Panama´s Growth Diagnostics

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1. Introduction

The Isthmus of Panama has exploited its privileged geographical location since the times of Christopher Columbus' third voyage in 1502-1504 and the "discovery" of the Pacific Ocean by Vasco Núñez de Balboa in 1513. From the early colonial land routes, to the construction of the railroad (completed in 1855) and the opening of the Canal in 1914, Panama's geography has been its greatