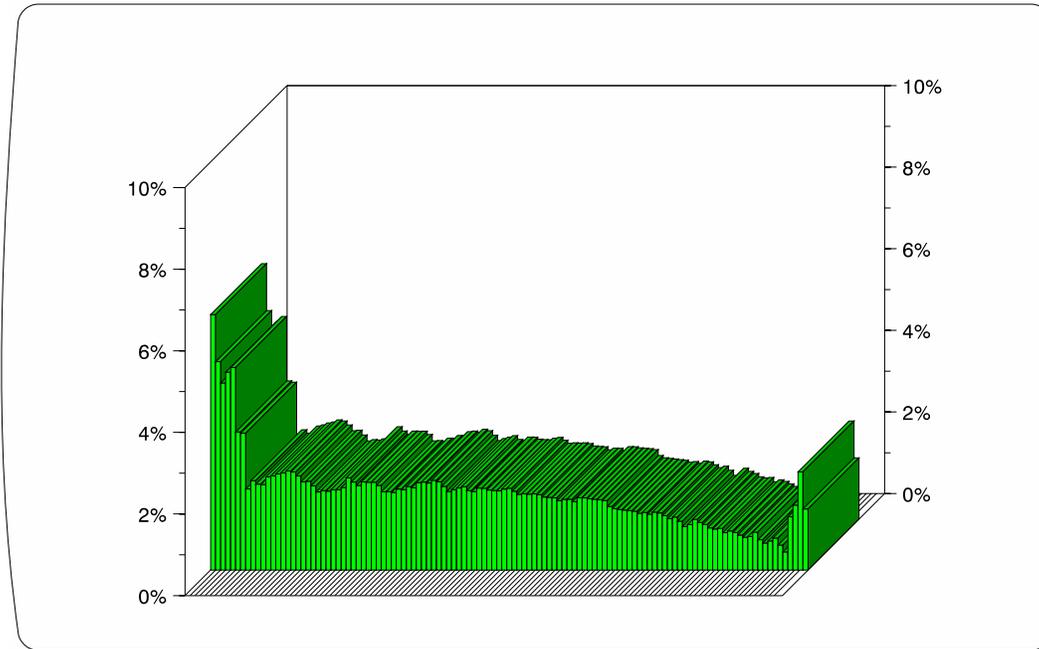
² The main countries missing are from 'countries in transition' in Eastern Europe and countries in Sub-Saharan Africa that have experienced significant political instability; although this is likely to bias the sample, it could be argued that both groups of countries present rather specific type of problems. Also, for several countries the 1960-80 growth data reported does not cover the full 20-year period.

³ The weighted average rate of growth of world output declined from 4.5% between 1960 and 1980 to 2.9% between 1980 and 2004.

⁴ Difference by ranking, not by country.

FIGURE 2

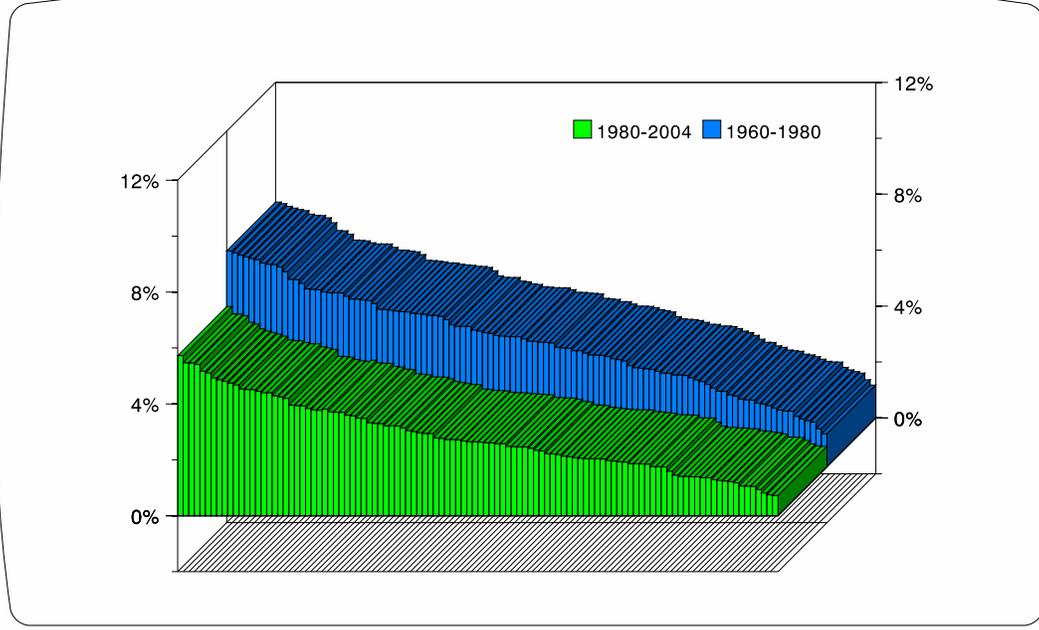
119 countries: GDP growth 1960-1980 minus that of 1980-2004



The result indicates that in these 119 countries, the difference in growth rates in both periods is relatively even -- other than in both tails (just seven countries in the upper tail and four in the lower tail). In fact, in absolute terms, this difference slowly declines towards the lower tail. This phenomenon is clear in the next graph in which we truncate the distribution at both ends.

FIGURE 3

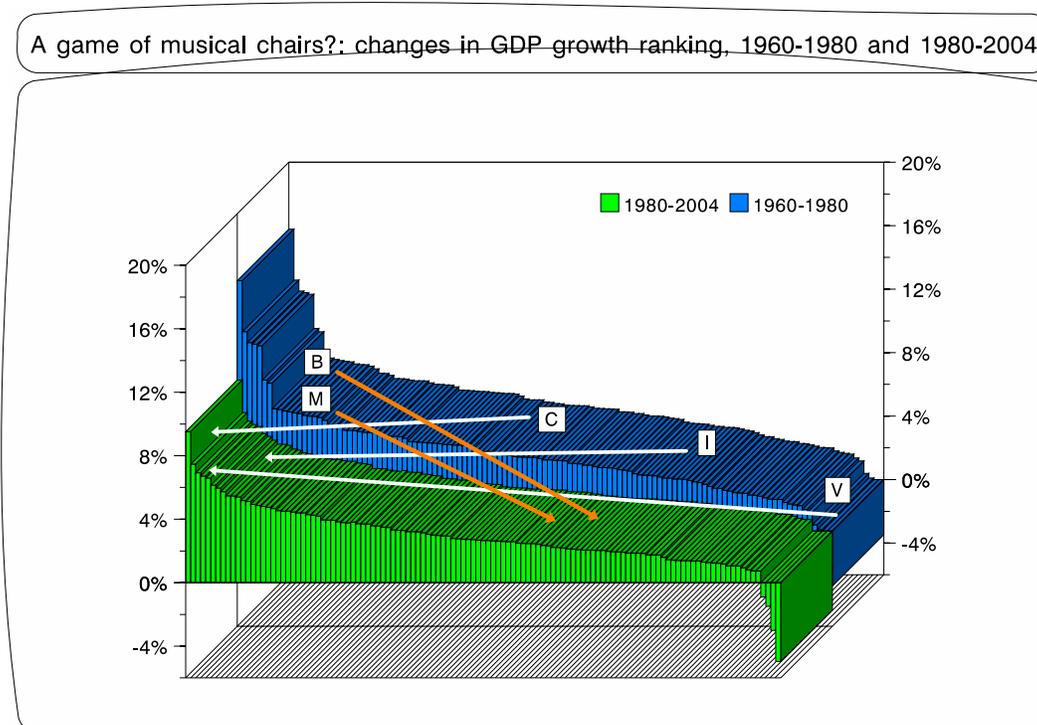
108 countries: GDP growth ranking, 1960-80 and 1980-2004
(excludes top 7 and bottom 4 countries of the sample)



2.- A game of musical chairs?

Although the two distributions are relatively similar (but with a clearly different mean), there was a remarkable 'switching around' in the position of countries within the ranking. The cases of Latin America and the 'newly-growing' Asia stand out.

FIGURE 4



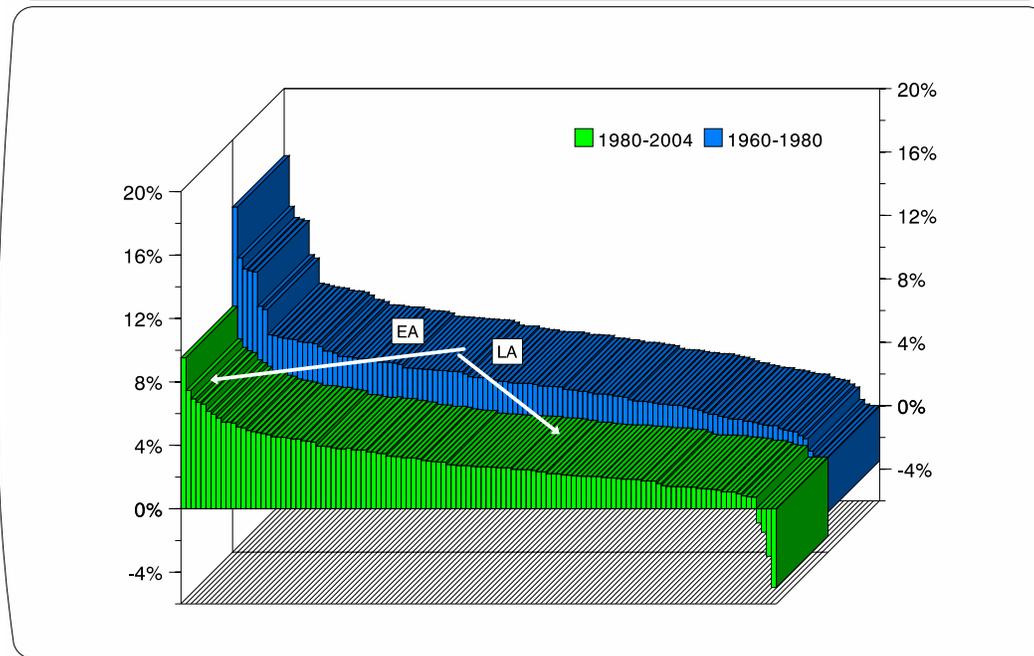
- **B** = Brazil; **C** = China; **I** = India; **M** = Mexico; and **V** = Viet Nam⁵

In fact, for the whole sample the rank correlation coefficient between the two periods is just 0.29, clearly indicating the degree of switching around of positions within the two rankings. Therefore, the focus of this paper will be trying to explain this 'game of musical chairs'. The following three graphs will indicate how generalised this phenomenon is.

⁵ The figures for Vietnam correspond to the periods 1973-1983 and 1984-2003; i.e., between the end of the war and the beginning of economic reform, and between the latter and 2004.

FIGURE 5

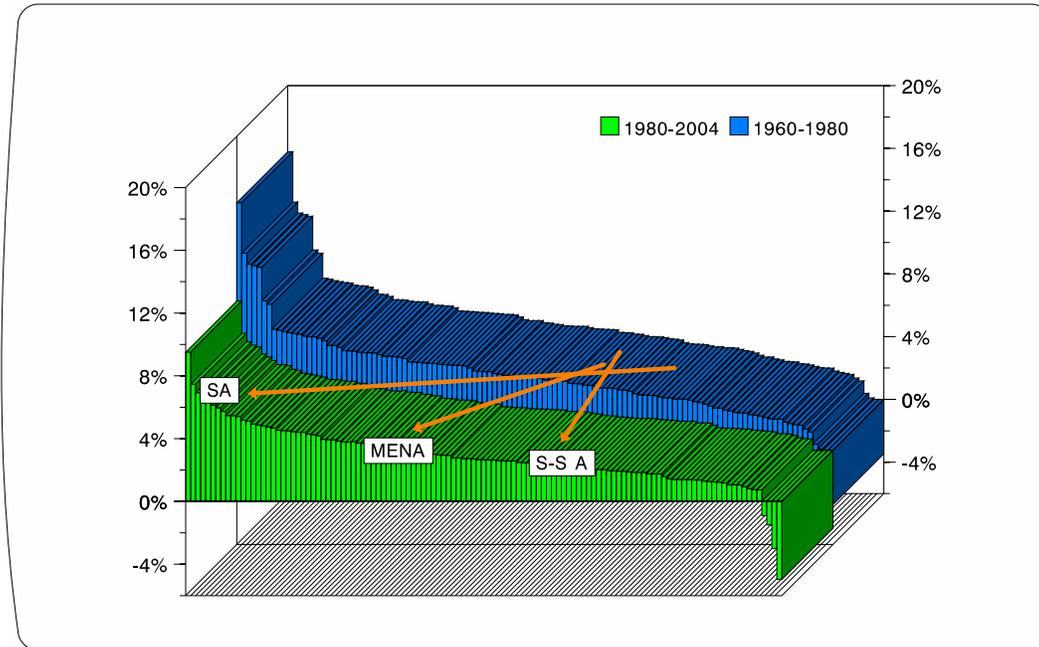
East Asia and Latin America: changes in GDP growth ranking, 1960-80 and 1980-2004



- **EA** = East Asia; and **LA** = Latin America. Regions as in World Bank, WDI (2005). Note that as regions were not part of the rankings, in this graph (and other similar graphs below) the position of a country with the same rate of GDP growth as the average of the respective region is marked.

FIGURE 6

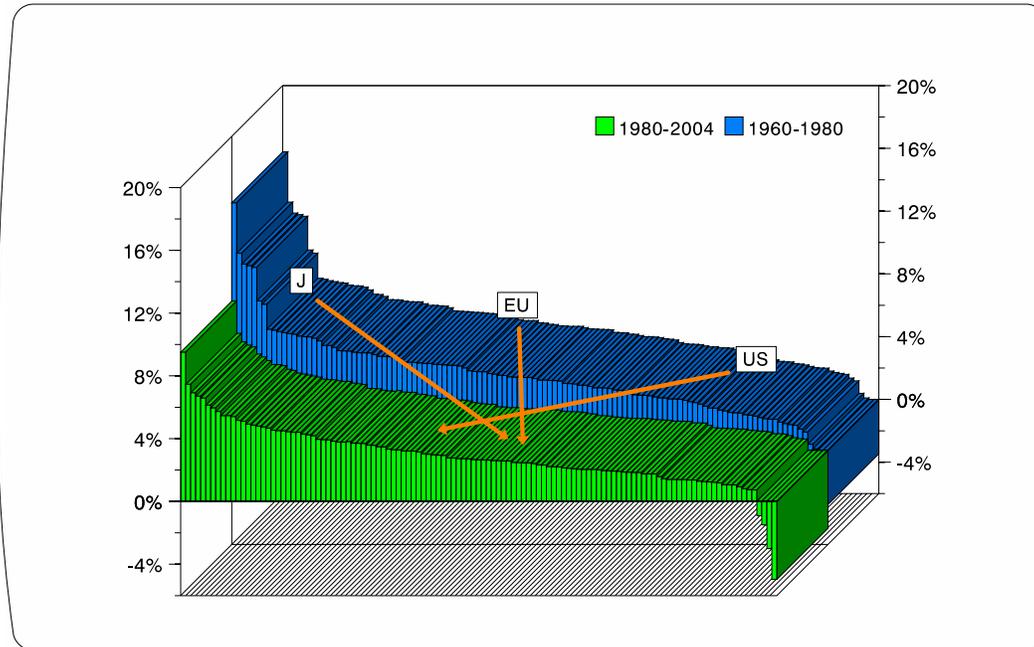
SA, S-SA and MENA: changes in GDP growth ranking, 1960-1980 and 1980-2004



• **MENA** = Middle East and North Africa; **SA** = South Asia; and **S-S A** = Sub-Saharan Africa.

FIGURE 7

EU, Japan and US: changes in GDP growth ranking, 1960-1980 and 1980-2004



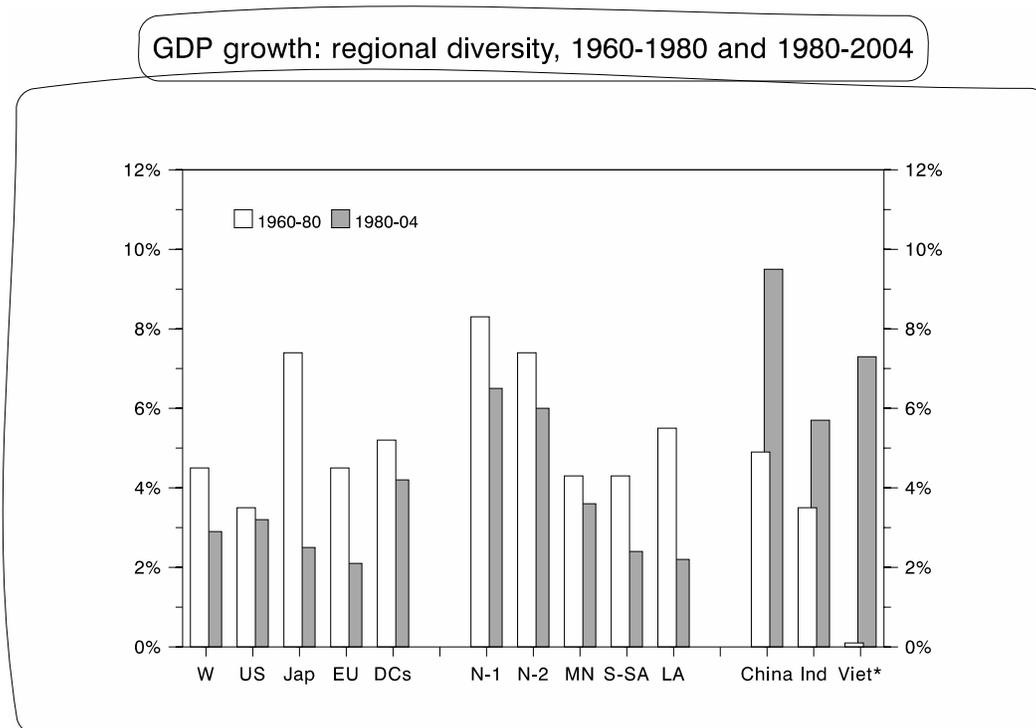
- **J** = Japan; **EU** = European Monetary Union; and **US** = United States.

In the case of OECD countries, the trend is one of increased convergence rather than the increased divergence found among developing countries.

3.- Regional diversities

As in previous graphs, Figure 8 shows that despite significant regional variations in growth rates, with a few exceptions (including the major ones of China, India and Viet Nam), in the era of globalisation there has been a significant generalised slow-down in economic growth in all regions of the world.

FIGURE 8



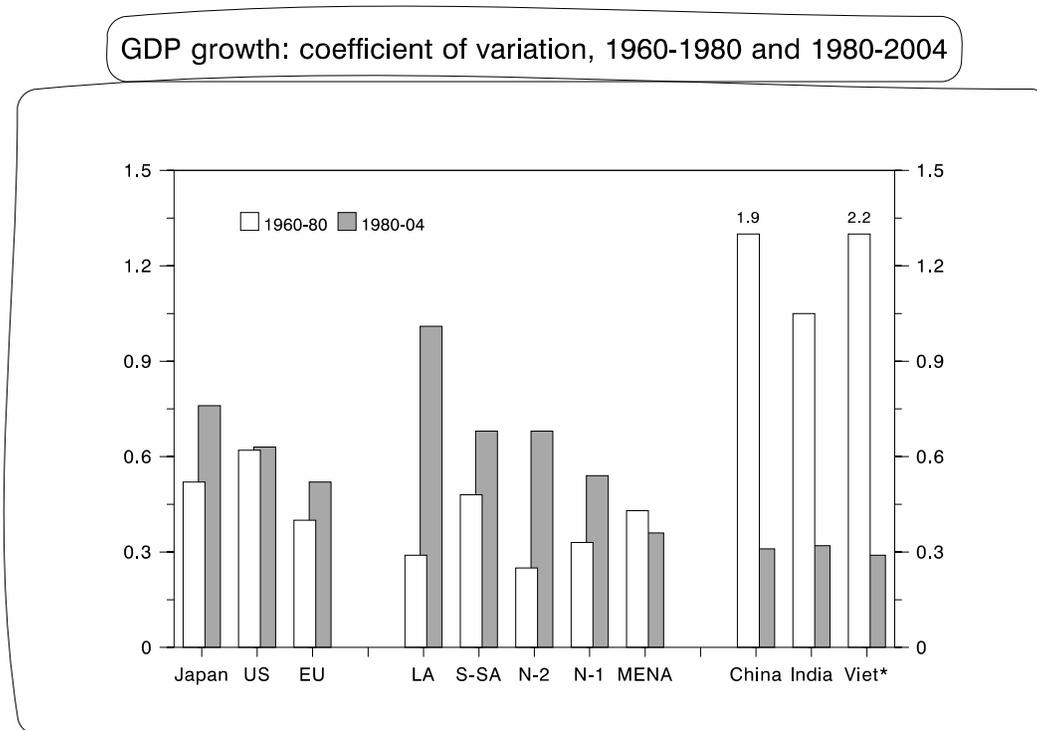
• **W** = world; **Jap** = Japan; **EU** = European monetary Union; **DCs** = Developing Countries; **N-1** = first-tier NICs (Newly Industrialising countries of East Asia: Hong Kong; Republic of Korea; and Singapore). **N-2** = second-tier NICs (Malaysia; and Thailand). **MN** = Middle East and North Africa; **S-S A** = Sub-Saharan countries; **LA** = Latin American and Caribbean countries; **Ind** = India; and **Viet** = Viet Nam.⁶ When data refer to a region or group of countries, they refer to the aggregate output of the respective region or group.

Furthermore, what is also remarkable about 'newly-dynamic' Asian countries is not only their capacity to grow at such speed, but also their

⁶ As in Figure 4, the growth rates for Viet Nam correspond to the periods 1973-1983 and 1984-2003; i.e., between the end of the war and the beginning of economic reform, and between the latter and 2004.

ability to generate a stable rate of growth in this process.

FIGURE 9

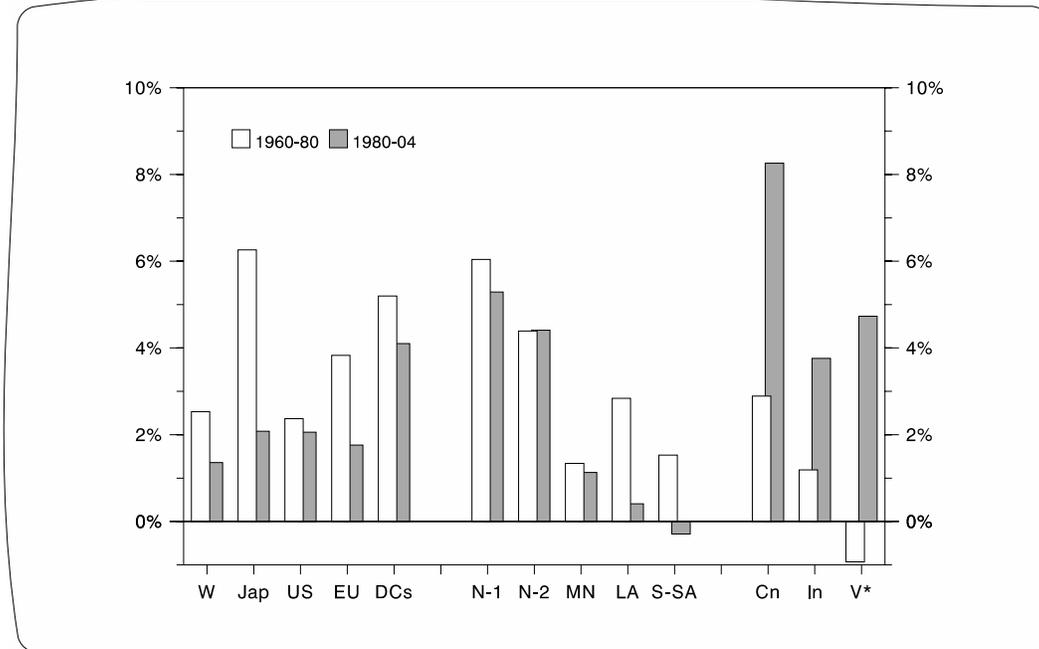


- Coefficient of variation of the year-on-year rate of growth during each period. Countries and regions as in Figure 8. When data refer to a region or group of countries, they refer to the aggregate output of the respective region or group (therefore, it is a statistic referring to the weighted mean of the region or group of countries which does not take into account within region/group variability.)

And in per capita terms:

FIGURE 10

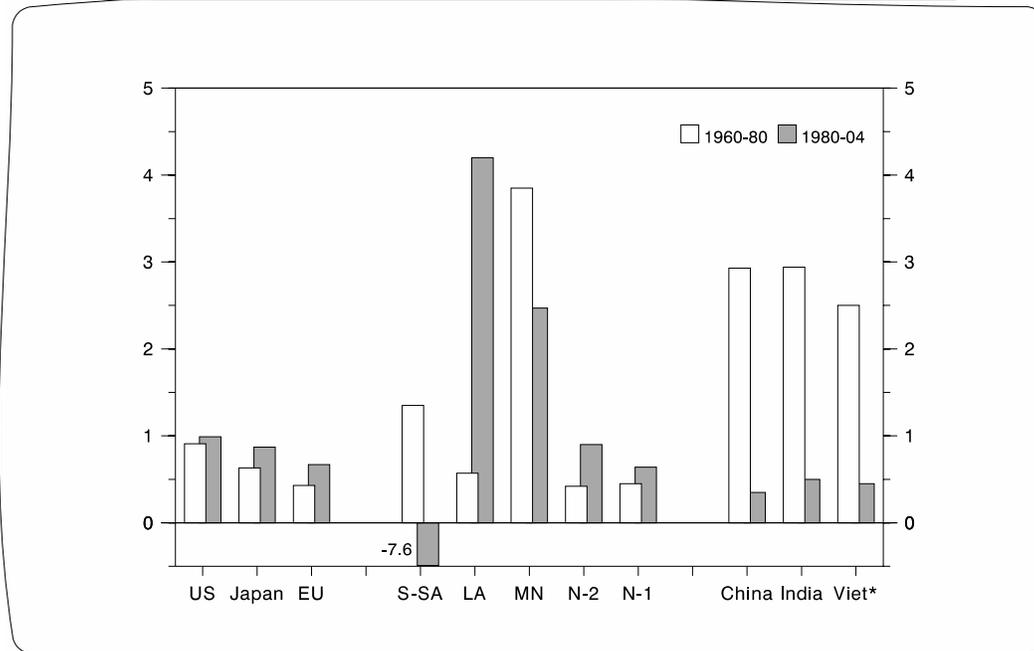
GDPpc growth: regional diversity, 1960-1980 and 1980-2004



- Countries and regions as in Figure 8.

FIGURE 11

GDPpc growth: coefficient of variation, 1960-1980 and 1980-2004

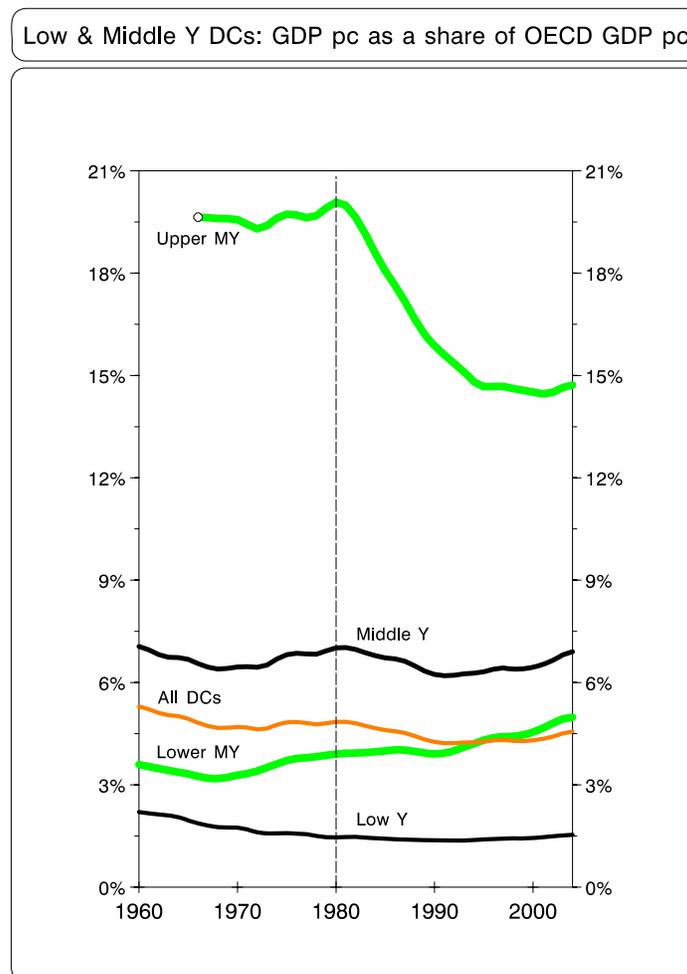


- Countries and regions as in Figure 8; coefficient of variation as in Figure 9.

4.- 'Catching-up'

In terms of the broad category of countries defined by the WDI, the 'Lower Middle Income' group of countries (including China) are the only ones that as a group are 'catching up' with the OECD countries. The 'Upper Middle Income' (including Mexico and Argentina), instead, lost a significant amount of ground after 1980.

FIGURE 12

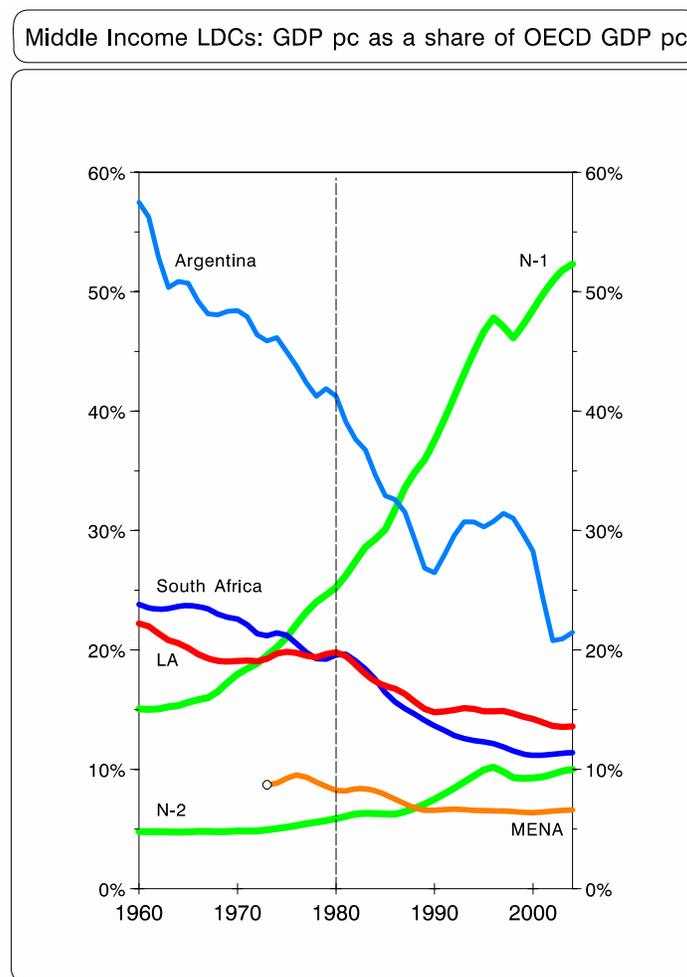


• Y = income; and DCs = developing countries. In the WDI database, Low-income economies are those in which the 2004 Gross National Income (GNI) per capita was \$825 or less. Lower-middle-income economies are those in which 2004 GNI per capita was between \$826 and \$3,255. Upper-middle-income economies are those in which 2004 GNI per capita was between \$3,256 and \$10,065. 3-year moving averages; unless otherwise stated, data on graphs of this type throughout this paper will use this methodology.

Figure 13 classifies Developing Countries more loosely in the more

traditional 'Middle' and 'Low' income categories -- in this case having 7% of OECD GDP per capita as a cut-off point to distinguish both categories of categories. From this perspective, the former category includes the First- and Second-tier Newly Industrialising Countries of Asia (NICs -- N-1 and N-2 in the Figure, respectively), all of Latin America, South Africa and the Middle East and North Africa. As Figure 13 shows, only the East and South East Asian countries have shown any capacity to 'catch up' with the OECD countries.

FIGURE 13



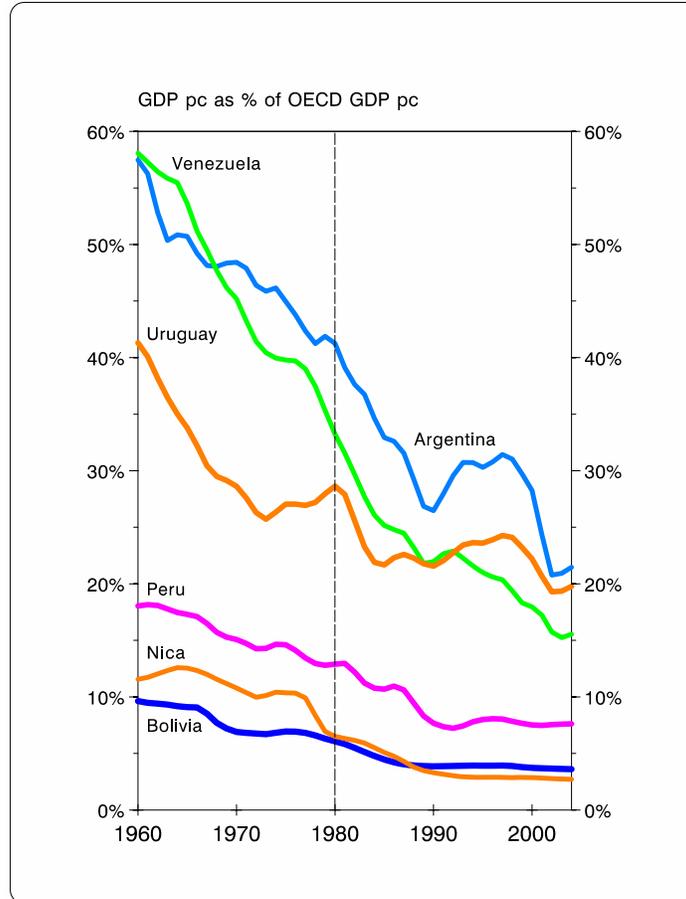
- N-1 and N-2 as in Figure 8.

The growth record of many Latin American countries in both periods is rather depressing. However, except for Venezuela, if anything the downhill trend seems to have been halted in some of them during the

1990s.

FIGURE 14

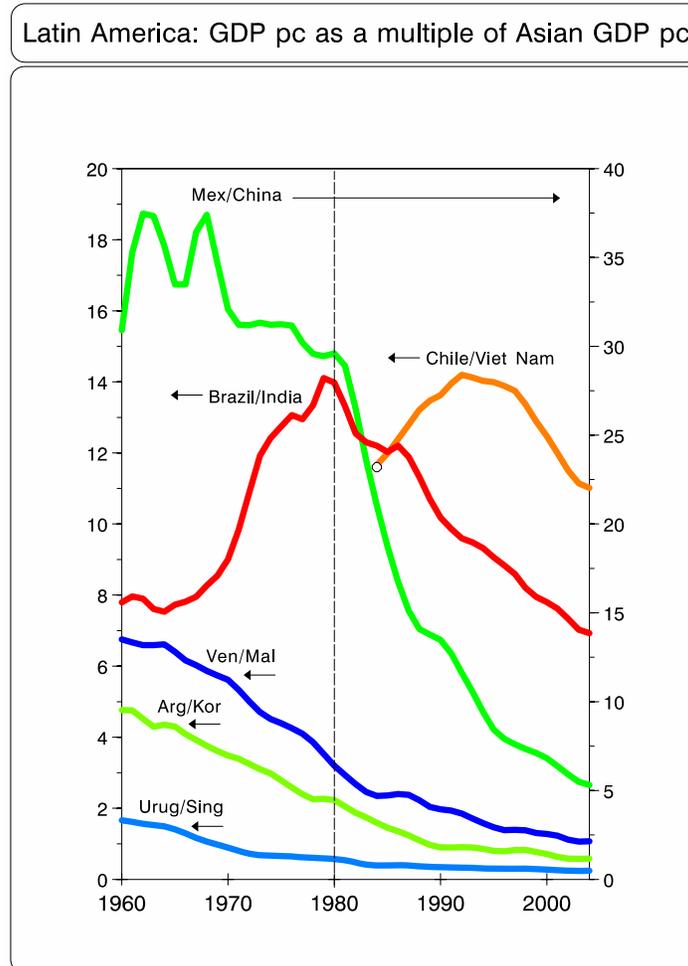
Latin America: 'cuesta abajo en la rodada' *



* 'Cuesta abajo en la rodada' is a quote from a famous tango (meaning going downhill.)

The different performance of Asia and Latin America brought about a rapid process of Asian 'catching up'.

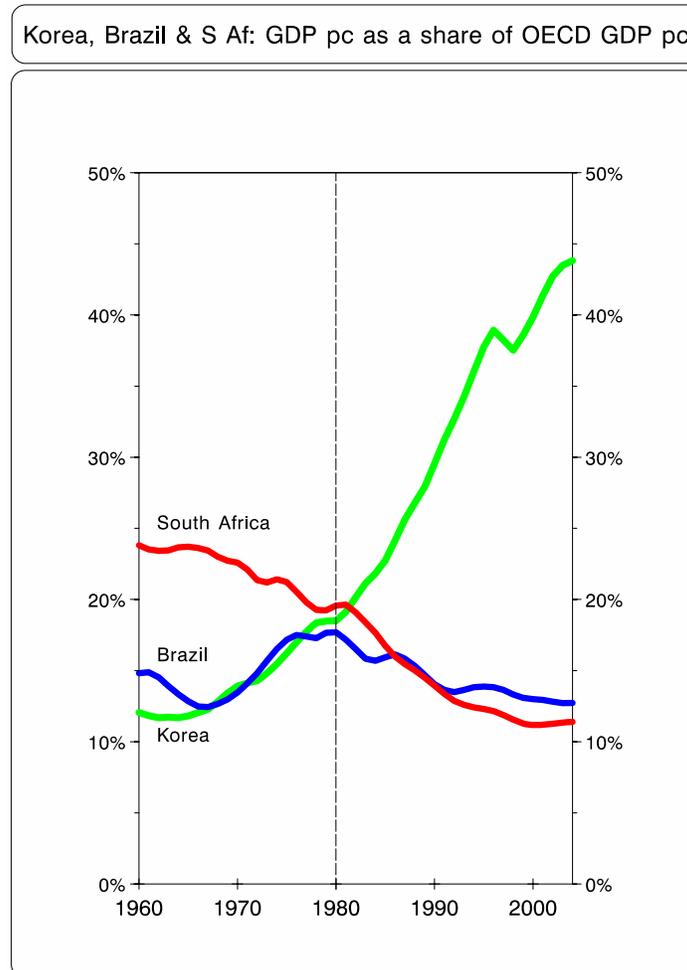
FIGURE 15



• **Mex** = Mexico; **Ven** = Venezuela; **Mal** = Malaysia; **Arg** = Argentina; **Kor** = Korea; **Urug** = Uruguay; and **Sing** = Singapore.

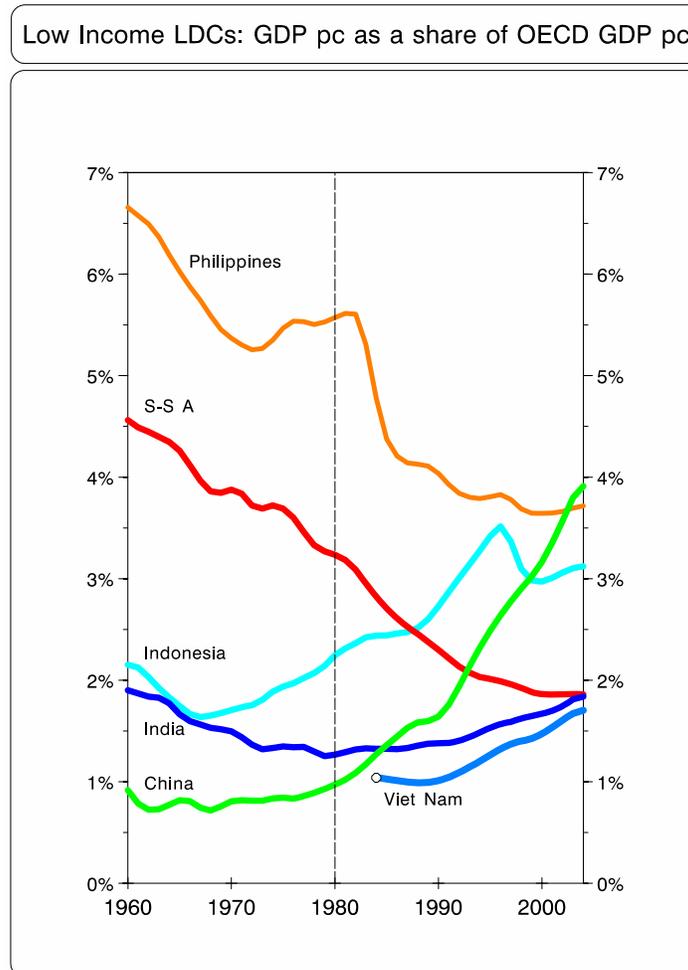
One remarkable (and often forgotten) fact is that three of the major Developing Economies -- Korea, South Africa and Brazil -- started the second period (1980-2004) with a very similar income per capita. What happened afterwards between Korea, on the one hand, and South Africa and Brazil, on the other, was rather dissimilar.

FIGURE 16



In turn, in the Low Income Countries (as in the Middle Income ones) only Asian countries managed to close the gap with the OECD countries in terms of their income per capita (except for the Philippines -- probably an honorary Latin American country).

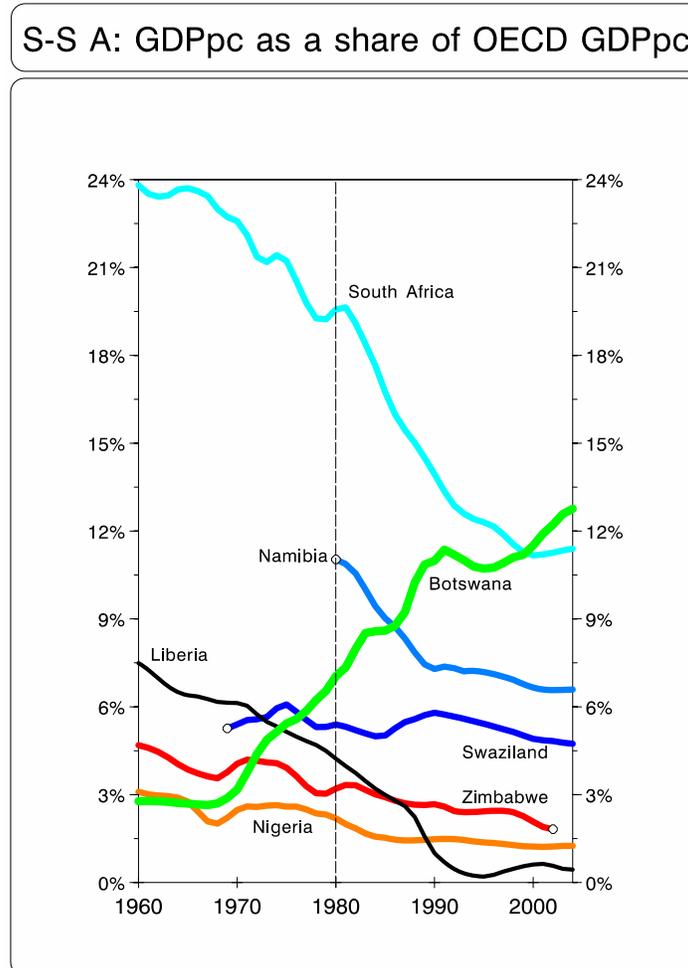
FIGURE 17



- S-S A = Sub-Saharan countries.

Finally, with the remarkable exception of Botswana, most Sub-Saharan countries also lost ground vis-à-vis OECD countries.

FIGURE 18

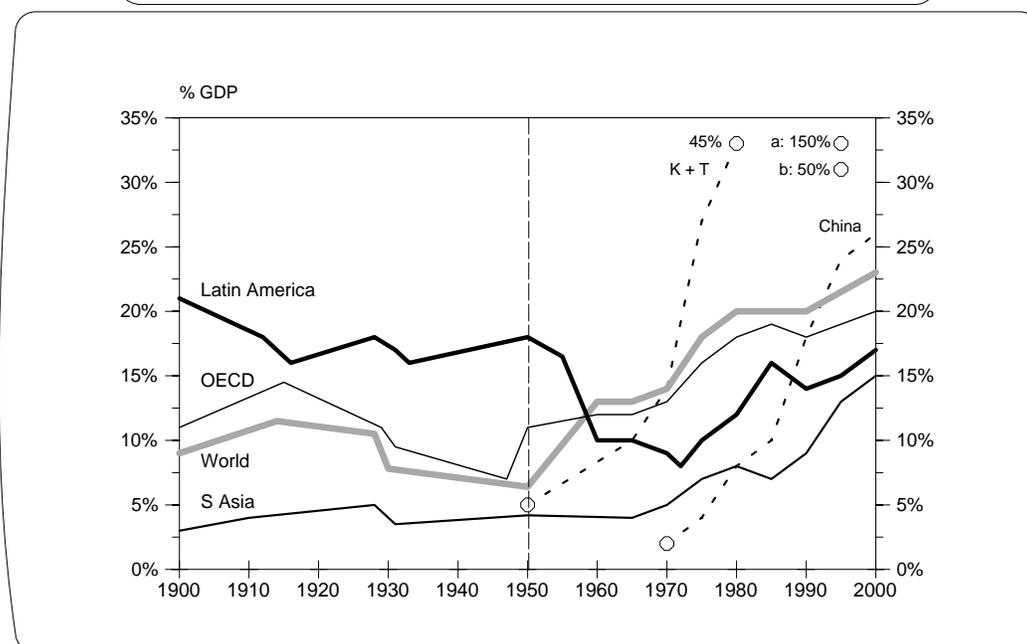


5.- Increased international economic integration in the world economy

One of the main characteristics of the post-Second World War international economy has been an increase in the share of exports in most countries' GDP, particularly in OECD and Asian countries. Figure 19 illustrates this phenomenon and the contrasting behaviour of Latin America.

FIGURE 19

Long Term Trends of the Ratio of Exports to GDP, 1900-2000



- **S Asia** = South Asia; **K+T** = Korea and Taiwan; **a** = Singapore, Hong-Kong and Malaysia; and **b** = Oil Middle East.

- **Source:** World Bank Data Base and World Bank, WDI (2003); current prices.

As Figure 19 shows, the trend towards an increased degree of international economic integration has differed across regions, with some East Asian countries having the fastest increase since 1950, and Latin America between 1950 and 1973 having the largest decline in GDP export-shares.⁷

⁷ For analyses of this Latin American decline in export-shares between the end of

6.- Economic reforms and the switch of the 'engine of growth' from Import Substituting Industrialisation (ISI -- or State-led development) to 'export-led' growth in many DCs

According to the 'Washington Consensus' programme of economic reform, one global effect to be expected from trade liberalisation is a rapid expansion of exports from DCs, including labour-intensive manufactures.⁸ The idea then is that this will, in turn, improve micro and macroeconomic performance and stimulate overall growth, since the economy-wide behaviour in DCs is assumed to depend quite critically on what happens in the export sector. Following this, for example, the traditional 'Washington Consensus'-type explanation for Latin America's (and Sub-Saharan Africa's) poor growth performance vis-à-vis many Asian countries (both 'old' and 'new' in terms of growth dynamics) focused mainly on lack of export orientation and/or export 'competitiveness'. However, although lack of export orientation and/or export 'competitiveness' (understood here simply as whether a country is gaining market shares in its export markets) was a key characteristic of Latin America's growth strategy before 1980, and may have been a main constraint for its growth process, it certainly can no longer be blamed for Latin America's remarkably poor growth performance after their post-1980 economic reforms.⁹

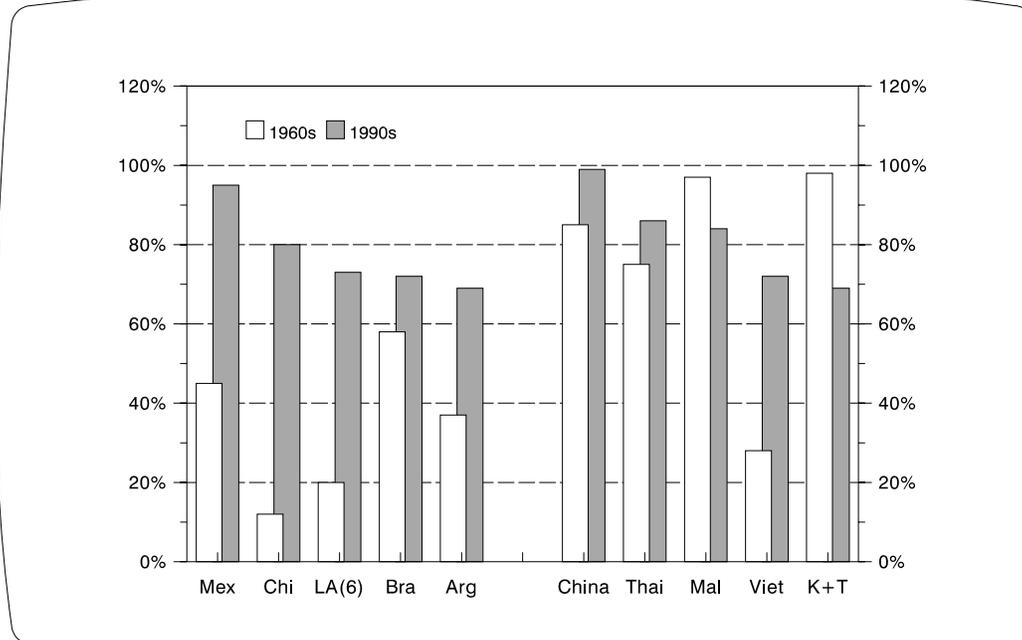
the Korean War and the mid-1970s, see Ocampo (2004), and Palma (2004).

⁸ One somewhat unexpected outcome of widespread trade liberalisation among DCs has been an increase in the concentration of exports, particularly manufactured exports -- in fact, today just nine countries account for about 90% of all manufactured exports from DCs. The nine LDCs (and their respective shares in 2004) are: China (23%), Korea (14%), Taiwan (13%), Mexico (12%), Singapore (11%), Malaysia (7%), Thailand (4%), Philippines (3%) and Indonesia (3%).

⁹ A point that will be confirmed below in the regression analysis.

FIGURE 20

East Asia and Latin America: percentage of exports that are 'competitive'



• **Mex** = Mexico; **Chi** = Chile; **LA (6)** = the six largest economies of the region, except for the four included in the Figure; **Bra** = Brazil; **Arg** = Argentina; **Thai** = Thailand; **Mal** = Malaysia; **Viet** = Viet Nam; and **K+T** = Korea and Taiwan. As mentioned above, 'competitive' exports are understood here simply as exports in which a country is gaining market shares during these decades.

Therefore, from this perspective the real difference between high-performing East and South East Asia and slow-growing Latin America can no longer rest in different capacities to penetrate international markets in their respective exports products, but rather in a significant difference in terms of their capacity to generate GDP growth out of high export 'competitiveness' and export expansion.

In other words, the crucial issue regarding growth performance since world-wide liberalisation of trade (liberalisation at least as far as DCs are concerned) and the switching of the engine of growth in most DCs to the export sector is that although DCs' exports have certainly increased -- reflecting the above mentioned generalised change in policy-orientation and resource allocation -- the effect that this export expansion has had on their process of growth has been mixed.

Basically, economic reform in most DCs has certainly succeeded in

moving their 'engine of growth' towards the export sector; however, for any engine to be at all effective, the power it generates must be properly 'harnessed'. One extreme example of failure in this respect is that of Mexico: during a period of nearly two and a half decades (1980-2004) a remarkably dynamic growth of exports (non-oil exports grew, on average, at 13.4% per year) has been associated with a surprisingly poor growth performance (an annual average rate of just 2.1%).¹⁰ Furthermore, as population grew at 1.6% during this period, GDP growth was negligible in per capita terms.¹¹

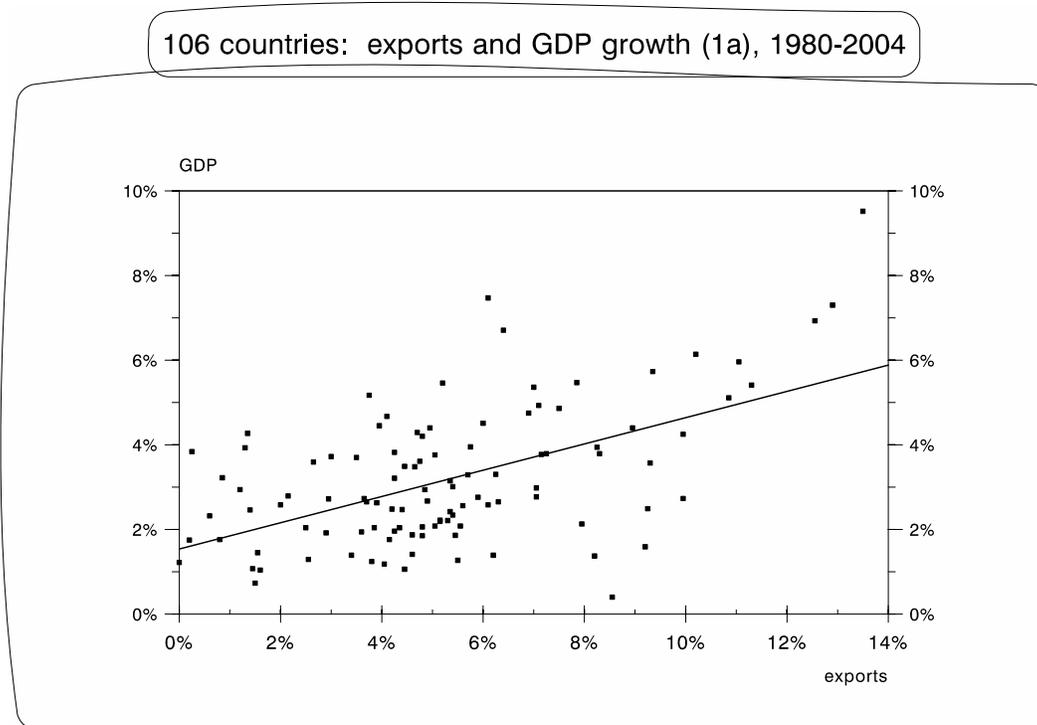
Therefore, the rest of this paper will concentrate in trying to unravel the 'musical chairs' issue from the point of view of analysing why some countries seem to be able to 'extract' GDP growth from export expansion while in others the 'export engine' is still far from being properly tuned.

¹⁰ See Figure 29 below. This rate is even lower if it is calculated using the national accounts at 1980 prices (see Palma, 2005a). Moreover, Mexico's export expansion took place in a context of both massive inflows of foreign direct investment (US\$ 200 billion since 1980) and practically unrestricted 'market access' to the United States -- the first two items on most DCs' growth agenda today.

¹¹ On average, just 0.04% per annum. Even if this period is restricted to 1984-2004 -- i.e., starting from the bottom of the early 1980s recession rather than from the peak of the previous cycle (1980) -- this rate increases to just 0.086%. This remarkably slow rate of growth of GDP per capita contrasts with that achieved during its previous politically 'populist', financially 'repressed', and economically 'distorted' four decades (1940-81). During those years, Mexico (with a much faster rate of population growth) had achieved a rate of income per capita growth of 3.5% per annum. There is little doubt that at the time of its 1982 financial crisis, Mexico needed a major political, economic and institutional re-engineering; however, of the alternatives it had, the one chosen does not seem to have been the most effective. If before 1980, Mexico was doubling its income per capita every 20 years, now Mexico would need no less than 160 years to double its income per capita again if the new 'relaxed' growth-pace of the last two and a half decades were to continue (see Palma, 2005a).

7.- 'Extracting' GDP growth from export expansion

FIGURE 21



- '1a' = growth-regression in which the only explanatory variable is the rate of growth of exports. The line is the linear regression between GDP growth and export growth (simply representing the conditional expectation of GDP growth given a certain level of export growth). Includes all countries for which there is data for both variables in WDI (2005).¹² The R^2 of the regression is 30% and the 't' statistic of the explanatory variable is 6.7 -- see Appendix.¹³

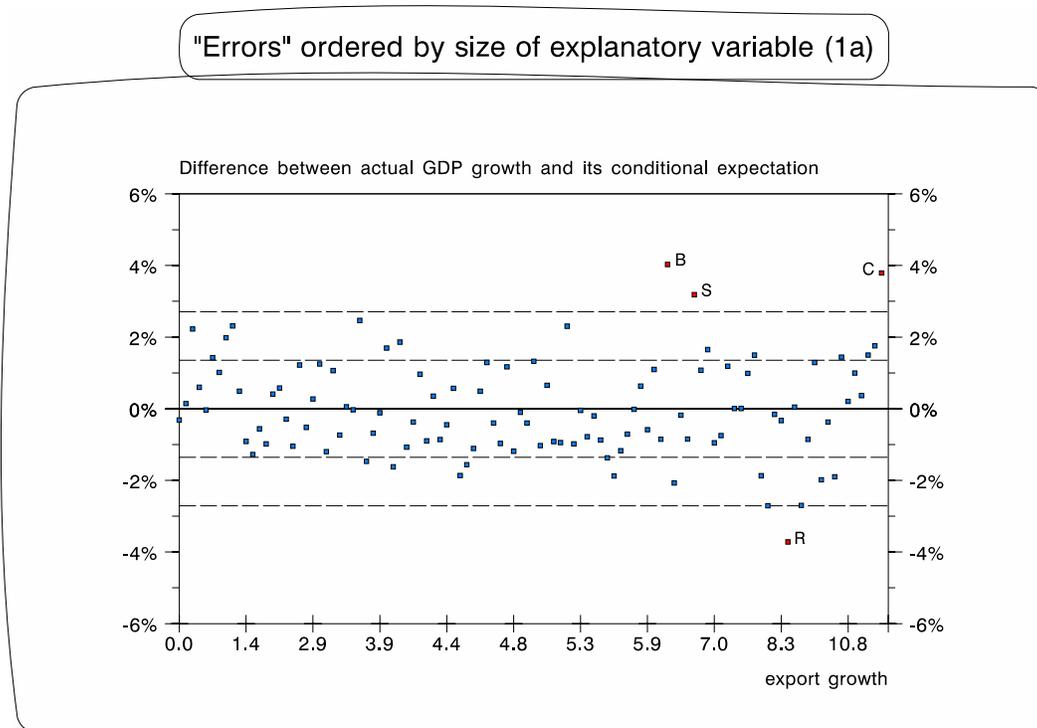
For such a parsimonious (although clearly underspecified) regression, the results are quite powerful. For example, the residuals it generates (the difference between actual GDP growth and its conditional expectation) have zero mean and are not heteroscedastic. Furthermore, there are only

¹² Except for four countries that were excluded due to the fact that they had negative rates of growth for GDP or for exports (or for both) for the whole period. These countries were the Democratic Republic of Congo, Haiti, Moldova and Suriname. As a result, the sample used in this regression (as well as in regressions '1b', '1c' and '2' below) contains 106 countries.

¹³ For critical analyses of this type of cross-country growth econometrics, see Rodrik (2005); Barro and Sala-i-Martin (2004); Rodrik, Subramanian and Trebbi (2004); Yanikkaya (2001); Easterly (2001); Rodríguez and Rodrik (2001); Easterly, Pritchett and Summers (1993).

four 'significant' outliers.¹⁴

FIGURE 22

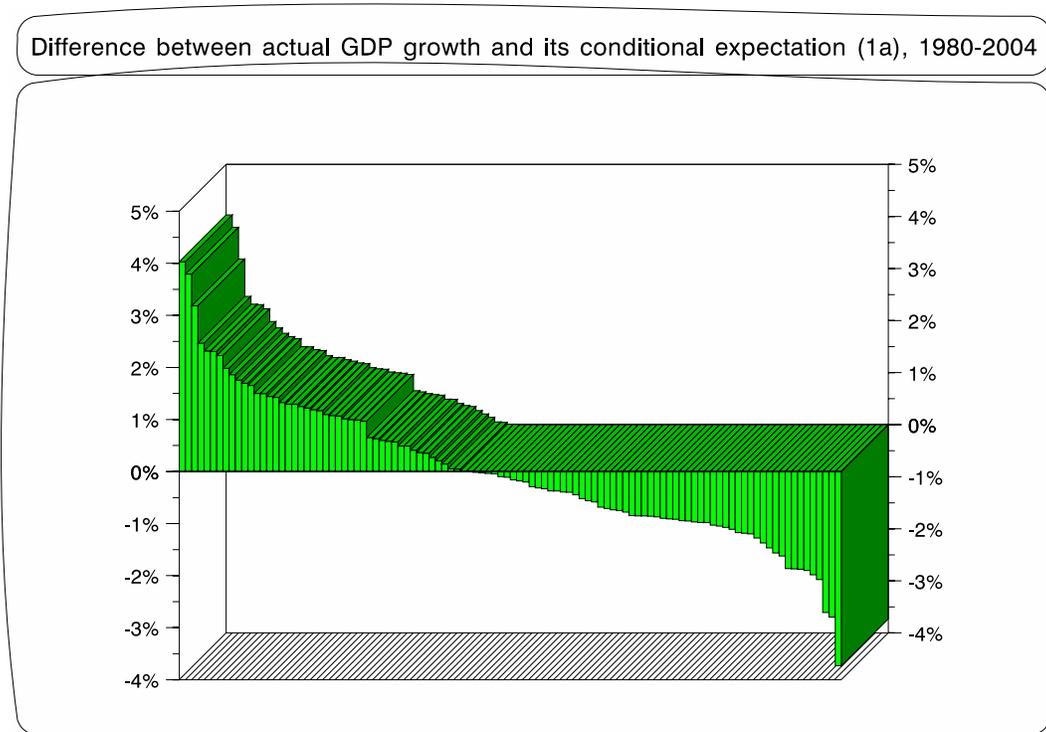


- The bands are mean plus one and two standard deviations. **B** = Botswana; **C** = China; **R** = Romania; and **S** = Singapore.

¹⁴ As is common in this type of regression, these outliers probably indicate which are the three most intriguing growth experiences in the whole sample! For the case of Botswana, see Tregenna (2006).

Another way to look at the residuals is to rank them according to the size of the 'error'.

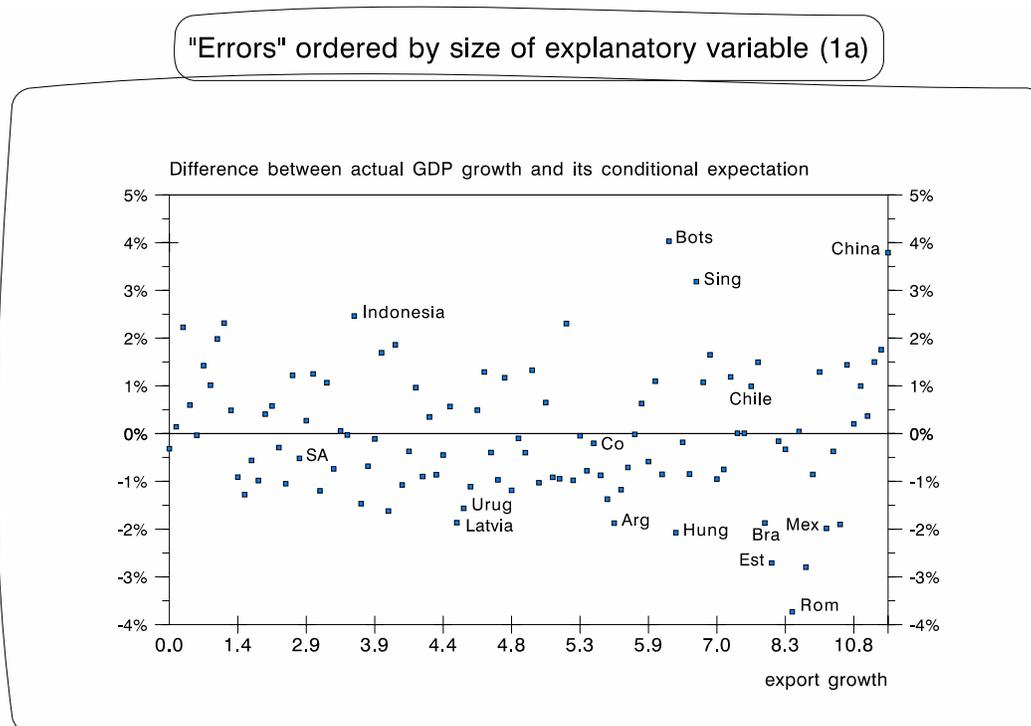
FIGURE 23



As in the previous Figure, this one also indicates how such a parsimonious regression generates such 'well-behaved' errors.

Returning to the graph in which 'errors' were ordered according to the size of the explanatory variable in order to identify more 'outliers', this indicates that the most remarkable growth 'underperformers' are the three larger Latin American economies -- Brazil, Mexico and Argentina -- and some 'Countries in Transition'.

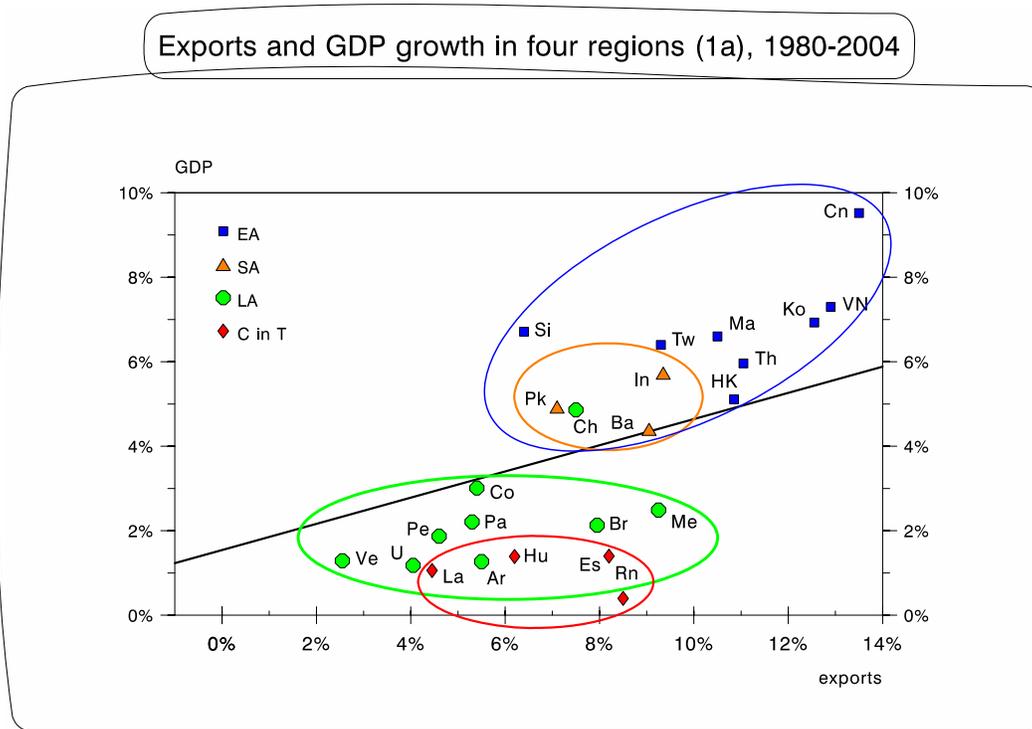
FIGURE 24



• **Arg** = Argentina; **Bots** = Botswana; **Bra** = Brazil; **Co** = Colombia; **Est** = Estonia; **Hung** = Hungary; **Mex** = Mexico; **Rom** = Romania; **SA** = South Africa; **Sing** = Singapore; and **Urug** = Uruguay.

From this perspective, the key issue seems to be why, say, with not that dissimilar rate of growth of exports (and not very different composition of exports) China has been able to generate since 1980 a rate of growth of GDP about 4 percentage points higher than its 'expected' growth (given its rate of growth of exports), while Mexico was only able to reach one that is two percentage points lower than that of its conditional growth. In other words, as Figure 24 suggests, one way at looking at the 'musical chairs' issue could be -- to use Greenspan's terminology -- to study why DCs have such different capacities to generate 'tracking' out of their export growth.

FIGURE 25

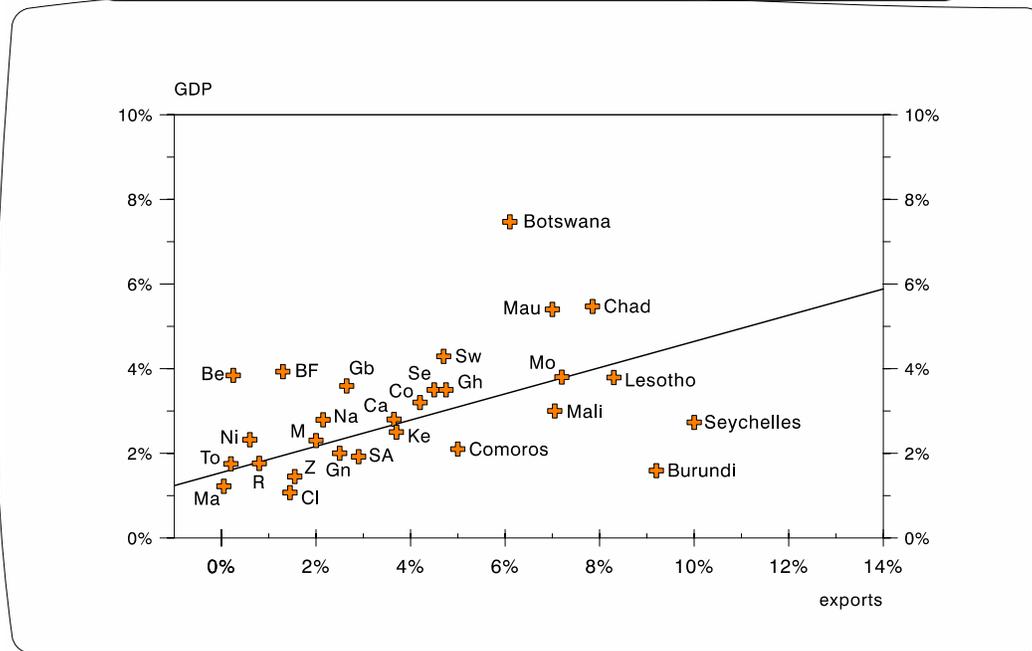


• **EA** = East Asia; **SA** = South Asia; **LA** = Latin America; and **C in T** = Countries in Transition. **Ar** = Argentina; **Ba** = Bangladesh; **Br** = Brazil; **Ch** = Chile; **Cn** = China; **Co** = Colombia; **Es** = Estonia; **HK** = Hong-Kong; **Hu** = Hungary; **In** = India; **Ko** = Korea; **La** = Latvia; **Ma** = Malaysia; **Me** = Mexico; **Pa** = Paraguay; **Pe** = Peru; **Pk** = Pakistan; **Rn** = Romania; **Si** = Singapore; **Th** = Thailand; **Tw** = Taiwan; **U** = Uruguay; **Ve** = Venezuela; and **VN** = Viet Nam.

One of the issues that emerge from Figure 25 is that there is a clear regional concentration of countries in Latin America, East, South East and South Asia and Countries in Transition when their growth performance since 1980 is looked at from the point of view of their export growth -- with Chile in the 'wrong' cluster. However, as Figure 26 indicates, this is not the case for Sub-Saharan Africa.

FIGURE 26

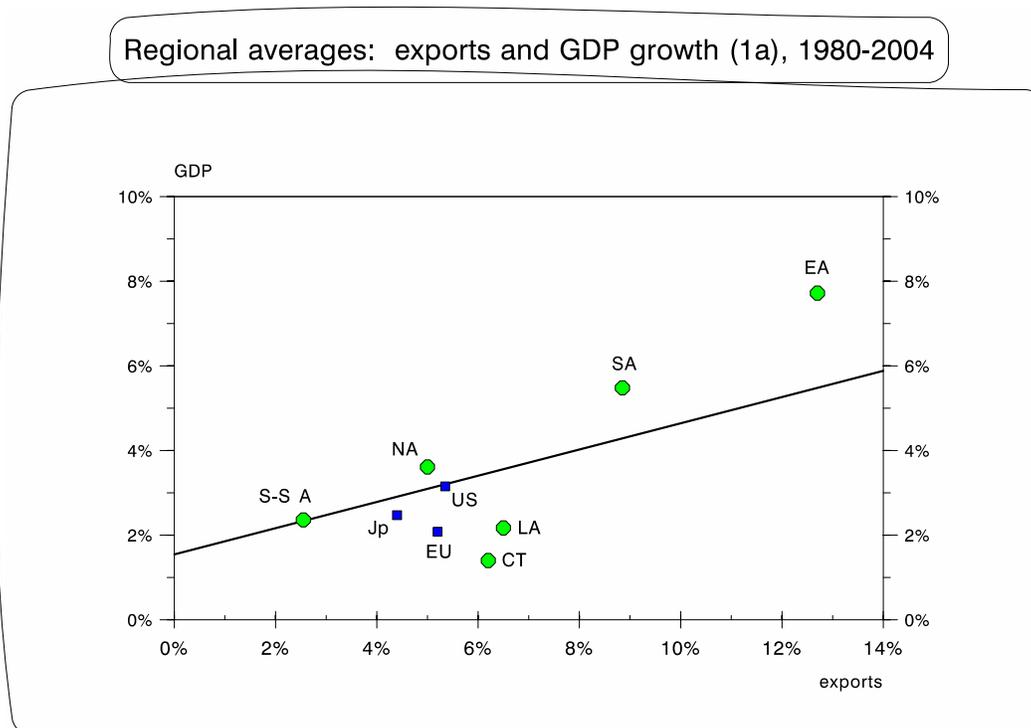
Exports and GDP growth in Sub-Saharan Africa (1a), 1980-2004



- **BE** = Benin; **BF** = Burkina Faso; **Ca** = Cameroon; **CI** = Cote d'Ivoire; **Co** = Republic of Congo; **Gb** = Gambia; **Gn** = Gabon; **Gh** = Ghana; **Ke** = Kenya; **M** = Madagascar; **Ma** = Malawi; **Mau** = Mauritius; **Mo** = Mozambique; **Na** = Namibia; **Ni** = Nigeria; **R** = Rwanda; **Se** = Senegal; **Sw** = Swaziland; **SA** = South Africa; **To** = Togo; and **Z** = Zambia.

This diversity in Sub-Saharan Africa's growth performance contradicts common perceptions of a supposedly homogeneous poor record of the region. In fact, countries do not only have a wide variety of GDP growth rates, but also (and as opposed to the other regions discussed above) they are distributed relatively evenly on both sides of the regression line.

FIGURE 27



• **CT** = Countries in Transition;¹⁵ **EA** = East Asia; **EU** = European Monetary Union; **Jp** = Japan; **LA** = Latin America; **NA** = North Africa and the Middle East; **US** = United States; **SA** = South Asia; and **S-S A** = Sub-Saharan Africa.

The countries above the line seem to show a degree of non-linearity as they increasingly outperform their conditional expectation at higher levels of export growth.¹⁶

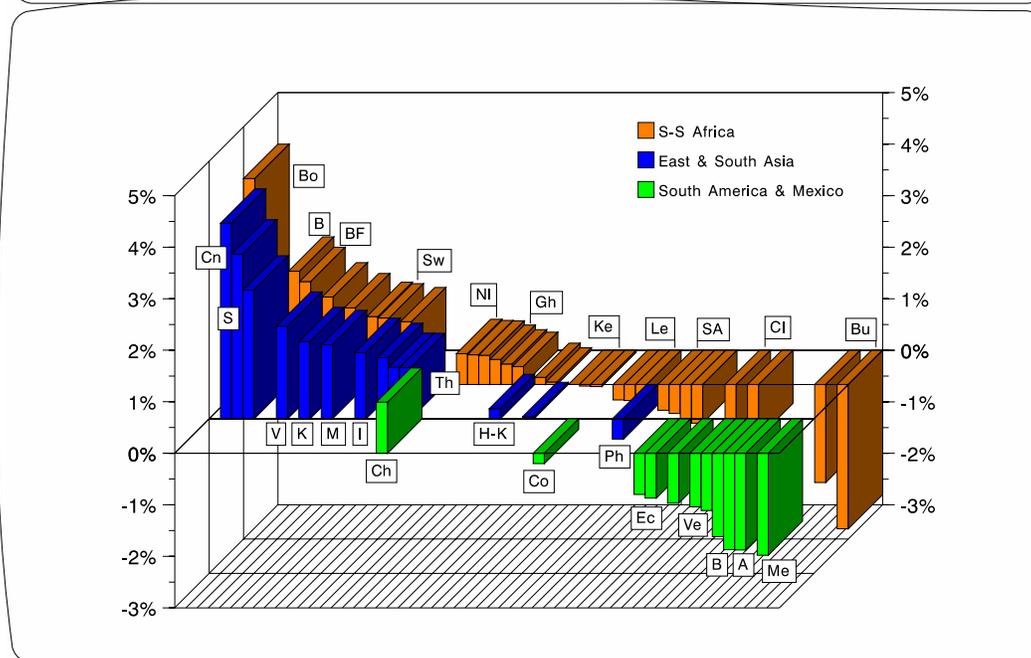
Figure 28 shows in more detail the regional concentration of growth/export performances in Asia and Latin America and the more even distribution of Sub-Saharan African countries.

¹⁵ As the WDI database does not provide an aggregate figure for the Countries in Transition, in this and other Figures below I used the median country of the five included in the sample as representative of this group; in this Figure the median-country is Hungary.

¹⁶ For the complex issue of non-linearities in growth regressions, see Rodríguez (2005). However, from a practical point of view, allowing for non-linearities has little statistical effects on the regressions carried out in this paper, especially in the preferred regression (regression '4').

FIGURE 28

Difference between actual GDP growth and its conditional expectation (1a), 1980-2004

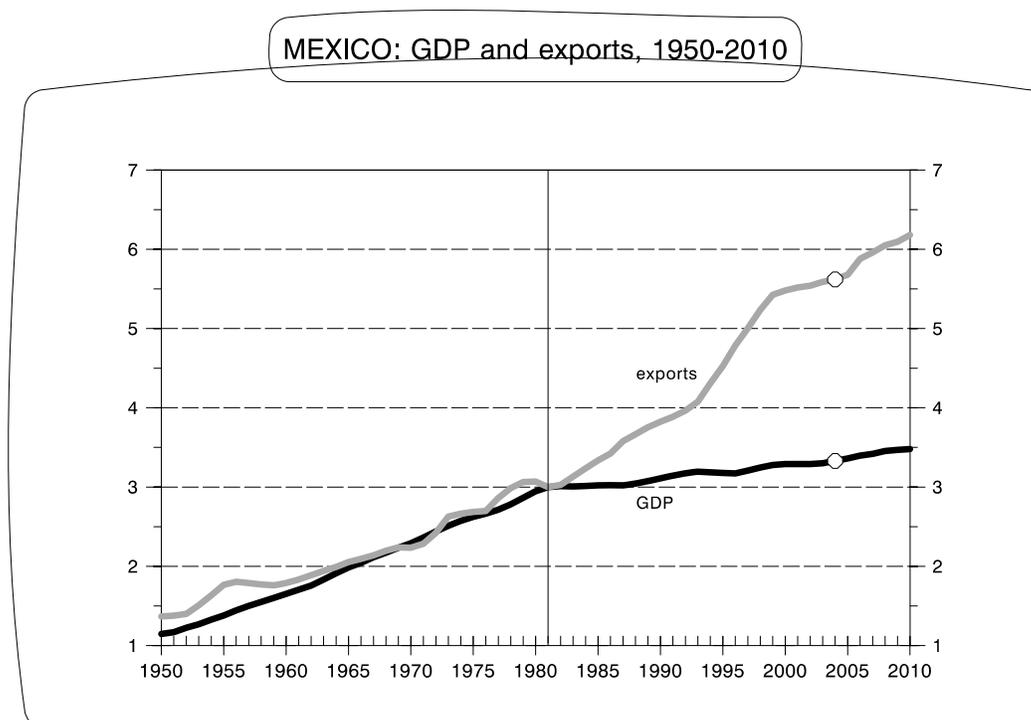


• **A** = Argentina; **B** = Benin; **Bo** = Botswana; **B** = Brazil; **BF** = Burkina Faso; **Ch** = Chile; **Cn** = China; **Co** = Colombia; **CI** = Cote d'Ivoire; **Ec** = Ecuador; **Ni** = Nigeria; **Gh** = Ghana; **H-K** = Hong-Kong; **I** = India; **Ke** = Kenya; **K** = Korea; **Le** = Lesotho; **M** = Malaysia; **Me** = Mexico; **Ph** = Philippines; **SA** = South Africa; **Sy** = Seychelles; **S** = Singapore; **Sw** = Swaziland; **Th** = Thailand; **Ve** = Venezuela; and **V** = Viet Nam.

It is rather remarkable that -- contrary to common perceptions -- when growth is looked at from this perspective, Mexico appears as the worst performer in Latin America (vis-à-vis its conditional expectation), and fifth from the bottom in all this sample of 106 countries!¹⁷ Figure 29 shows more clearly this 'Mexican disease'.

¹⁷ The only countries below Mexico are Hungary, Estonia, Burundi and Romania.

FIGURE 29



- Log scales. Exports do not include oil; 1980 prices. For the convenience of the graph, before transforming the data into logs the original data were first made into a 3-year moving average and then into index-numbers with 1981 as a base year (equal to 20.09; the Ln of this number is 3). 2005-2010, forecasts of the Economist Intelligence Unit.
- **Source:** Palma (2005a).

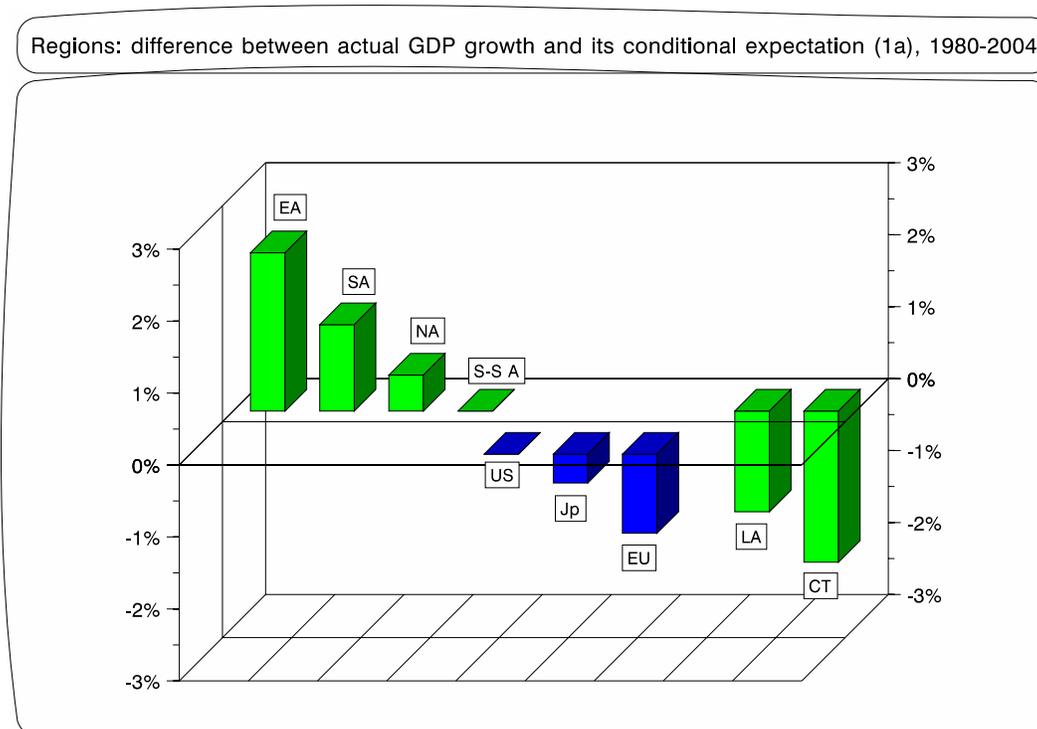
In the case of the Mexican economy, its inability to harness the power generated by its remarkable export expansion seems to be its most important economic failure since President De la Madrid implemented his radical trade liberalisation policies. In fact, as Figure 29 shows, not only did the long-lasting strong relationship between exports and GDP (built during ISI) practically disappear after 1981, but the sharp acceleration in the rate of growth of exports has been associated with a sharp decline in the rate of growth of the economy -- not exactly the promised land of the advocates of the reforms.¹⁸ In fact, when compared with the 1960-1980 period, the performance of 1980-2004 is surprisingly poor in all crucial macroeconomic variables (GDP growth, investment, productivity,

¹⁸ See especially PRONAFICE (1984).

employment, wages, etc.) except for the growth of exports.¹⁹ In particular, the collapse of the ratios of the rate of growth of GDP to that of exports (from 0.9 to 0.1)²⁰ and of investment are remarkable (see below).

Figure 30 indicates the average regional 'error', confirming Latin America's poor 'export-tracking' capacity (and those of the Countries in Transition and the European Monetary Union).

FIGURE 30



• **EA**= East Asia; **SA**= South Asia; **NA** = North Africa and the Middle East; **S-S A** = Sub Saharan Africa; **LA** = Latin America; **CT** = Countries in Transition (the median country in this case is Hungary); **US** = United States; **Jp** = Japan; and **EU** = European Monetary Union.

The main conclusion of this section is that although there is little doubt that after 1980 export growth was a major determinant of GDP growth (generating such a well-behaved parsimonious regression), there are two main issues that stand out. One is the different capacity of countries (and

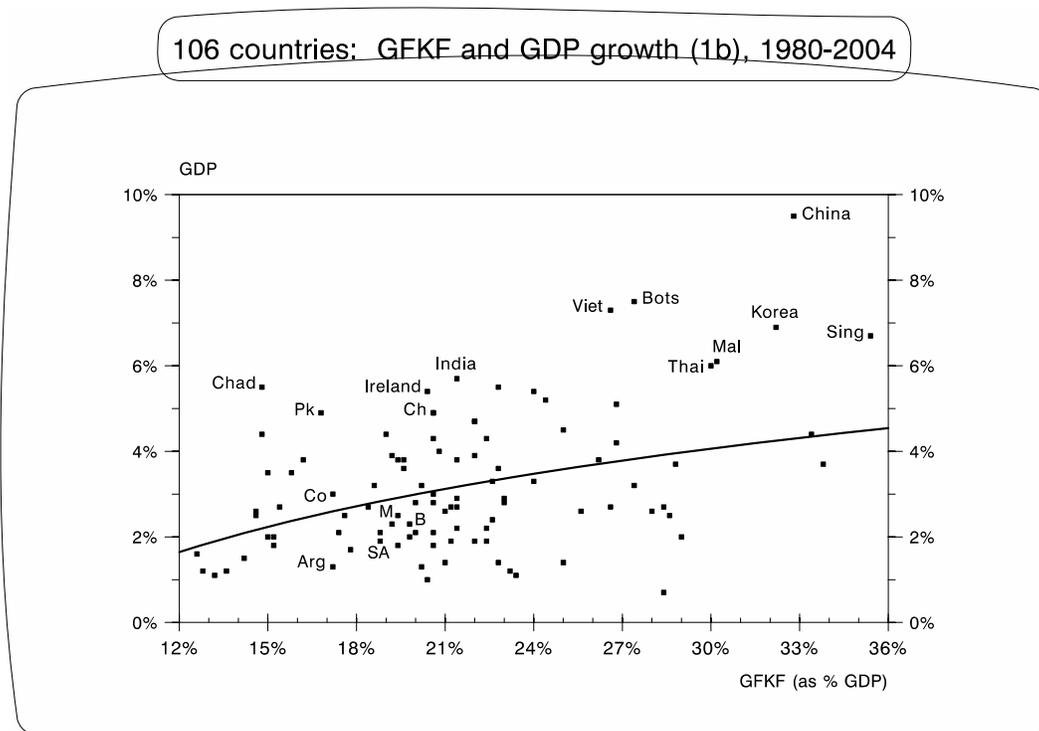
¹⁹ See Palma (2005a).

²⁰ These figures are based on its National Accounts at 1980 prices; the respective ratios in the WDI database at US\$ 2000 prices (World Bank, 2005) are 0.8 and 0.27.

regions) to harness the power generated by this specific engine of growth. The second is the sheer size of the 'errors' in the case of Asia (positive) and Latin America, Countries in Transition and the European Monetary Union (negative), indicating that exports are clearly not enough for the growth analysis of this period -- i.e., there is still a much richer story to tell. What was happening in terms of investment is obviously the next 'usual suspect'...

8.- Extracting GDP growth out of investment.

FIGURE 31

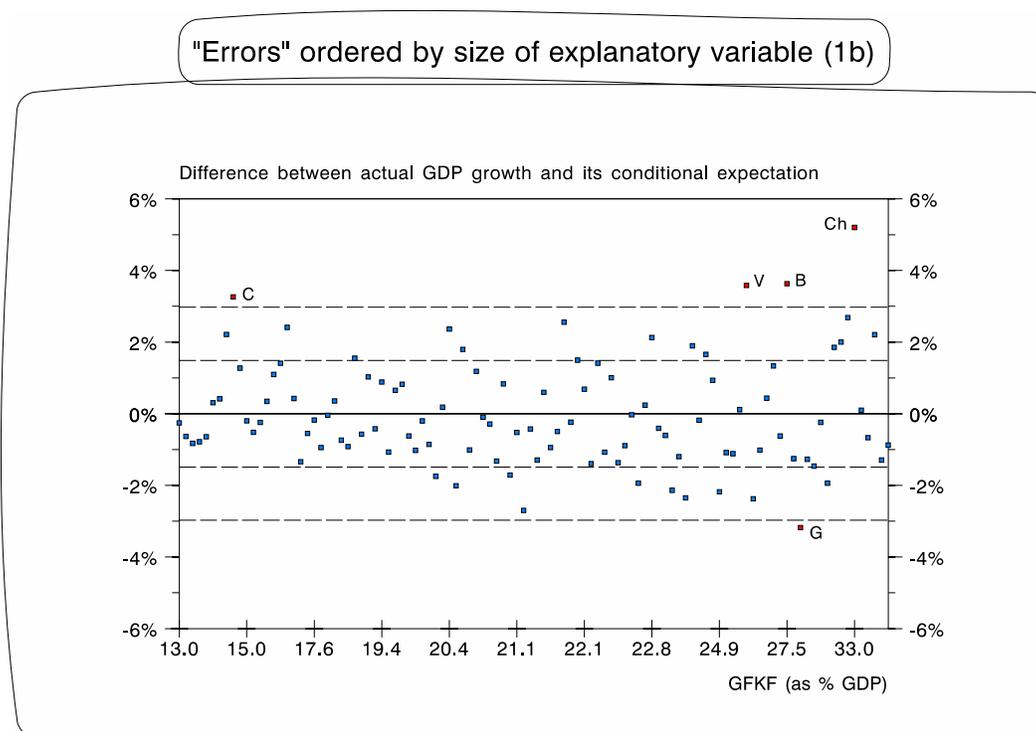


• **GFKF** = gross fixed capital formation. **'1b'** = growth-regression in which the only explanatory variable is the natural logarithm of the average value for the period of gross fixed capital formation (as share of GDP). The line simply represents the conditional expectation of GDP growth given a certain level of GFKF. Includes all countries for which there is data for both variables in WDI (2005).²¹ **Arg** = Argentina; **Bots** = Botswana; **B** = Brazil; **Ch** = Chile; **Co** = Colombia; **Mal** = Malaysia; **M** = Mexico; **Pk** = Pakistan; **Sing** = Singapore; **SA** = South Africa; **Thai** = Thailand; and **Viet** = Viet Nam. For presentational purposes, two countries with GFKF above 36% of GDP are excluded from the graph -- Lesotho (44.2%) and St. Kitts and Nevis (45.3%).

²¹ Except for the four countries mentioned in footnote 12.

Although the R^2 of the regression is relatively low (16%), the 't' statistic of the explanatory variable is high (4.4) and the 'errors' it generates are rather well behaved (their mean is zero, they are not heteroscedastic and again there are only five 'significant' outliers).

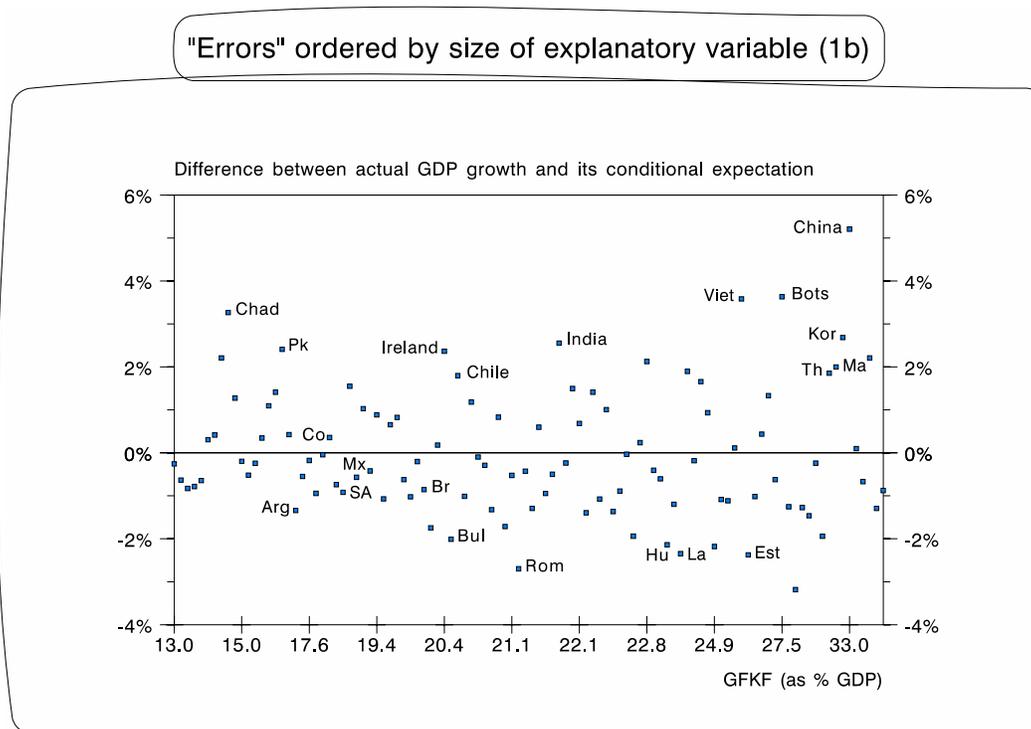
FIGURE 32



- The bands are mean plus one and two standard deviations. **B** = Botswana; **C** = Chad; **Ch** = China; **G** = Guyana; and **V** = Viet Nam.

Figure 33, in turn, identifies other 'outliers'; this indicates that from this perspective, 'Countries in Transition' are also some of the most remarkable growth 'underperformers'. However, regarding the other main 'underperformers' of the previous regression ('1a') -- the three larger Latin American economies of Brazil, Mexico and Argentina -- this time this regression is able to predict their growth record much better. That is, if the rate of growth of these three economies was massively underperforming in terms of their rate of growth of exports, it is certainly not doing it so much in terms of their (poor) investment record.

FIGURE 33



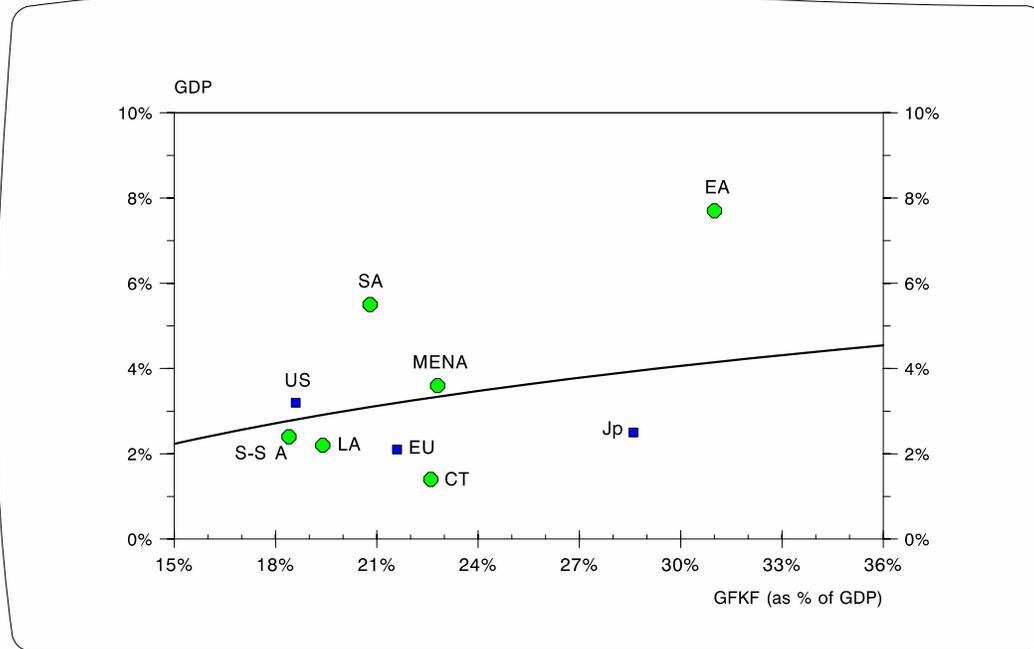
- **Arg** = Argentina; **Bots** = Botswana; **Br** = Brazil; **Bul** = Bulgaria; **Co** = Colombia; **Est** = Estonia; **Hu** = Hungary; **Kor** = Korea; **La** = Latvia; **Ma** = Malaysia; **Mx** = Mexico; **PK** = Pakistan; **Rom** = Romania; **SA** = South Africa; **Th** = Thailand; and **Viet** = Viet Nam.

Among other 'outliers' of this regression, in the top right hand corner, as expected, one finds several economies from East and South East Asia; the importance of this is that this indicates not only (the well-known fact) that they tend to be characterised by 'high growth-high investment', but also (the less well-known fact) that they outperform -- and by a significant margin -- their 'expected' growth given their high rate of accumulation. This clearly contradicts the Krugman-type criticism of the East Asian model as being one of 'just accumulation but no assimilation', or 'just sweat but no imagination'.

Also, India, Pakistan Ireland and Chile seem to be able to grow faster than what their relatively lower levels of investment (average for the period) would predict. Figure 34 shows the regional averages for this regression, confirming the fact that East and South Asia are well above the regression line while Latin America this time is relatively close to it.

FIGURE 34

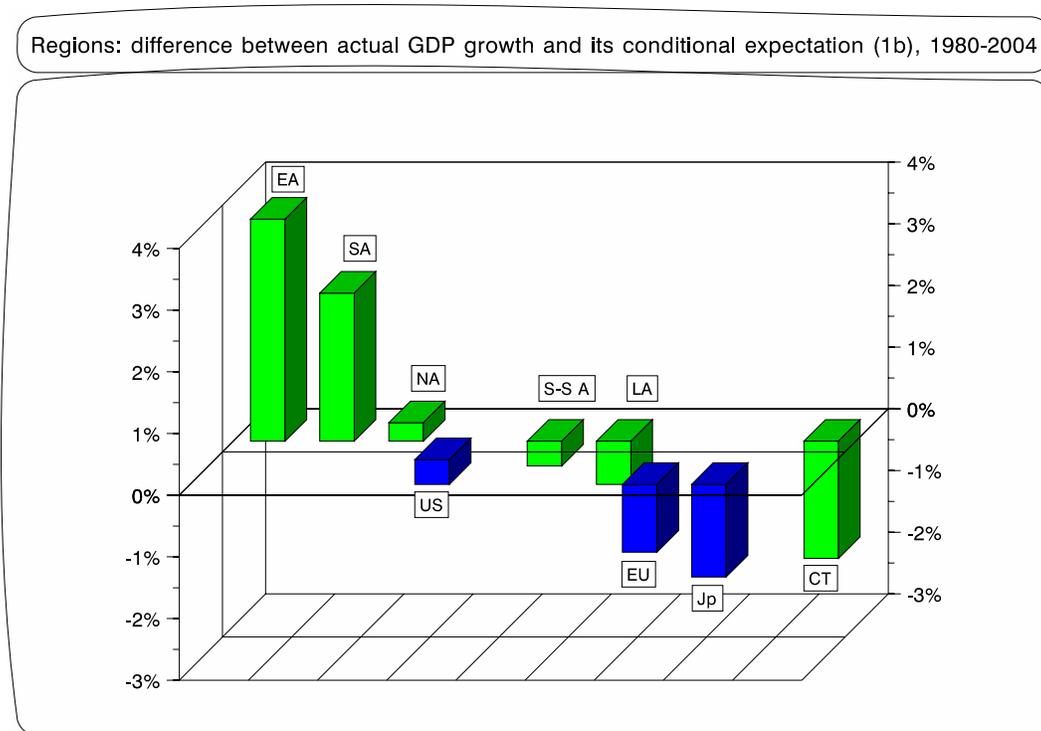
Regional averages: GFKF and GDP growth (1b), 1980-2004



• **CT** = Countries in Transition (Hungary is again the median country); **EA** = East Asia; **EU** = European Monetary Union; **Jp** = Japan; **MENA**; Middle East and North Africa; **LA** = Latin America; **SA** = South Asia; **S-S A** = Sub-Saharan Africa; and **US** = United States.

And Figure 35 shows the average regional 'errors'.

FIGURE 35



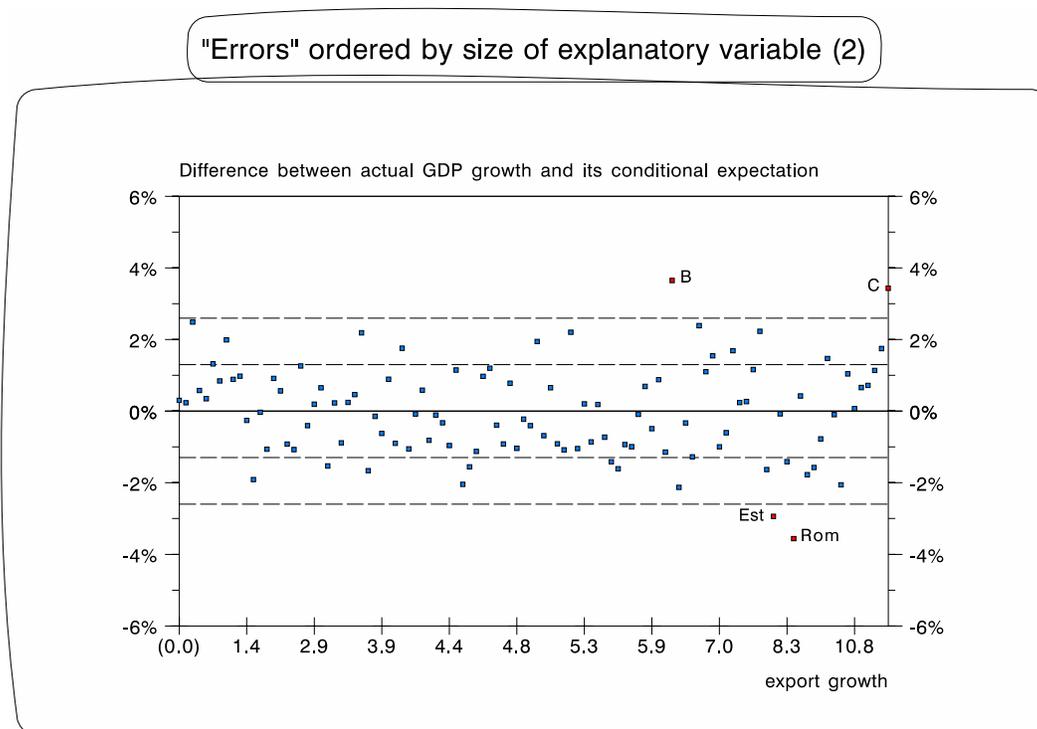
- **CT** = Countries in Transition; **EA** = East Asia; **EU** = European Monetary Union; **Jp** = Japan; **NA** = Middle East and North Africa; **LA** = Latin America; **SA** = South Asia; **S-S A** = Sub-Saharan Africa; and **US** = United States.

In other words, as in the case of exports, one way at looking at the 'musical chairs' issue could be to study why DCs have such different capacities to generate GDP-'tracking' out of their investment effort. For example, why, with similar rates of accumulation (of about 17%-18% of GDP) Pakistan can grow at 4.9%, but Colombia does so at 3% and Argentina at an average of only 1.3%? And the same for India and Brazil -- with similar rates of investment of about 20%-22% of GDP they grow at rates as different as 5.7% and 2.1%, respectively. However, as in the case of export growth, the size of the 'errors' for East and South Asia show that during this period (and for this sample) there is much more to growth than merely investment.

9.- Extracting GDP growth out of both export expansion and accumulation

It goes without saying that a more accurate way of analysing growth is via a regression that combines export growth and GFKF. This not only makes sense theoretically, but also from a statistical point of view as the degree of multicollinearity of both variables is rather low (30%). This low degree of multicollinearity also indicates that in most cases export growth *per se* does not necessarily 'crowd-in' investment. The case of East Asia seems to be the exception: once you have gone into the type of high-technology exports characteristic of the region, one can only be competitive if able to produce at the cutting-edge of technology -- and to be able to remain at that level, one has to invest at East-Asian levels. However, for other types of exports the linkages between the two variables seem to be much more tenuous.

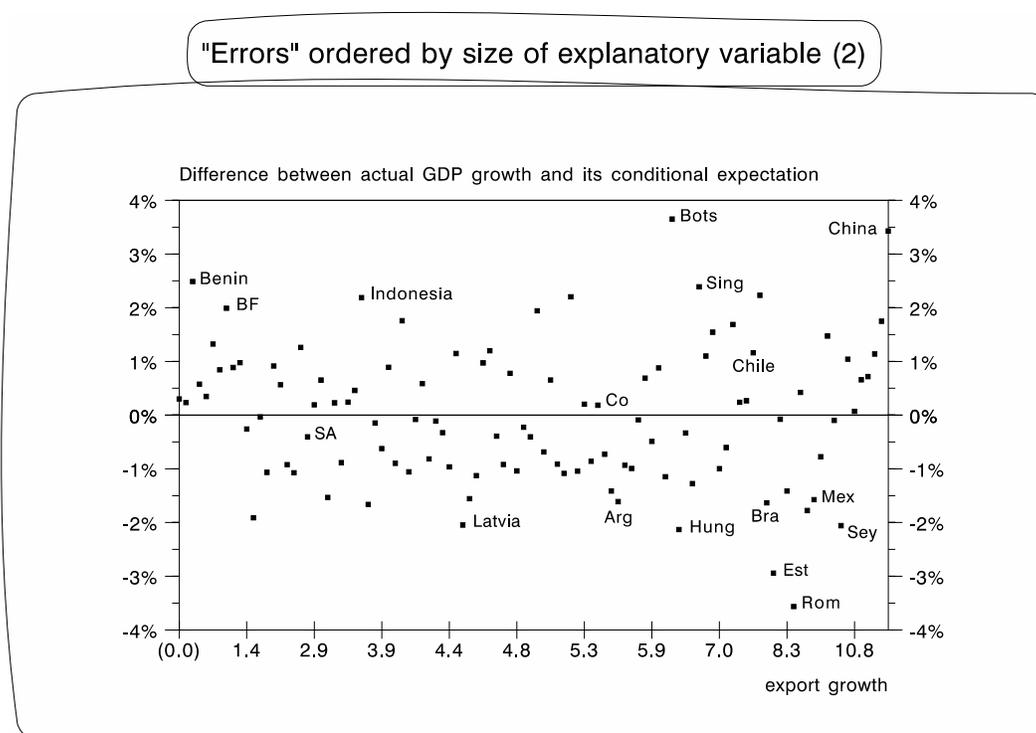
FIGURE 36



• '2' = growth-regression with export growth and the natural logarithms of GFKF (as share of GDP) as explanatory variables. **B** = Botswana; **C** = China; **Est** = Estonia; and **Rom** = Romania. As in previous graphs of this type, the bands are mean plus one and two standard deviations.

In this equation the R^2 is rather high (36%) and both 't' statistics of the explanatory variables are high (5.7 for exports and 3.1 for the Ln of GFKF -- see Appendix). Furthermore, as in previous regressions, the 'errors' that this regression generates are well behaved (their mean is zero, they are not heteroscedastic and now there are only four 'significant' outliers -- Botswana and China on the one hand, and Estonia and Romania on the other). Figure 37 identifies other outliers.

FIGURE 37



• **Arg** = Argentina; **Bots** = Botswana; **Bra** = Brazil; **BF** = Burkina Faso; **Co** = Colombia; **Est** = Estonia; **Hung** = Hungary; **Mex** = Mexico; **Rom** = Romania; **SA** = South Africa; **Sing** = Singapore; and **Sey** = Seychelles.

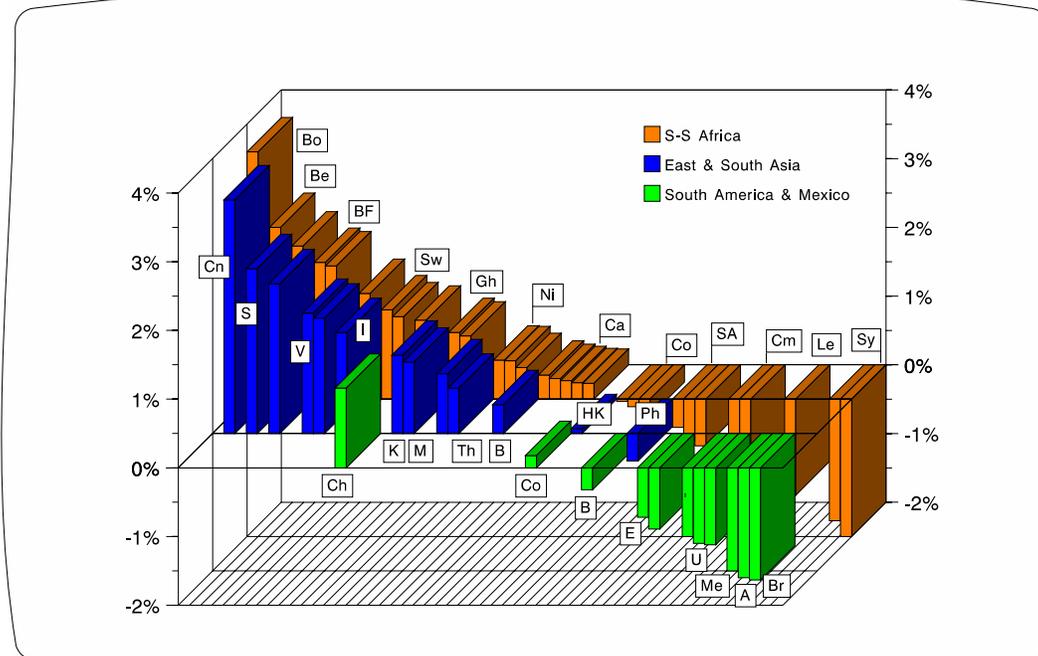
The outliers of this regression are almost the same as in the export-only one. Botswana, Singapore and China (with high rates of growth of exports and high levels of accumulation), and Indonesia, Benin and Burkina Faso (with relatively low levels of both variables) outperform in terms of growth given the contribution of these two variables. The big three in Latin America and some Countries in Transition, meanwhile,

under perform badly. Chile does outperform its conditional expectation, but within the one standard deviation band.

Figure 38, in turn, shows (as in previous regressions) the regional concentration of Asia (in the 'positive error' tail) and of Latin America (in the other one), as well as the more even performance of Sub-Saharan Africa.

FIGURE 38

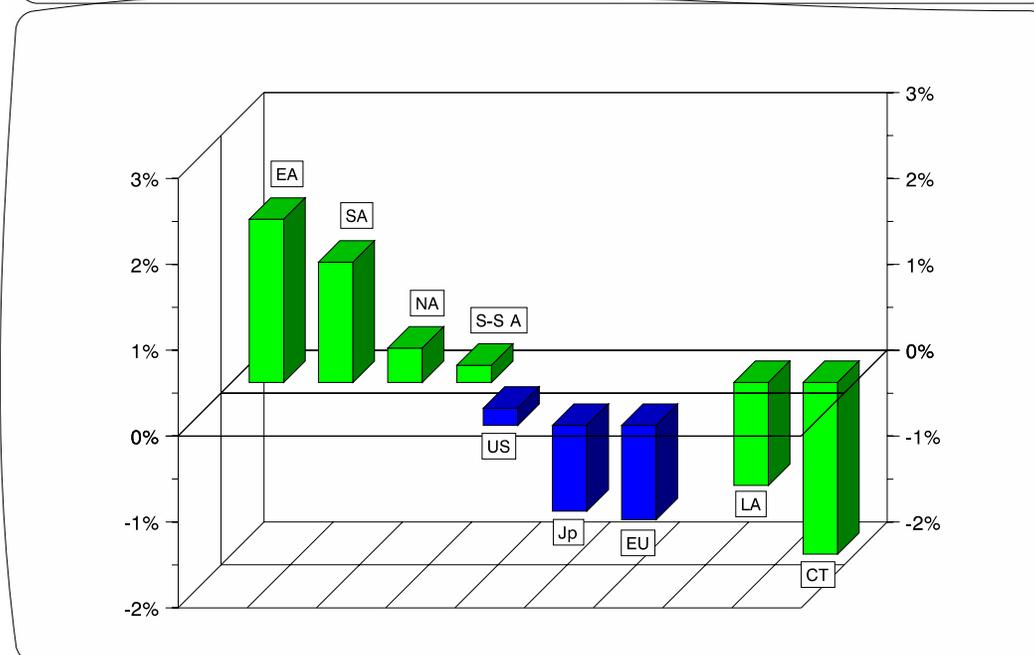
Difference between actual GDP growth and its conditional expectation (2), 1980-2004



• B = Bolivia; Br = Brazil; Le = Lesotho; and HK = Hong-Kong; other countries as in Figure 28.

FIGURE 39

Regions: difference between actual GDP growth and its conditional expectation (2), 1980-2004



• **CT** = Countries in Transition; **EA** = East Asia; **EU** = European Monetary Union; **Jp** = Japan; **NA** = Middle East and North Africa; **LA** = Latin America; **SA** = South Asia; **S-S A** = Sub-Saharan Africa; and **US** = United States.

The next step in this analysis is to look at the contribution of exports to GDP growth not just from the point of view of the rate of growth of this variable (exports), but also in terms of 'quantity' (i.e., degree of 'openness') and of 'quality' (type of products that are exported).

10.- Testing for 'quality' and/or 'quantity' of exports

A crucial additional issue to test is that of 'quality' vs. 'quantity' in exports. The two variables chosen for this purpose are the percentage of exports consisting of 'dynamic products' in OECD import-markets ('quality'), and exports plus imports over GDP ('quantity'). The first variable is the percentage of exports in 2000 made of products that had been 'demand-dynamic' in OECD imports between 1990 and 2000; i.e., products that

increased their share in OECD imports during these periods.²² As discussed elsewhere (Palma, 2006c), this variable can also be viewed as a proxy for the technology content of exports.²³

The result of this test is very conclusive; when adding these two variables to the preceding regression, the 'quality' variable is significant at well under the 1% level (either when added separately or jointly with the 'quantity' variable), while the 'quantity' variable is not (even at the 10% level; the 't' value of the latter is just 1.2 when added individually and 1.02 when added jointly with the 'quality' variable.) Therefore, from now on (equations '3' and '4') the 'quantity' variable is dropped and the 'quality' one is retained.

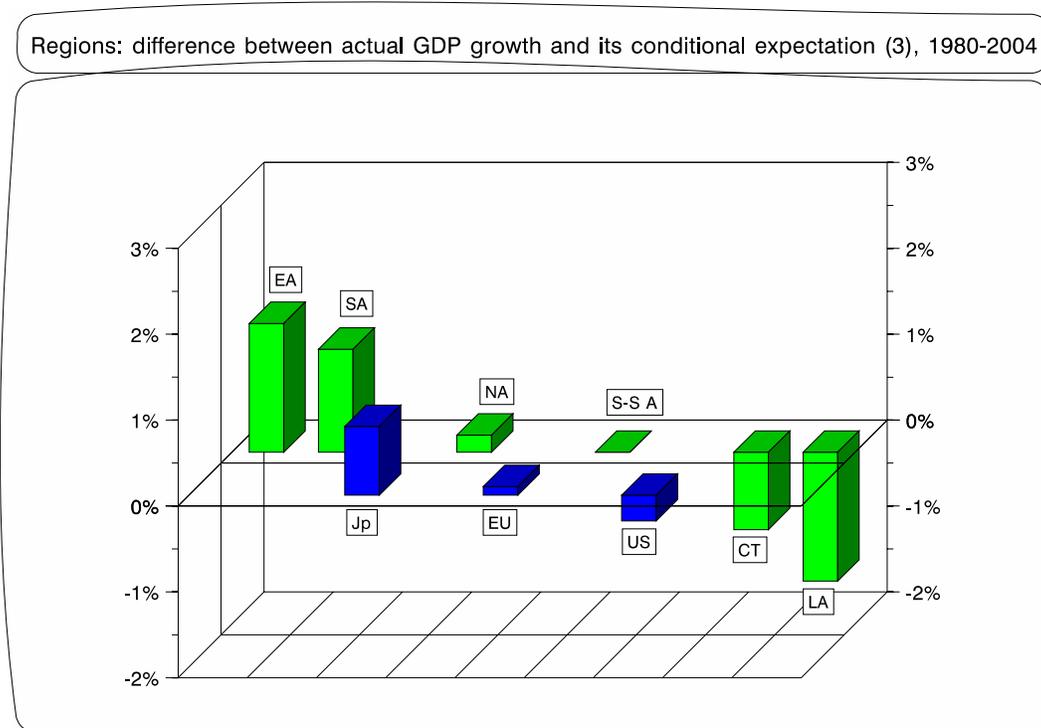
Briefly, adding the export-'quality' variable (with an additional interactive dummy for Europe and Japan) reduces the size of the error in several regions, especially in East and South Asia, Japan and the European Union (as well as that of Hungary, the median country in the small sample of Countries in Transition). However, it increases significantly the error for Latin America (because of the 'maquila-effect' -- these products increase the share of 'dynamic' exports of the region, but

²² The source for this data is the United Nations Com-trade on-line database -- made available through the CAN software (World Bank, 2003). The programme CAN was originally developed by Ousmene Mandeng at the United Nations' Economic Commission for Latin America and the Caribbean (ECLAC) in the 1980s; it has been updated periodically by ECLAC and the World Bank. CAN is a database application software which processes trade data for several countries (increasing from 88 in its first edition to 215 in the last one; however, unfortunately the last one excludes Taiwan) and 239 merchandise groups classified according to the Standard International Trade Classification (SITC), revision 2, at a 3- and 4-digit levels. The programme works on a three-year moving average basis. As statistical bureaucracies never like to make life easy, different versions of the programme and their updates start their coverage at different points in time: the first in 1963 (covering eventually until 1990), the second in 1977 (covering until 1995), and the third in 1985 (covering until 2000). Therefore, an analysis of the full 1963-2000 period can only be done by (the not very ideal solution of) mixing data from the different versions of the programme. Furthermore, as the original version only includes exports to and imports from OECD countries, the analysis will have to be restricted to exports to these countries; in 2000, world exports to OECD markets accounted for about two-thirds of total world trade. However, in the case of Latin America this share increases to 80%. Unless otherwise stated, this programme will be the source of all the trade statistics quoted in this paper, and all export-groups quoted will correspond to the SITC, version 2, classification at a 3-digit level.

²³ To my knowledge this 'quality' variable has not been used before in a growth equation of this nature.

due to the nature of its operations, they have little positive effect on growth).

FIGURE 40



- '3' = growth-regression with export growth, the natural logarithm of GFKF (as share of GDP) and export 'quality' (the natural logarithm of the percentage of exports in 2000 made of products that are 'demand-dynamic' in OECD imports during the 1990s; this variable is modelled including an interactive dummy variable for the high-quality-exports but slow-growing-countries of Europe and Japan). Countries and regions as in Figure 34.²⁴
- **CT** = Countries in Transition; **EA** = East Asia; **EU** = European Monetary Union; **Jp** = Japan; **NA** = Middle East and North Africa; **LA** = Latin America; **SA** = South Asia; **S-S A** = Sub-Saharan Africa; and **US** = United States.

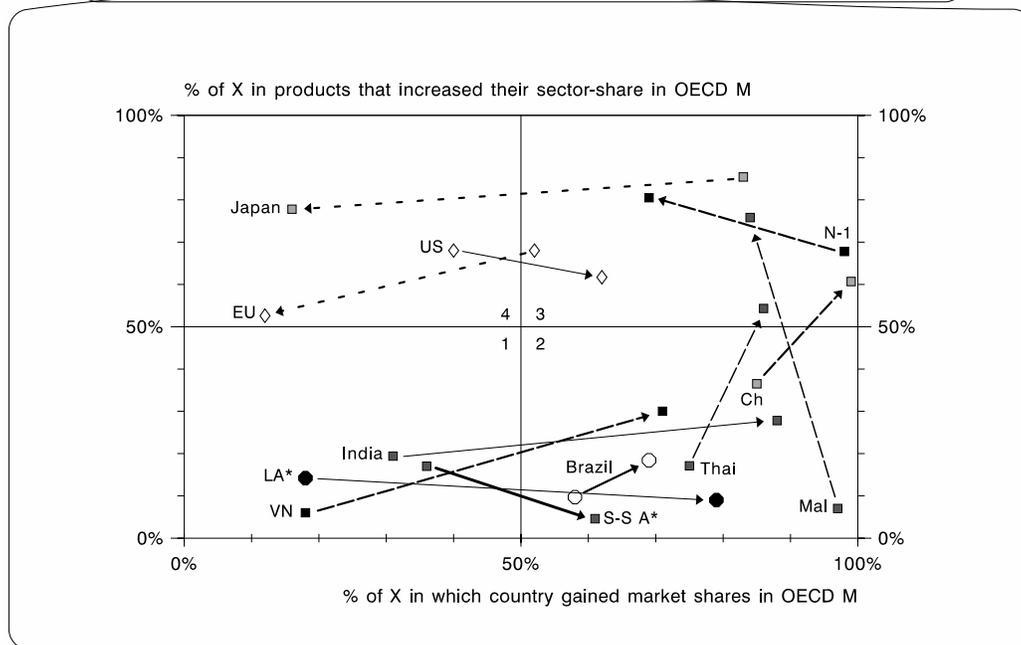
The Hirschman-type of argument relates to the fact that some types of export products have greater capacity ('quality') to generate linkages/

²⁴ Unfortunately, when including the variable 'quality' of exports in the growth equation, the sample of countries is reduced by ten (from 106 to 96) due to lack of data for these countries in the UN Com-trade database; the same problem will occur in regression '4' below. Of the ten countries lost, four are from Sub-Saharan Africa due to the fact that South Africa, Lesotho, Namibia, Swaziland and Botswana report their trade together (as the South African Custom Union; as South Africa is by far the main trading partner, the aggregate data is used as its country data); two are from Countries in transition (Estonia and Latvia -- as a result, in the sample there are now only three countries from this group; the figure quoted is that of the median country); one from Europe (Luxemburg); one from the Middle east (Iran); and two from the Caribbean (St. Kitts and Nevis and St. Vincent and the Grenadines).

positive externalities and spill-over effects/ productivity growth potentials/ technology ladders, etc. One way of looking at this issue is within the following perspective developed in detail in Palma (2006c).²⁵

FIGURE 41

'Anticlock-wise' export-trajectories between the 1960s & the 1990s



- **Ch** = China; **EU** = European Union (comprising of the 12 countries that were its members in the mid-1980s); **LA*** = all Latin America (excluding Brazil and 'maquila' Mexico and Central America); **Mal** = Malaysia; **N-1** = average of Korea, Singapore and Taiwan (due to restrictions with the CAN software, Taiwan's second observation corresponds to its share of 'demand-dynamic' products in 1995, and its degree of export-competitiveness between 1990 and 1995); **S-S A*** = Sub-Saharan Africa (excluding South Africa); **Thai** = Thailand; **US** = United States; and **VN** = Viet Nam.

- **First observation:** export profile of country or region between 1963 and 1971. **Second observation:** that between 1990 and 2000. **Vertical axis:** percentage of exports in 1971 of products that had been 'demand-dynamic' in OECD imports between 1963 and 1971 (first observation); and in 2000 of those products that had been 'dynamic' between 1990 and 2000 (second observation; 'dynamic' products are simply these that increased their share in OECD imports during these periods). **Horizontal axis:** percentage of exports in which the respective region or country gained market shares in OECD imports (is 'competitive') between 1963 and 1971 (first observation), and between 1990 and 2000 (second observation).²⁶

- Therefore, **Quadrant 1:** 'uncompetitive' country / 'non-demand-dynamic' export-products; **quadrant 2:** 'competitive' country / 'non-demand-dynamic' export-product;

²⁵ For an alternative way of looking at this issue of role of export 'quality' in economic growth, see Haussmann, Hwang and Rodrik (2005).

²⁶ Due to problems with data availability (see footnote 21), the initial period (called here the '1960s') only covers from 1963 to 1971.

quadrant 3: 'competitive' country / 'demand-dynamic' product; **quadrant 4:** 'uncompetitive' country / 'demand-dynamic' product.

- **Source:** Palma (2006c, using as a source for the data World Bank, 2003).

What regression '3' clearly shows is that (growth-wise) the upward movement from quadrant '2' to quadrant '3' -- i.e., to be able to change one's export bundle towards more demand dynamic products -- is the crucial one. However, it could be argued with reason that a strong rightward movement (from quadrant '1' to '2'; i.e., to be able to increase market shares in current 'non-dynamic' exports) may well be some sort of prerequisite for the upward movement. In fact, first- and second-tier NICs were well into high-competitive levels in their 'non-quality' exports before starting their upward movements.²⁷ Nevertheless, even if that were the case, obviously the key question is whether a strong rightward movement is a necessary as well as a sufficient condition for the upward movement from '2' to '3'.

From this perspective, the most crucial trade and industrial policy issue for DCs is whether there are 'endogenous' market forces in operation in quadrant '2' that would lead DCs (at least once they have moved well into quadrant '2' terrain) to increase their share of exports consisting of products that had become 'demand-dynamic' in OECD imports (leading them to move from quadrant '2' to '3'). Or whether market forces (of the static Ricardian comparative advantage type) would, at best, continue to lead them to become more and more 'competitive' in products that may well become more and more marginalised (in value terms) from world markets (due to low income elasticity of demand in the world market). In fact, especially in commodity markets, excessive 'competitive' struggle for market shares by DCs often lead to a self-defeating fallacy of composition problem.²⁸

As discussed in detail elsewhere (Palma 2006c), so far there is

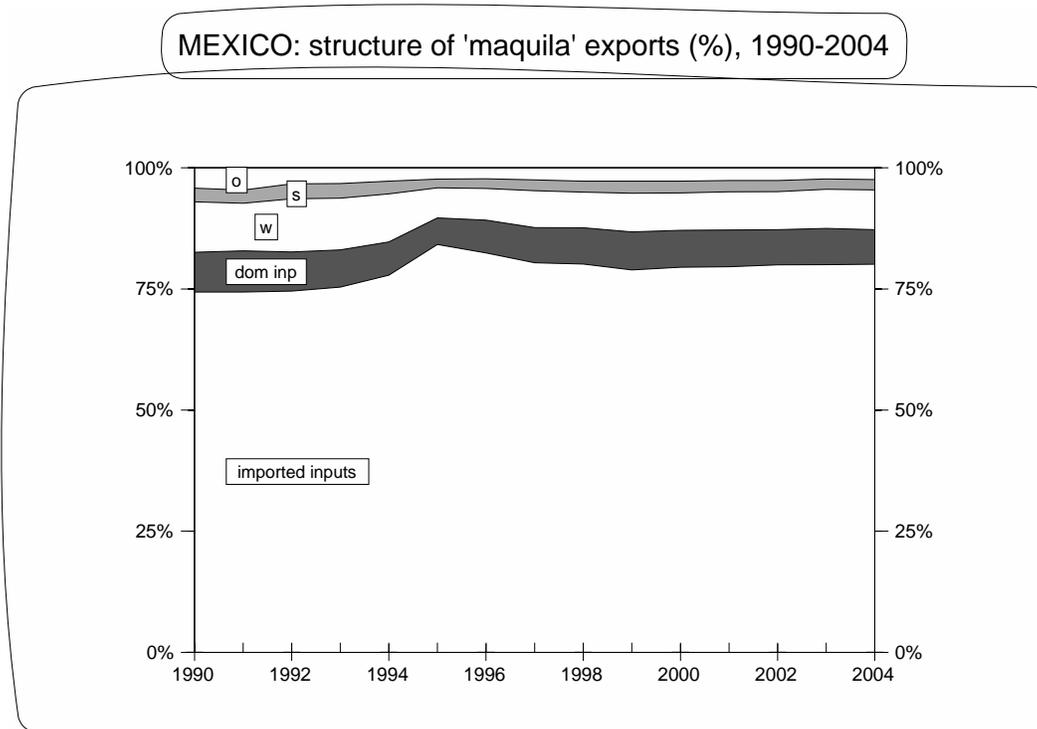
²⁷ In fact, one should never forget that when Korea took the decision to 're-invent' its export sector in the early 1960s, it had no 'competitiveness' problem with its excellent quality silk (by far the country's main export product at the time).

²⁸ For an analysis of the fallacy of composition issue, see Mayer (2003).

little, if any, evidence of 'endogenous' market forces at work that would lead countries into quadrant '3'. Therefore, in the absence of an 'endogenous pull' it is rather obvious that the DCs need the kind of 'exogenous push' implemented by the first- and second-tier NICs and now China that characterised such upward movement in those countries -- especially, but not exclusively, strong trade and industrial policies, stable and pro-tradable production exchange rates, and monetary policies and financial systems that can deliver both low and stable interest rates in an environment in which the corporate sector has preferential access to scarce finance. Finally, of course, DCs will also need the type of institutional arrangements found in some countries of East and South East Asia that can allow these 'exogenous' forces trying to lift the export sector from '2' to '3' to be effective -- especially a strong state, capable not only of coordinating investment efforts but also of 'disciplining' the capitalist elite (to use policy-induced rents productively) and able to withstand clientelist pressures from intermediate classes.

Finally, on the issue of whether DCs need to develop the capability to move rightwards into quadrant '2' first (before attempting the rise into quadrant '3'), Figure 41 indicates that there is an apparent exception to this rule -- e.g., Viet Nam. This country seems to have been moving in a 'north-east' (rather than simple 'eastwards') direction from very early on; however, this apparent 'premature lift' movement, as in the case of Mexico (not included in the graph) is due entirely to 'maquila'-type assembly operation (some times of high-technology products) with very little (if any) use of domestic inputs (see Palma, 2006a). Obviously, as Malaysia and Thailand have shown, there is nothing necessarily wrong with 'maquila'-type operations (or 'end-of-value-chain-assembly-activities') in the export sector if they become a stepping-stone for future 'deepening' of the production structure of these activities (leading to export-led industrialisation). However, as the Mexican experience clearly demonstrates, there seems to be little endogenous market forces leading 'thin' maquila assembly operations into more growth-enhancing 'deep' export-led manufacturing processes.

FIGURE 42



- **dom inp** = domestic inputs; **w** = remuneration to blue-collar workers; **s** = remuneration to white-collar ones; **o** = operating surplus. The top three components (wages, salaries and operating surplus) add up to gross value-added.

- **Source:** Palma (2005a; in the original source (INEGI), data is only available since 1990.)

It is difficult to imagine any other activity that has such weak direct production linkages (forward and backward) with the rest of the economy.²⁹ In fact, from the point of view of the Mexican economy as a whole, the 'value added' of this activity is basically a matter of both service-sector-level wages (paid to a large number of workers) and

²⁹ In a study of the television industry in Tijuana, for example, Carrillo (2002) shows clearly both sides of Mexico's manufacturing export led 'success'. On the one hand, in 2001 Mexico produced no less than 30 million TV sets, 90% of which were exported to the US (representing 78% of all TV imports into the US). On the other hand, Carrillo's calculations show that in value terms, 98% of inputs for the Mexican TV industry are either direct imports or 'indirect' ones (i.e., inputs that are supplied by other foreign firms operating in Mexico, which themselves import practically all of their inputs). In fact, Mexican companies only supply the remaining 2% of inputs (mostly cardboard boxes and plastic sheets needed for packaging and manuals). Regarding potential 'indirect' linkages, see Palma (2005).

service-sector activities incorporated into its products (transport, insurance, finance, telephony, water, electricity, etc.).³⁰

Can the absence in 'maquila'-type operations of endogenous market forces leading them into more 'deep' and growth-enhancing processes of industrialisation, and of market forces leading countries from quadrant '2' to '3' in general, be regarded as market failures? Although a detailed answer to this complex question falls outside the scope of this paper, (in terms of the language used in this type of debates) a brief summary of my understanding of this issue is that it is probably not a market failure from the point of view of 'local' (and multiple) equilibriums, but it certainly is in terms of 'global' equilibriums.

11.- Adding good old fashioned manufacturing

Two of the most significant developments in growth theory since the early 1980s are the shifts in emphasis from the role of accumulation of physical capital to that of human capital, and from the special growth-enhancing rôle of manufacturing to that of activities such as research and development.³¹ Furthermore, the new lease of life given to commodity exports by China's remarkable growth, and to services exports by India's recent success in this field (especially in information-technology and call centres) have reinforced the belief that in this new globalised world manufacturing has lost its unique 'Kaldorian' growth-enhancing characteristics. However, as this section will show, statistical evidence for the period since 1980 indicates that manufacturing still dominates growth equations of the type discussed here, giving support to well-known Structuralist-Kaldorian hypotheses that growth is still a 'product-specific' phenomenon and that manufacturing is still the best engine of growth in

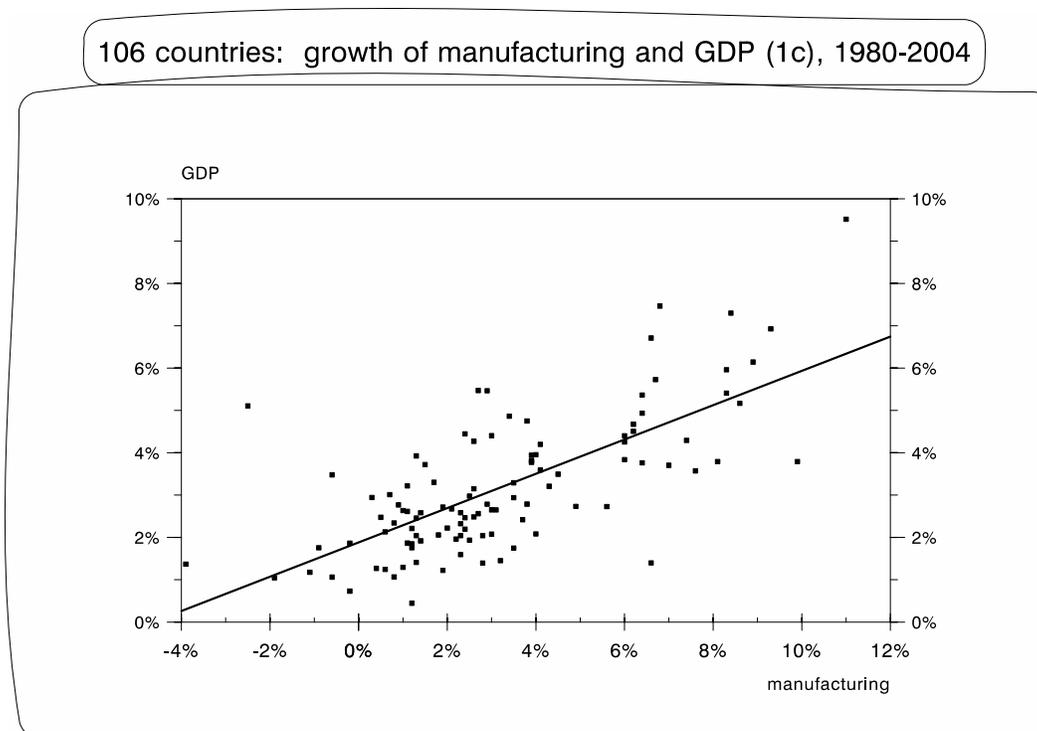
³⁰ For example, in terms of research and technology, very few foreign firms in the 'maquila' sector have set up design and development facilities in Mexico (see UNCTAD, WIR 2002).

³¹ For a classification of growth theories, see Palma (2005b); for overviews of new growth theories, see Barro and Sala-i-Martin (2004), and Blankenburg (2000 and 2004).

that direction.³²

Starting (as with exports and investment) with the most parsimonious equation possible, Figure 42 indicates how well the variability of the rate of growth of manufacturing (statistically) explains that of the rate of growth of GDP.

FIGURE 43



• '1c' = growth-regression in which the only explanatory variable is the rate of growth of manufacturing output. The line simply represents the conditional expectation of GDP growth given a certain level of growth of manufacturing. Includes all countries for which there is data for both variables in WDI (2005).³³

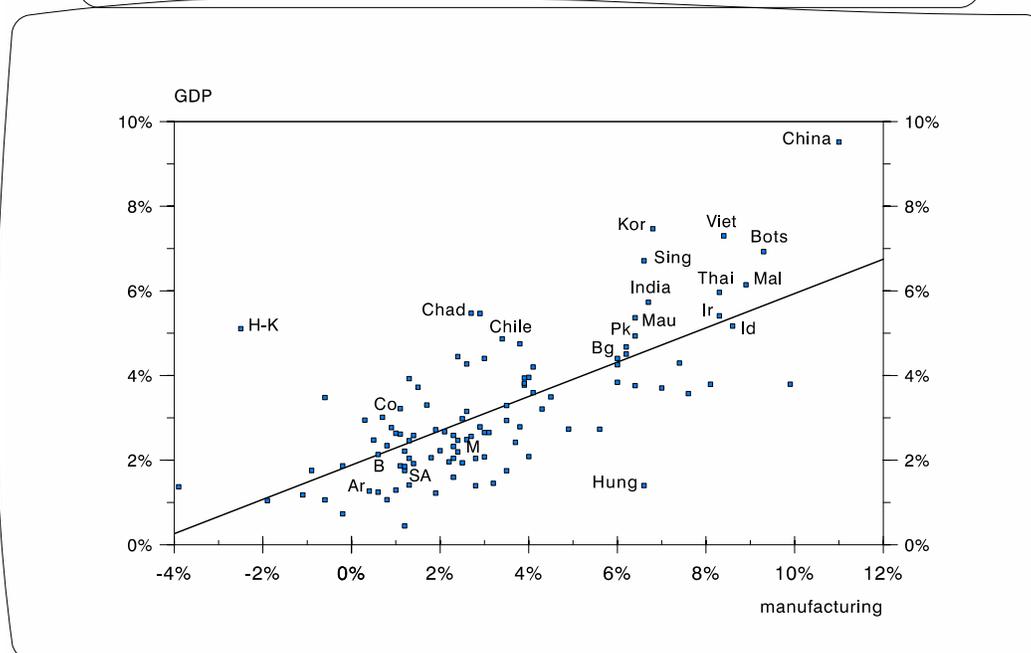
In fact, of the three single-explanatory variable equations discussed in this paper, that of manufacturing has by far the largest R^2 (50%) and the highest 't' statistics for the explanatory variable (10.2) -- see Appendix.

³² For two recent studies that attempt to bring back 'Kaldorian dynamics' into the centre of growth analysis, see Rada and Taylor (2004), and Ocampo (2005).

³³ Except for the four countries mentioned in footnote 12.

FIGURE 44

106 countries: growth of manufacturing and GDP (1c), 1980-2004

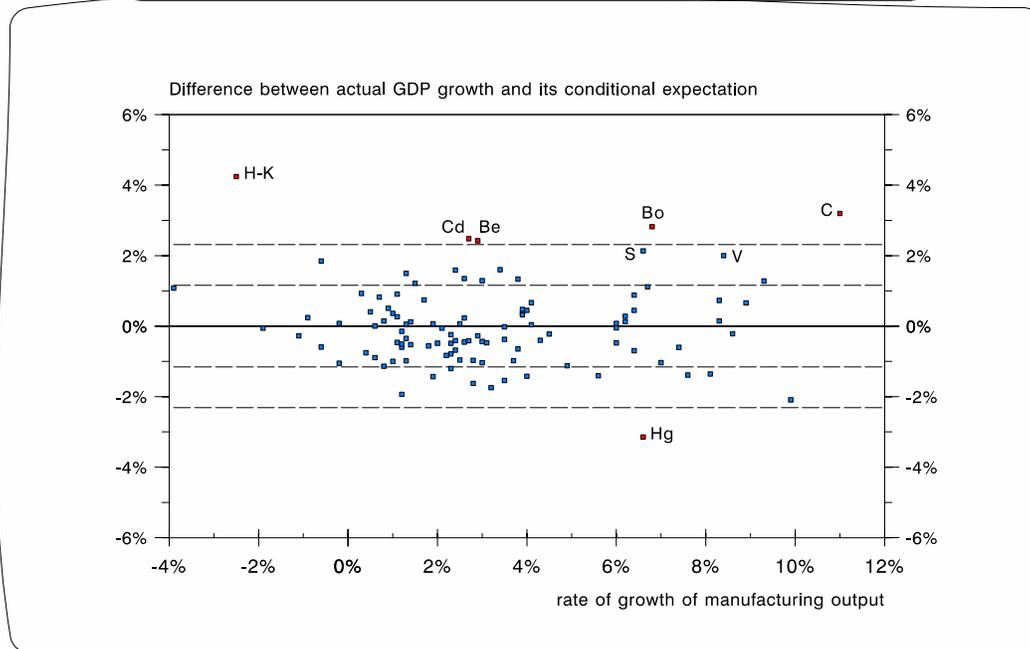


• **Ar** = Argentina; **Bg** = Bangladesh; **Bots** = Botswana; **B** = Brazil; **Co** = Colombia; **H-K** = Hong-Kong; **Hung** = Hungary; **Kor** = Korea; **Mal** = Malaysia; **Mau** = Mauritius; **M** = Mexico; **Id** = Indonesia; **Ir** = Ireland; **Pk** = Pakistan; **SL** = Sri Lanka; **SA** = South Africa; **Thai** = Thailand; and **Viet** = Viet Nam.

Furthermore, (as in previous equations) the 'errors' it generates are well behaved (their mean is zero and they are not heteroscedastic).

FIGURE 45

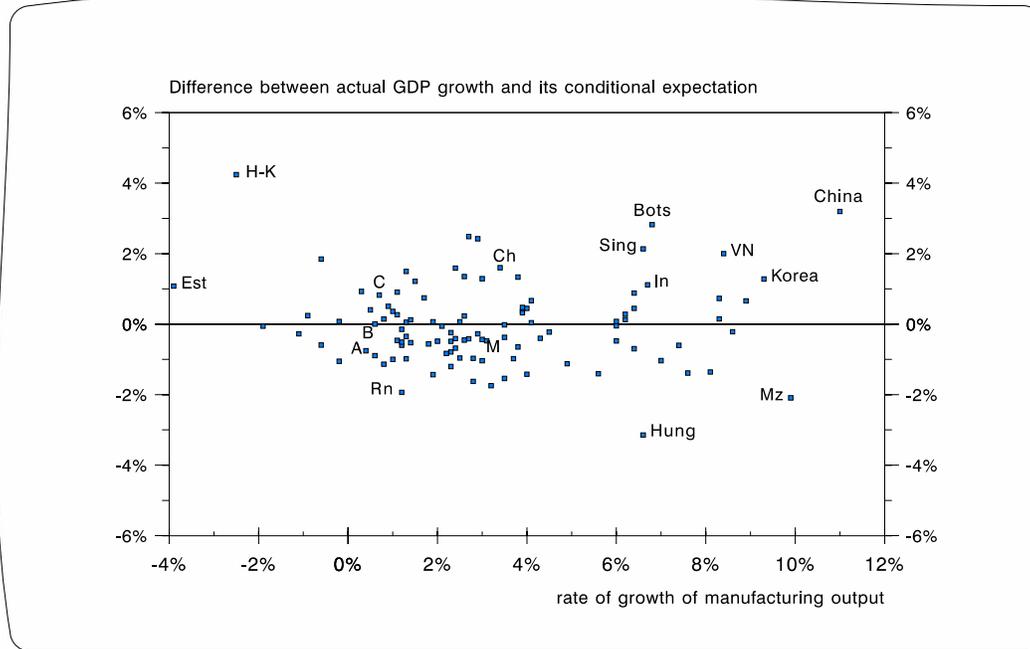
"Errors" ordered by the size of the explanatory variable (1c)



- **Bo** = Botswana; **Be** = Belize; **Cd** = Chad; **C** = China; **H-K** = Hong-Kong; **Hg** = Hungary; **S** = Singapore; and **V** = Viet Nam.

FIGURE 46

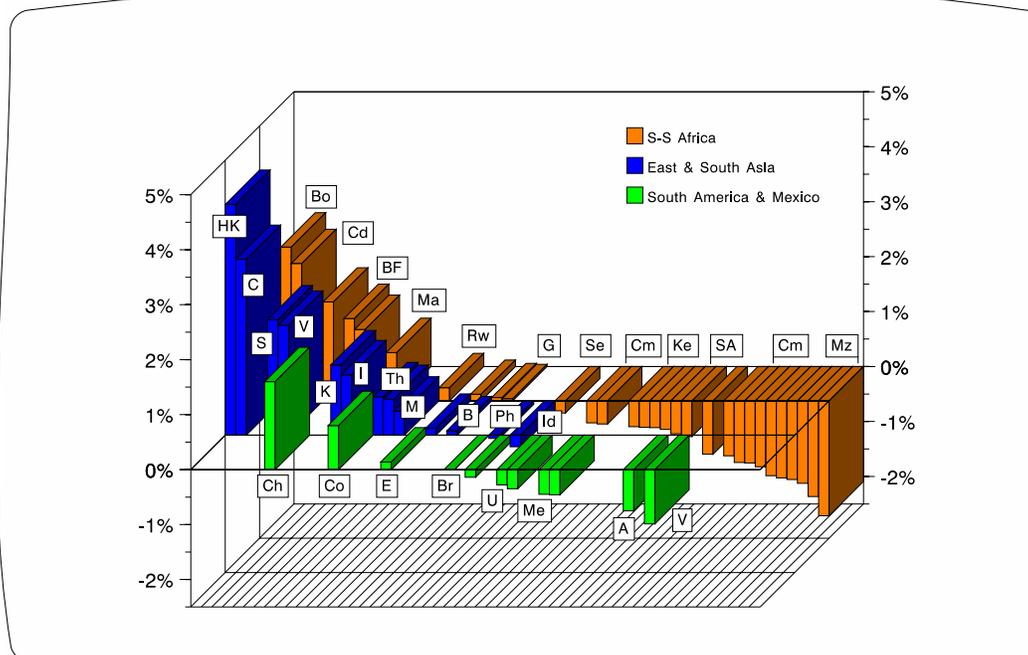
"Errors" ordered by the size of the explanatory variable (1c)



- **A** = Argentina; **Bots** = Botswana; **B** = Brazil; **Ch** = Chile; **C** = Colombia; **Est** = Estonia; **H-K** = Hong-Kong; **Hung** = Hungary; **In** = India; **M** = Mexico; **Mz** = Mozambique; **Rn** = Rumania; **Sing** = Singapore; and **VN** = Viet Nam.

FIGURE 47

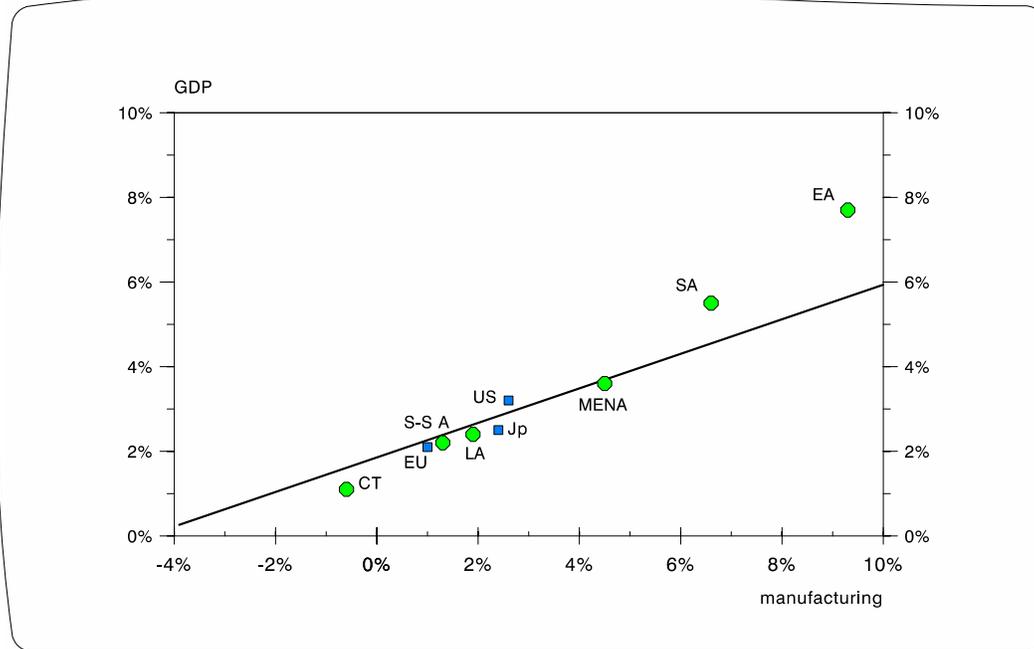
Difference between actual GDP growth and its conditional expectation (1c), 1980-2004



• **A** = Argentina; **B** = Bangladesh; **Bo** = Botswana; **Br** = Brazil; **BF** = Burkina Faso; **Cd** = Chad; **Ch** = Chile; **C** = China; **Co** = Colombia; **Cm** = Comoros; **E** = Ecuador; **G** = Ghana; **HK** = Hong-Kong; **I** = India; **Id** = Indonesia; **Ke** = Kenya; **K** = Korea; **M** = Malaysia; **Ma** = Mauritius; **Me** = Mexico; **Mz** = Mozambique; **Ph** = Philippines; **Rw** = Rwanda; **SA** = South Africa; **Se** = Senegal; **S** = Singapore; **Th** = Thailand; **U** = Uruguay; **Ve** = Venezuela; and **V** = Viet Nam.

FIGURE 48

Regional averages: growth of manufacturing and GDP (1c), 1980-2004

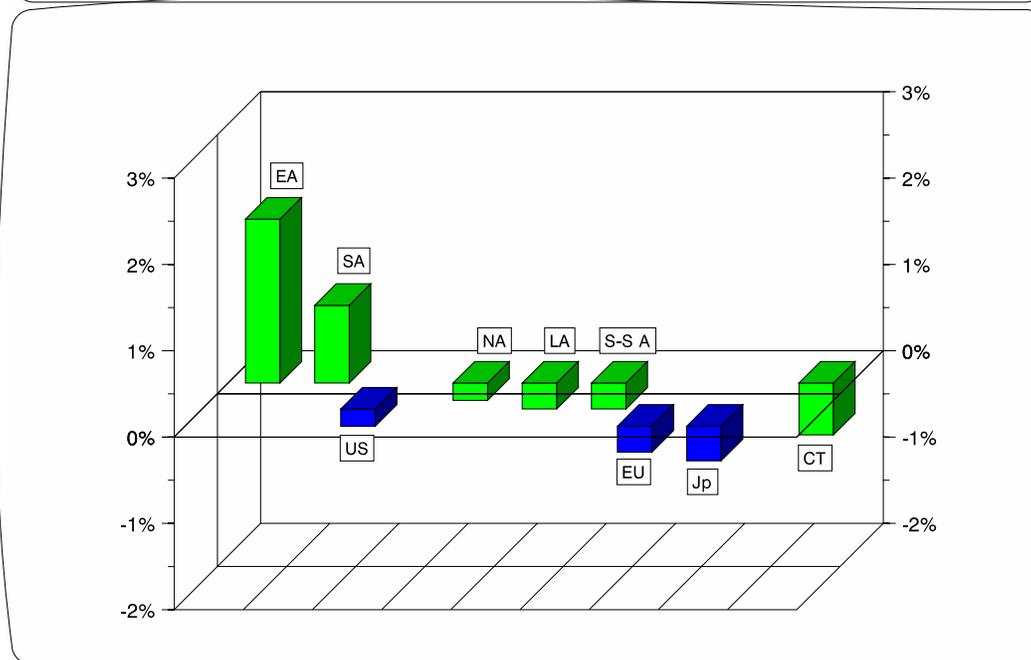


- **CT** = Countries in Transition (the median country in this case is Latvia); **EA** = East Asia; **EU** = European Monetary Union; **Jp** = Japan; **LA** = Latin America; **MENA** = Middle East and North Africa; **SA** = South Asia; **S-S A** = Sub-Saharan Africa; and **US** = United States.

When looking at GDP growth from this perspective it is not only evident how powerful manufacturing is at (statistically) explaining growth (Figure 43 above), but also how accurate this explanatory variable is (as opposed to exports) at predicting Latin America's (poor) growth performance as well as that of the European Union and Japan. Also, the regional averages for the Countries in Transition, Sub-Saharan Africa and the Middle East and North Africa are also remarkably close to the conditional expectation line. In fact, oddly enough, it is only in the particularly dynamic manufacturing regions of East, South East and South Asia where there seems to be (statistically) much more to GDP growth than manufacturing!

FIGURE 49

Regions: difference between actual GDP growth and its conditional expectation (1c), 1980-2004



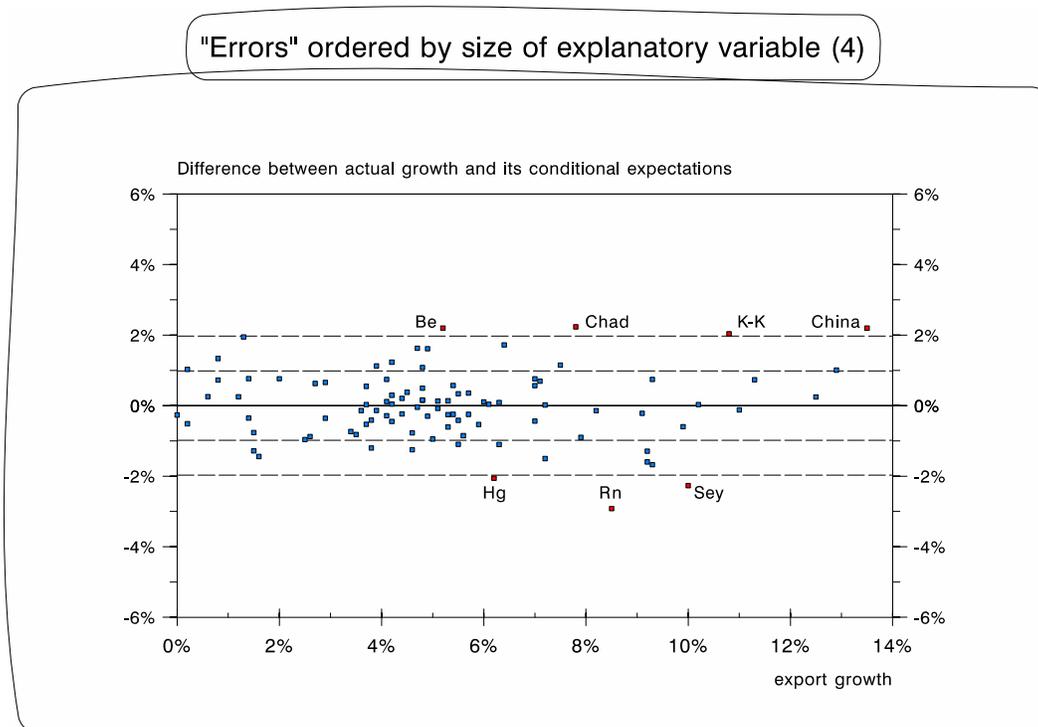
- **CT** = Countries in Transition (Latvia is the median country); **EA** = East Asia; **EU** = European Monetary Union; **Jp** = Japan; **MENA**, Middle East and North Africa; **LA** = Latin America; **SA** = South Asia; **S-S A** = Sub-Saharan Africa; and **US** = United States.

Of all the equations constructed in this paper, with the exception of East Asia, this equation is the one that generates the smallest regional errors!

12.- Combining all four explanatory variables -- the preferred model

Finally, equation '4' is the growth-regression that includes all four variables: export growth, gross fixed capital formation, growth of manufacturing, and 'quality' of exports. The R^2 of this new (preferred) regression is 62% and all four explanatory variables (including the two parameters relating to the export-'quality' variable) are significant at the 1% level -- see Appendix.³⁴

FIGURE 50



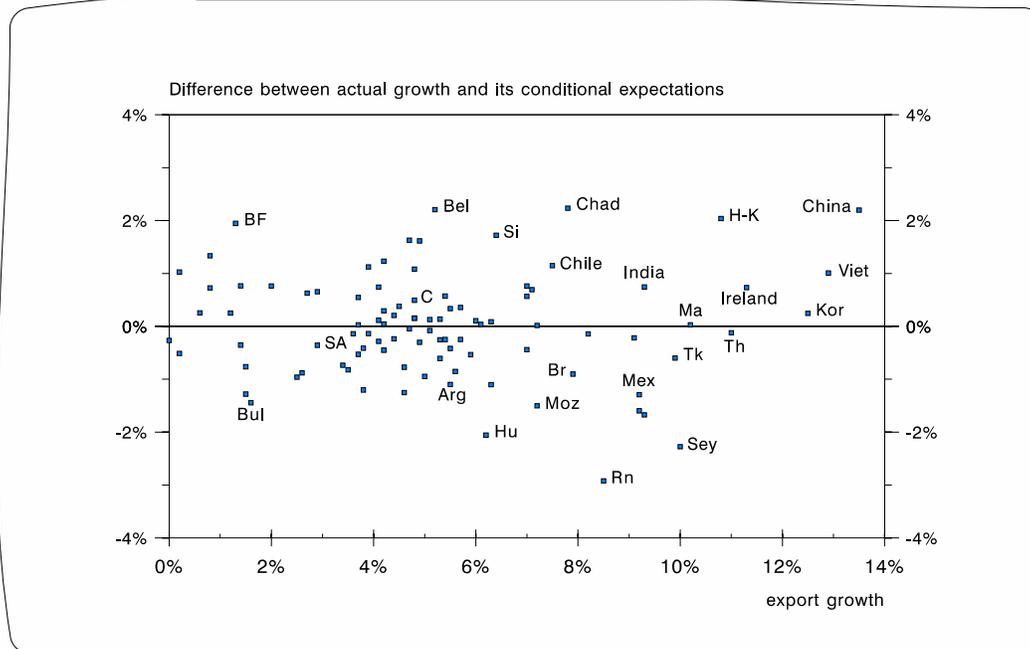
• '4' = growth-regression with export growth, the natural logarithm of gross fixed capital formation (as share of GDP), growth of manufacturing, and 'quality' of exports (the natural logarithm of the percentage of exports in 2000 made of products that are 'demand-dynamic' in OECD imports during the 1990s; this variable is modelled including an interactive dummy variable for the high-quality-exports but slow-growing-countries of Europe and Japan) as explanatory variables. **Be** = Belize; **H-K** = Hong Kong; **Hg** = Hungary; **Rn** = Romania; and **Sey** = Seychelles. As in previous graphs of this type, the bands are mean plus one and two standard deviations.

³⁴ If one adds the variable 'initial condition' to this specification (the natural logarithm of the level of income per capita in 1980), it turns out to be not significant -- the 't' value is -0.92. the same happens with the level of school enrolment (either primary, secondary or tertiary; male or female).

Figure 51 identifies more 'outliers'.

FIGURE 51

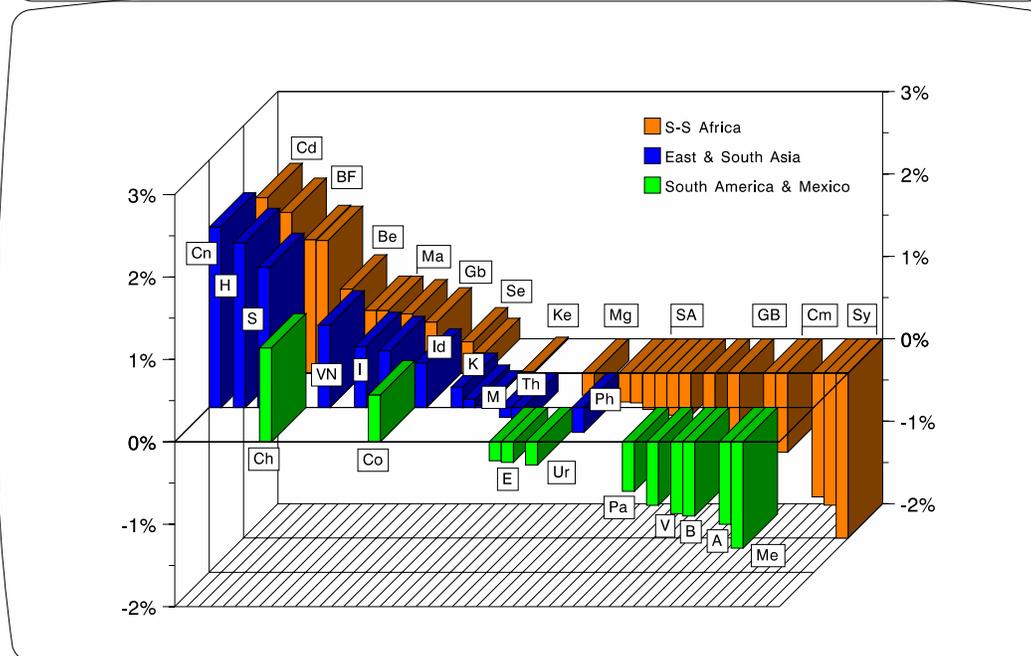
"Errors" ordered by size of explanatory variable (4)



• **Arg** = Argentina; **Bel** = Belize; **Br** = Brazil; **BF** = Burkina Faso; **Bul** = Bulgaria; **C** = Colombia; **H-K** = Hong-Kong; **Hu** = Hungary; **Kor** = Korea; **Ma** = Malaysia; **Mex** = Mexico; **Moz** = Mozambique; **Rn** = Rumania; **Sey** = Seychelles; **Si** = Singapore; **SA** = South Africa; **Th** = Thailand; **Tk** = Turkey; and **Viet** = Viet Nam.

FIGURE 52

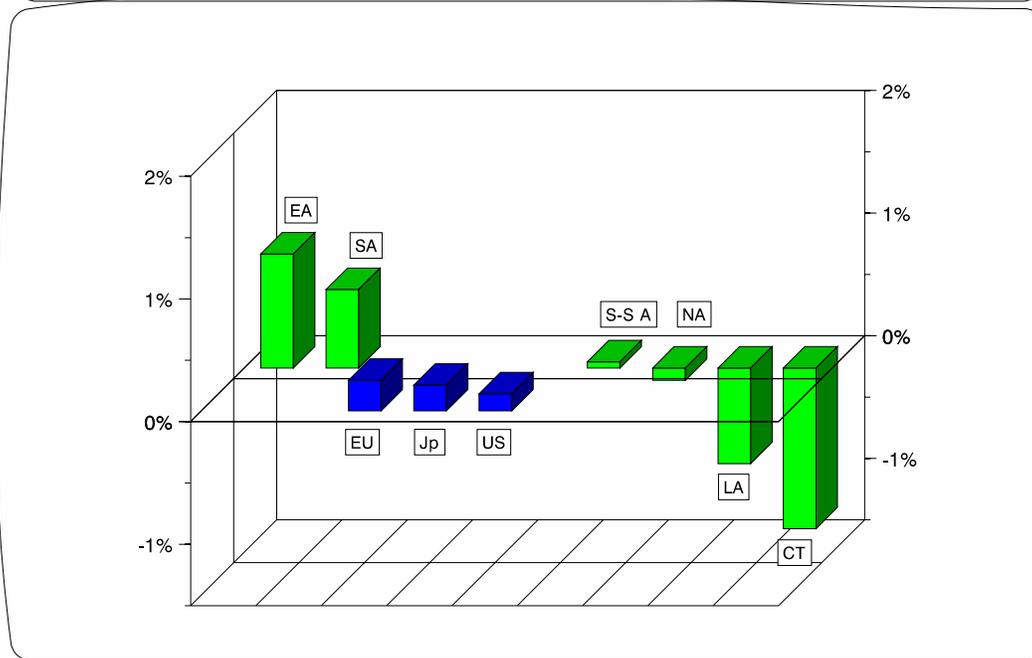
Difference between actual GDP growth and its conditional expectation (4), 1980-2004



• **A** = Argentina; **Be** = Benin; **Br** = Brazil; **BF** = Burkina Faso; **Cd** = Chad; **Ch** = Chile; **Cn** = China; **Co** = Colombia; **Cm** = Comoros; **E** = Ecuador; **Gb** = Gambia; **GB** = Guinea Bissau; **H** = Hong-Kong; **I** = India; **Id** = Indonesia; **Ke** = Kenya; **K** = Korea; **M** = Malaysia; **Ma** = Mauritius; **Me** = Mexico; **Mg** = Madagascar; **Ph** = Philippines; **SA** = South Africa; **Se** = Senegal; **S** = Singapore; **Th** = Thailand; **U** = Uruguay; **V** = Venezuela; and **VN** = Viet Nam. The value for Seychelles (Sy) is -2.2.

FIGURE 53

Regions: difference between actual GDP growth and its conditional expectation (4), 1980-2004

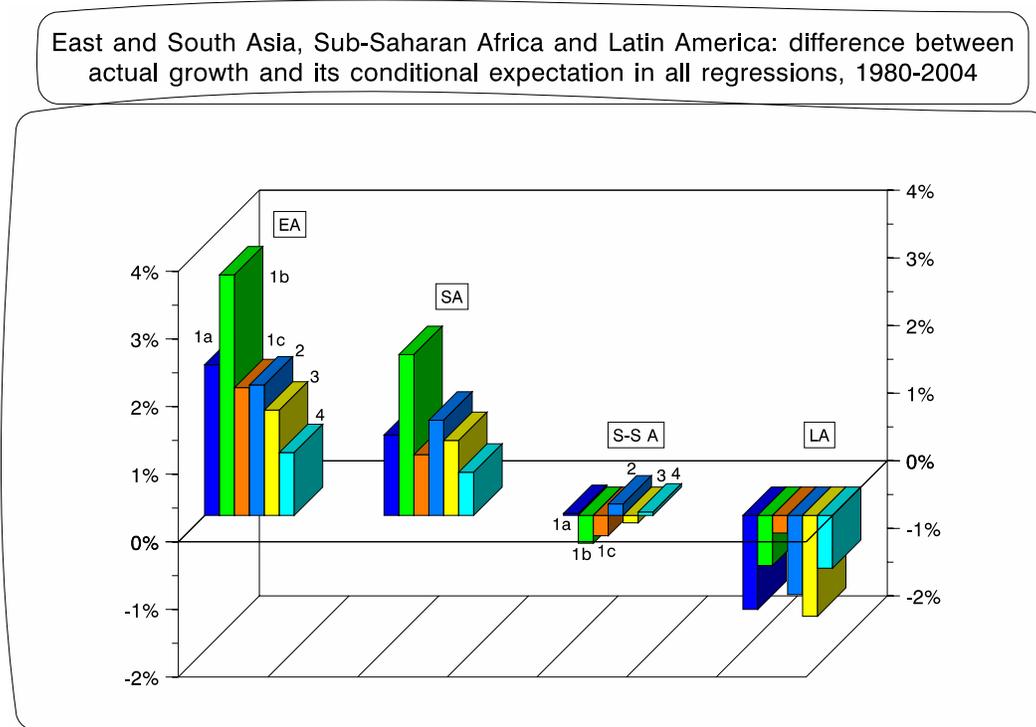


- **CT** = Countries in Transition (Hungary is again the median country); **EA** = East Asia; **EU** = European Monetary Union; **Jp** = Japan; **MENA**; Middle East and North Africa; **LA** = Latin America; **SA** = South Asia; **S-S A** = Sub-Saharan Africa; and **US** = United States.

13.- Comparing the 'errors' generated in all six equations

Figure 54 compares the six 'errors' for East Asia, South Asia, Sub-Saharan countries and Latin America.

FIGURE 54



- '1a' = growth equation with exports as the single explanatory variable; '1b' = with the natural logarithm of the average value for the period of gross fixed capital formation (as share of GDP) as the single explanatory variable; '1c' = manufacturing as the single explanatory variable; '2' = with exports and Ln GFKF as explanatory variables; '3' = with exports, Ln GFKF and 'quality' of exports (including an interactive dummy for Europe and Japan) as explanatory variables; and '4' = with exports, Ln GFKF, manufacturing and 'quality' of exports (plus interactive dummy) as explanatory variables.

The main features that emerge from this 'errors' comparison are the following:

- In East Asia there is a significant decline of the error from equations '1b' to '4'; and the preferred equation ('4') delivers not only the smallest error of all equations but one that is relatively small in size (0.9 percentage points) for such a difficult region to growth-model. Also, at the risk of repeating the obvious, although the 'error' may well decline

significantly as the specification of the regression improves, it is important to reiterate that this region as a whole 'over-performs' no matter what one adds to the regressions in the form of 'explanatory' variables. So, there is still more to their growth success than the analysis carried out in this paper, not least the capacity of many East and South East Asian countries to generate unique synergies between the very same variables included here -- i.e., probably more than anywhere else in the world, in this region (especially in the first- and third-tier NICs) the total is more than the (independent) sum of its components.³⁵

ii).- In South Asia, other than a bad fit in the GFKF regression, the errors (though relatively small) are fairly stable in all regressions -- indicating that although 5 of our 6 regressions are able to perform a relatively decent job predicting the regional growth, none is able to penetrate deeper in South Asia's recent growth success. This phenomenon has produced a fertile analytical terrain for the TFP brigade (including Rodrik).³⁶ However, as discussed in detail elsewhere (Bhandari and Palma, 2006), in the case of India a remarkably expansionary management of aggregate demand starting in 1980 (especially via a fiscal policy that became the horror of pro-Washington-consensus economists both within and outside India); a particularly intelligent (and slow) timing of economic reforms aimed at releasing supply constraints generated by the relentless expansionary increases in expenditure; having the fortune of holding several 'winning tickets' of the lottery generated by the process of globalisation (e.g., a particularly low wage economy with a large population fluent in the English language, etc.); and a very high stock of human capital accumulated during the previous (state-led) development strategy, as well as powerful and relatively effective institutions also developed during that period, are certainly more relevant to the understanding of India's remarkable growth since 1980 than TFP-style

³⁵ As discussed above, and as apposed to the first- and third-tier NICs, the growth record of the second-tier is (statistically) well explained by the final regression ('4').

³⁶ See Rodrik and Subramanian (2004).

analyses.³⁷

iii).- Sub-Saharan Africa is the opposite of South Asia: whatever growth there is, is very 'transparent', with all regressions generating very small 'errors'. In particular, all regressions that include exports ('1a', '2', '3' and '4') 'fit' the growth pattern of this region better than any other one in the developing world; furthermore, those in which exports 'dominate' ('1a', '2' and '3') generate practically no 'error' at all. The fact that there are a large number of countries in this region, and that they have developed a diversity of growth-performance is part of the reason. In turn, the combination of an overall poor GDP growth performance (2.4% per year) and such an accurate export predictor indicates that (as opposed to Latin America) exports are likely to have been the main constraints to growth in the region during this period.

iv).- In Latin America, in regressions in which exports 'dominate' ('1a', '2' and '3'), the region tends to under-perform badly. However, in those that include manufacturing and GFKF ('1b', '1c' and '4'), the poor growth performance of the regions is (statistically) explained rather well.³⁸ Furthermore, if manufacturing and manufacturing jointly with investment predict (poor) growth performance so accurately (and better than in any other region in the world), while exports do not (the region systematically under-perform vis-à-vis export-growth), there is a good chance that the main constraint for growth in the region is located in its export sector. That is, exports are faltering as an engine of growth because of their poor GDP-'tracking' properties. Ironically, if during the ISI period in Latin America the main hindrance to growth was the fact that an almost obsessive concentration in manufacturing of resources and policy incentives led to a neglect of commodity exports (hindering growth via a

³⁷ In this area, the work of Mushtaq Khan is the most revealing. See, for example, Khan (2006).

³⁸ These two variables explain well Latin America's growth performance during this period either individually or jointly. Furthermore, a growth equation in which the only two explanatory variables are manufacturing and GFKF (not reported in this paper) generates a conditional expectation of growth in Latin America which is in fact identical to the actual growth of the region during this period.

balance of payments constraint), in the post-1980 period the region is doing exactly the same but the other way round. The main difference is that Latin America at least was able to grow for a long time during the previous ISI period despite neglecting commodity production (helped no doubt towards the end of the ISI period by being able to borrow its way out of trouble, when the balance of payments constraint began really to bite, especially after the oil-shocks of the 1970s). However, the region has not been able to grow afterwards while neglecting manufacturing. Nor has borrowing (or other forms of inflows), in this case, been able to help the region out of this problem much either.³⁹

v).- These regressions indicate that the Countries in Transition (not included in Figure 54) have 'underperformed' more than any other region in the world vis-à-vis their conditional expectation.⁴⁰ The five included in this sample (Bulgaria, Estonia, Hungary, Latvia and Romania) grew during this 24-year period by only 1.0%, 1.4%, 1.4%, 1.1% and 0.4% per year, respectively.⁴¹ However, they did so with rates of growth of exports and GFKF (as a share of GDP) that were not so meagre.⁴² Furthermore, the 'quality' of export variable for the three non-Baltic countries for which there is data available is also not so disappointing as in other regions of the developing world (24%, 69% and 32%, respectively). Moreover, even though their poor rate of growth of manufacturing pulls them down significantly in terms of their overall growth,⁴³ their GDP growth rates still 'underperformed' in the regressions in which manufacturing 'dominates' ('1c' and '4' -- median values for the 'errors' in these equations are

³⁹ Unfortunately, there is no space here to analyse in detail why the performance of the Chilean economy (and, to a certain extent, that of Colombia as well) is out of tune with the rest of the region. This task has been attempted elsewhere (Palma, 2006b).

⁴⁰ For a critical analysis of the growth performance of these countries, see Reinhart and Kattel (2005).

⁴¹ Although there has been an acceleration of growth in many of them since 2000; see for example the United Nations' World Economic Situation and Prospects (WESP), 2006 at <http://www.un.org/esa/policy/wess/wesp.html>.

⁴² These rates were 1.6%, 8.2%, 6.2%, 4.5% and 8.5% for exports, and 20.5%, 26.6%, 22.7%, 23.4% and 21.2% for investment, respectively)

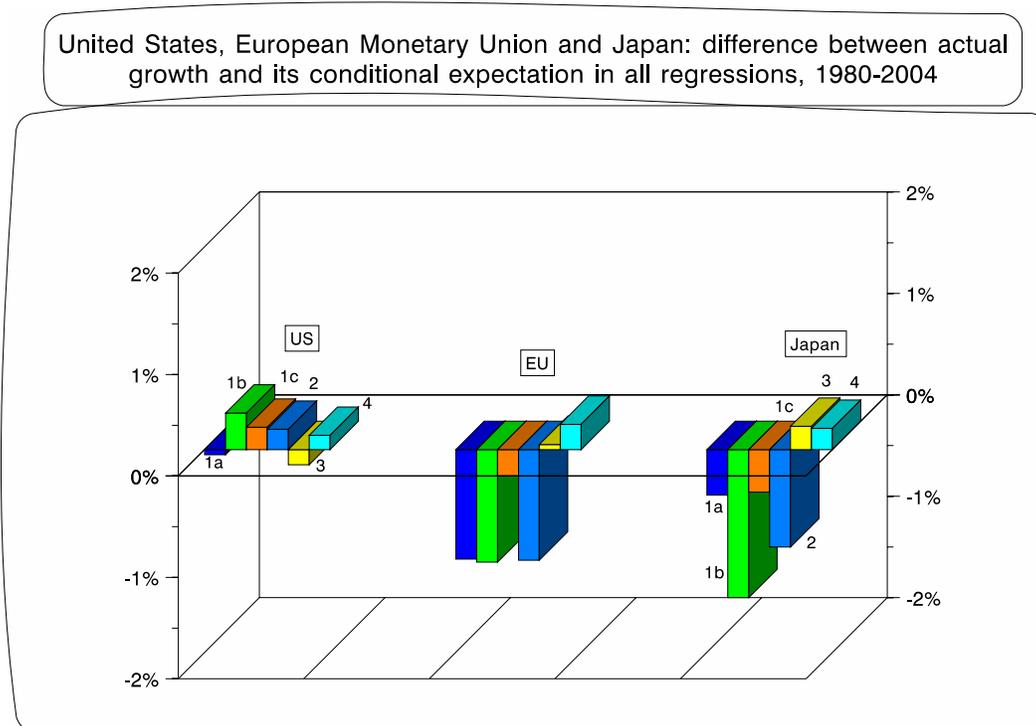
⁴³ These are (-)1.9%, (-)3.9%, 2.6%, (-)3.7% and 1.2%, respectively.

(-)1.9 percentage points and (-)1.1, respectively.)⁴⁴

vi).- The particularly heterogeneous group of countries included in the MENA region (also not included in Figure 54) is so diverse (particularly in terms of politics and/or oil) that it is less meaningful to look at this group of countries as a 'region'. However, as is often the case, diversity (at least as far as explanatory variables are concerned) helps the statistical accuracy of a regression. In this case, the 'errors' in the regression are relatively low (0.5 percentage points, 0.4, (-)0.5, 0.5, 0.3, and (-)0.3, respectively). Therefore, although these regressions fit their data relatively well, they are not very informative as to what is acting as a main constraint for their relatively dynamic average GDP growth (3.6%).

Finally, Figure 55 shows the different 'errors' for United States, the European Monetary Union and Japan.

FIGURE 55



- Regressions as in Figure 54.

⁴⁴ The 'errors' in the other four equations were (-)2.1, (-)1.9, (-)2.1, and (-)0.6, respectively.

As far as the US is concerned, these growth-regressions tend to explain well its relatively high average rate of growth of GDP for the period (3.2%). However, this is so only if the US is not included in the dummy variable for Europe and Japan for the export 'quality' variable.⁴⁵ Of the variables studied, manufacturing growth is the most disappointing (an average of just 1% for the period). In fact, even during the more dynamic Clinton years (1992-2000) GDP grew at an average of 3.8% while manufacturing only managed 2.4%. However, what is somehow rather surprising is that the rate of growth of the US economy is best 'explained' by its export performance in equation '1a' (when only export growth, but not the 'quality' of exports variable is included) at the same time as being the economy in the world in which one would least expect a (US dollar) 'foreign' exchange constraint!

Countries in the European Monetary Union, in turn, seem to suffer the opposite problem to the US (and one that in a way resembles that of Latin America). They 'under-perform' significantly from the point of view of the overall dynamics of their export sector; furthermore, this phenomenon is particularly so (as discussed above) from that of the 'quality' of their exports. However, manufacturing seems to predict rather accurately what happens in terms of overall GDP growth. The well-known problems with the EU export sector -- leading to a massive loss of market shares and a decline in 'quality' -- is evident in Figure 41 above.⁴⁶ In other words, the EU's is another case of exports faltering as an engine of growth because it seems to be losing their GDP-'tracking'

⁴⁵ That is, if (the slow growing economies of) Europe and Japan are excluded from the dummy variable for the 'quality' of exports, their errors increase significantly (see below). In the case of the more dynamic US economy is the other way round -- its 'error' in equation '4' increases from 0.14 percentage points to 1.04 (due to the fact that the conditional expectation of its GDP growth falls from 3% to 2.1%.)

⁴⁶ One further (statistical) confirmation of this is the fact that if in equation '3' (the one that adds export 'quality' to exports and GFKF) one disregards the interactive dummy introduced into the export-'quality' variable for Europe and Japan, the 'error' of the equation for the EU collapses from a slight 'over-performance' of 0.1 percentage points to a significant 'under-performance' of (-)1.5. The same happens in equation '4', where the 'error' falls from 0.2 percentage points to (-)0.6.

properties. Not much (statistical) evidence of the same happening in manufacturing!

Finally, Japan presents some similarities with the EU, except that in this case the GDP-‘under-performance’ is more acute with respect to investment than with exports (with the same caveat vis-à-vis the interactive dummy for export-‘quality’).⁴⁷ Meanwhile, as in the EU, the (not very dynamic) rate of growth of manufacturing (0.9%) predicts rather well the (poor) GDP performance of the country.

14.- Conclusions

Willem Buiter once remarked that

“Macroeconomics appears to be redirecting itself slowly from its recent self-referential preoccupation with a certain kind of abstract elegance to the rather messier, much harder but also ultimately much more rewarding task of modelling the essential features of an awkward economic reality”. (1999)

Probably there are few more ‘awkward’ realities to understand than economic growth. In this paper I have tried to keep statistics and econometrics as simple and transparent as possible in order to do so. In fact, in order to help the clarity of the argument I followed a ‘specific to general’ methodology instead of the usual opposite one. This, of course, does affect the properties of the preferred equation (‘4’);⁴⁸ also, this approach has helped to unravel important characteristics of the growth process since globalisation. The most important findings are the following:

1.- Perhaps rather surprisingly, there is not much evidence of an increase in growth divergence since globalisation; however, there is a generalised and significant (but rather even) drop in the average rate of economic growth.

⁴⁷ As in the EU, if (the slow growing economy of) Japan is excluded in equation ‘4’ from the dummy variable for the ‘quality’ of exports; its ‘error’ changes from a small positive number (0.21) to a larger negative one -- (-)0.77.

⁴⁸ Other than the obvious problem with the level of significance when testing different specifications on the same sample.

2.- However, 'newly emerging Asia' provides major exceptions to this trend, in particular China, India and Viet Nam.

3.- Furthermore, different rates of growth-deceleration plus the experience of the few countries that have swam against this deceleration tide have produced a game of 'musical chairs' in terms of significant switches in the growth-ranking of countries.

4.- It is important to note that in this analysis if a country 'outperforms' its growth expectation it does not follow that it is a 'success' story. As some European and Sub-Saharan countries show, a poor growth record could even look exciting when analysed from the perspective of even poorer macroeconomic variables.

5.- Briefly, some of the most important regional issues that have emerged are the following:

i).- In Sub-Saharan Africa, contrary to common perceptions, there is a great diversity in growth experiences. At the same time, from the point of view of the macroeconomic variables used in the regression analysis the growth that has taken place is rather 'transparent', with all six regressions generating small 'errors'.

ii).- Economic growth in the Countries in Transition systematically 'underperforms' (often by a significant amount) the levels achieved by their macroeconomic variables (those included in the regressions.)

iii).- In Latin America, the high explanatory power of manufacturing and GFKF and the remarkable apparent lack of growth-enhancing power of exports stand out. Latin America has paid a high price (growth-wise) for having neglected its manufacturing sector and for having a disappointing accumulation record. As discussed above, the irony of this is that during the state-led ISI period in Latin America an almost obsessive concentration of resources and policy initiatives in manufacturing led to a

neglect of commodity exports. In the post-1980 period, meanwhile, the region did exactly the same but the other way round. The main difference is that Latin America at least was able to grow for a long time during ISI despite neglecting commodity production, but has not been able to grow at all while neglecting manufacturing. In fact, the main characteristic of the region since 1980 is that (with the exception of the Countries in Transition) nowhere else in the world did 'neo-liberalism' spread so quickly, in such a one-dimensional version, and with such an 'end-of-history' uniformity and standardisation. Its discourse had a compass whose 'magnetic north' was simply the reversal of as many aspects of the previous development strategy as possible.⁴⁹ The mere idea that alternative forms of re-engineering the region's development strategy could exist met with a mixture of amusement and contempt.⁵⁰

iv).- In Asia, the first-tier NICs outperform in terms of growth any macro-variable studied -- especially (and as opposed to common perceptions, including Krugman's analysis of the region) its rate of accumulation. In particular, it is obvious that there is much more to their growth experience than high levels of investment and a fast rate of growth of manufacturing.

v).- This is not the case for the second-tier NICs, which are (statistically) well explained by the preferred equation ('4').

vi).- In the third-tier NICs both China and Vietnam are not only able to deliver a remarkable rate of growth of output, but they do so more in the first-tier NICs-fashion -- i.e., 'outperforming' in a significant way their predicted rates of growth given the levels of their macroeconomic variables.

⁴⁹ Even in Brazil, which until 1980 state-led ISI transformed into one of the fastest growing economies in the world, the attitude was the same. According to Gustavo Franco, President of the Central Bank until the 1999 crisis: "[Our real task] is to undo forty years of stupidity ('besteira') [...]. (Veja 15/11/1996)

⁵⁰ Franco again in the same interview: "[In Brazil] the alternative today is to be neo-liberal or neo-idiotic ('neo-burros')".

vii).- In the case of South Asia, their high growth rates are not well explained by their (less remarkable) macro-variables -- the errors are stable and relatively high, especially vis-à-vis their rates of accumulation. This phenomenon has produced a fertile terrain for the TFP brigade. However, as discussed in detail elsewhere, in the case of India a particularly active and expansionary fiscal policy, an intelligent timing of reforms, having several 'winning tickets' in the process of globalisation, a high stock of human capital, as well as powerful and relatively effective institutions are certainly more relevant to an understanding of India's remarkable growth since 1980 than TFP-style analysis.

viii).- The rather poor growth-performance of Europe and Japan, as well as the more interesting one of the US, are (statistically) explained fairly accurately by the preferred regression (regression '4'); in fact, even the only high growth economy in the OECD group (Ireland) is well accounted for by this regression. The key findings for the US is that it has been able to grow despite its meagre manufacturing growth and low rate of investment; while in the EU exports, and in Japan investment has not been able to deliver the rates of economic growth associated on average with these variables in other countries in the sample. However, as a group and in an overall sense, the OECD economies have not behaved significantly differently from DCs in terms of the determinants of their economic growth.⁵¹

6.- In terms of policy analysis -- particularly in terms of trade and industrial policies --, how to go from '2' to '3' in the quadrants of the anti-clockwise graph (Figure 41) seems to be one of the most crucial issues. The apparent lack of endogenous forces for this upward move confirms the well-known fact that policy and institutions should be at the forefront of growth and trade theory.

⁵¹ A simple test of this was done in the preferred equation ('4') by adding an intercept dummy for OECD countries. The 't' statistics of this dummy variable is not significant even at the 10% level ('t' = 1.35). Furthermore, this dummy (although, as expected, changing to a negative value) remains not significant at the 10% level even if one drops the interactive dummy for the export-'quality' variable -- 't' = (-)1.33.

7.- However, as the remarkable case of Viet Nam shows, it is also possible to grow fast -- and in a stable manner -- with a particularly 'unattractive' set of exports (oil, rice, coffee, maquila and remittances), and with relatively low levels of FDI. In fact, Viet Nam, with an effective expansionary management of domestic aggregate demand and an intelligent pace of economic reforms, was able to leapfrog from one tail of the GDP growth-ranking distribution to the other with such 'unappealing' exports.

8.- The two regions where trade and financial liberalisation and economic reform in general have been done closer to the manual of the Washington Consensus -- and implemented in an almost purely ideological fashion -- (Latin America and Countries in Transition) have paid a high price in terms of GDP growth. It is rather obvious that even in their own terms, in neo-liberal economic theory 'more' (reforms) are not necessarily better than 'less'; 'quicker' (reforms) are not more efficient than 'slower'; and the problems generated by the implementation of these reforms are not always better solved by more (of the same) reforms!

9.- Another crucial lesson that comes out of this regression analysis is that the outliers at both tails tend to be systematically the same: some East, South East and South Asian countries in the growth-outperforming brigade, and many Latin American countries and the Countries in Transition in the other tail. Therefore, there has to be more to their growth story than exports (and the 'quality' thereof), investment, and manufacturing. There can be little doubt that 'growth-enhancing policies' (e.g., stable and export-promoting exchange rates, low and stable interest rates,⁵² effective and innovative industrial and trade policies), and 'growth-enhancing institutions' are part of that story. In particular, it seems obvious that Latin America -- in particular its three main 'basket' economies of Brazil, Mexico and Argentina, where as a whole there has

⁵² Recent remarkable revaluations of the Real in Brazil and the Peso in Chile, or the high levels of interest rates in Brazil show precisely what is wrong with policy making in Latin America from a growth-enhancing point of view.

been practically no GDP per capita growth in the last quarter of a century -- should take another look at its institutions, its structure of property rights and incentives, and its lack of 'growth-enhancing policies'. Governments in Latin America may have tried hard to 'get their prices right', their macroeconomic balances 'right' and their 'country-risks right', but so far they have certainly not tried quite as enthusiastically to 'get their social capital right', to 'get their institutions right', or their 'growth-enhancing policies right'.

10.- The evidence analysed in this paper indicates that as far as GDP growth is concerned, in this new 'brave' globalised world -- with its IT revolution and its 'new economy', its (asymmetric) trade-openness, its huge degree of 'financialisation', etc., etc. -- the 'economics of the Gattopardo' seems to dominate (in which 'for everything to stay just as it is, everything had to change!')⁵³ The basic growth story that emerges from this paper is the good old fashioned 1960s Structuralist and Kaldorian 'product specific' one in which accumulation and manufacturing are the key to growth when there is no foreign exchange constraint. If exports not only grow rapidly but are characterised by more 'dynamic' products -- i.e., with high income elasticities of demand in world markets/ high linkages to the domestic economy/ high productivity growth potentials/ high positive externalities and spill-over effects/ useful for technology ladders, etc. -- all the better. And, of course, growth-enhancing policies, institutions capable of implementing them, the structure of property rights and incentives, and macro-stability matter in this. These seem to be the conditions that help countries to successfully take advantage of (endogenously- or exogenously-created) new 'growth spaces', including globalised ones.

⁵³ See *The Gattopardo*, by Giuseppe Tomasi di Lampedusa.

Bibliography

- Barro, R and X Sala-i-Martin (2004), *Economic Growth*, McGraw-Hill.
- Bhanduri, P and J G Palma (2006), 'Towards a higher growth path in a sustainable way: the Indian economy since 1980', mimeo, Cambridge University.
- Blankenburg, S (2000), 'Knowledge, economic growth and the role of policy', ESRC Centre for Business Research, Department of Applied Economics, Working Paper 185.
- (2004), *Knowledge in the 'New Endogenous Growth Theory': A factor of production, a good and an externality*, mimeo, Cambridge University.
- Buiter, W (1999), *Macroeconomic Theory and Stabilisation Policy*, Manchester University Press.
- Carrillo, J (2002), 'Foreign direct investment and local linkages: experiences and the role of policies. The case of the Mexican television industry in Tijuana', mimeo, UNCTAD.
- Easterly, W (2001), *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics*, The MIT Press.
- Easterly, W, M Kremer, L Pritchett and L Summers (1993), 'Good policy or good luck? Country growth performance and temporary shocks', *Journal of Monetary Economics* 32 (3).
- Hausmann, R, J Hwang and D Rodrik (2005), 'What You Export Matters', mimeo, Harvard University.
- Mayer, Jorg (2003), "The fallacy of composition: A review of the literature", *UNCTAD Discussion Papers* 166, February.
- Ocampo, J A (2004), 'Latin America and the world economy in the long twentieth century', in Jomo K S (ed.) *The Long Twentieth Century. Globalization under Hegemony: the Changing World Economy*, Oxford University Press.
- Ocampo, J A (2005a), 'The quest for dynamic efficiency: Structural dynamics and economic growth in developing countries', in José Antonio Ocampo (ed.), *Beyond Reforms, Structural Dynamics and Macroeconomic Vulnerability*, Stanford University Press, ECLAC and World Bank.
- Palma, J G (2004), 'Latin American during the second half of the 20th Century: from the 'age of extremes' to the age of 'end-of-history' uniformity', in H-J Chang, *Rethinking Development Economics*, Anthem Press, 2004.

- (2005a), 'The six main 'stylised facts' of the Mexican economy since trade liberalisation and NAFTA', *Journal of Industrial and Corporate Change*, December, 2005.
- (2005b), 'Four sources of de-industrialisation and a new concept of the *Dutch Disease*', in J A Ocampo (ed.) *Beyond Reforms: structural dynamic and macroeconomic vulnerability*, Stanford University Press, ECLAC and World Bank.
- (2006a), 'The challenges facing an infant 'goose' in the era of globalisation: how Vietnam can avoid becoming China's Mexico', mimeo, UNDP.
- (2006b), 'Chile's economic success: myth or reality?', mimeo Cambridge University.
- (2006c), 'Flying-geese and waddling-ducks: the different capabilities of East Asia and Latin America to 'demand-adapt' and 'supply-upgrade' their export productive capacity', in M Cimoli, G Dosi and J Stiglitz (eds.), *Industrial policy in Developing Countries*, forthcoming, Oxford University Press.
- PRONAFICE (1984) *Programa nacional de fomento industrial y comercio exterior, 1984-1988*, Secretaria de Comercio y Fomento Industrial, Mexico.
- Rada, C and L Taylor (2004), 'Empty sources of growth accounting, and empirical replacements à la Kaldor with some beef', *Center for Economic Policy Analysis*, New School University, November.
- Rodrik, D (2005), 'Why We Learn Nothing from Regressing Economic Growth on Policies', mimeo, Harvard University.
- Rodrik, D and A Subramanian (2004), 'From Hindu growth to productivity surge: the mystery of the Indian growth transition, mimeo, Harvard university.
- Rodrik, D, A Subramanian and F Trebbi (2004), 'Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development', *Journal of Economic Growth*, 9 (2).
- Rodríguez, F (2005), 'Cleaning Up the Kitchen Sink: On the Consequences of the Linearity Assumption for Cross-Country Growth Empirics', unpublished manuscript, August.
- Rodríguez, F and D Rodrik (2001), 'Trade policy and economic growth: A skeptic's guide to the cross-national evidence', in B S Bernanke and K Rogoff (eds.), *NBER Macroeconomics Annual 2000*, Cambridge, MIT Press.
- Tregenna, F (2006), 'Towards a new understanding of Botswana's growth experience', paper presented at the AEA meeting, Boston, January.

UNCTAD (2002), *World Investment Report*, UNCTAD.

World Bank (2003), *Competitive Analyses of Countries (CAN)*, CD Room,
World Bank and ECLAC.

World Bank (2005), *World Development Indicators*, World Bank.

Yanikkaya, H (2001), 'Convergence: a cross country empirical analysis',
Yönetim Ve Ekonomik, Vol. 7, N.1

Appendix

i).- Regression '1a': regression in which the only explanatory variable is the rate of growth of exports.

	Intercept	Exports	
Parameter	1.54	0.31	
St error	0.28	0.05	
't' statistics	5.54	6.68	
R ²			0.30
'F' statistics			44.64

• **St error** = standard error.

ii).- Regression '1b': regression in which the only explanatory variable is the natural logarithms average value for the period of gross fixed capital formation (as share of GDP).

	Intercept	Ln GFKF	
Parameter	-4.90	2.64	
St error	1.83	0.59	
't' statistics	2.68	4.44	
R ²			0.16
'F' statistics			19.73

iii).- Regression '1c': regression in which the only explanatory variable is the rate of growth of manufacturing output.

	Intercept	manufacturing	
Parameter	1.89	0.41	
St error	0.17	0.04	
't' statistics	11.14	10.21	
R ²			0.50
'F' statistics			104.15

iv).- Regression '2': regression with Ln GFKF (as share of GDP) and export growth as explanatory variables.

	Intercept	Ln GFKF	Exports	
Parameter	-3.39	1.68	0.27	
St error	1.62	0.55	0.05	
't' statistics	-2.09	3.08	5.67	
R ²				0.36
'F' statistics				28.92

v).- Regression '3': regression with Ln GFKF (as share of GDP), export growth, and export 'quality' as explanatory variables (with an interactive dummy variable for 'quality' of exports for Europe and Japan).

	Intercept	Ln GFKF	Exports	Exp 'quality'	Dummy	
Parameter	-3.81	1.88	0.26	-0.32	0.38	
St error	0.50	0.56	0.04	0.11	0.08	
't' statistics	-2.40	3.37	5.70	-3.00	4.70	
R ²						0.53
'F' statistics						25.73

• **Exp** = exports.

vi).- Regression '4': regression with growth of manufacturing, Ln GFKF (as share of GDP), export growth, and 'quality' of exports (percentage of exports in 2000 made of products that are 'demand-dynamic' in OECD imports during the 1990s; this variable is modelled including an interactive dummy variable for the high-quality-exports but slow-growing-countries of Europe and Japan) as explanatory variables.

	Intercept	Mf	Ln GFKF	Exports	Exp 'quality'	Dummy	
Parameter	1.82	0.26	1.08	0.18	-0.22	0.24	
St error	1.47	0.05	0.52	0.04	0.09	0.07	
't' statistics	-1.24	5.72	2.09	4.17	-2.37	3.17	
R ²							0.62
'F' statistics							29.57

• **Mf** = manufacturing; and **Exp** = exports.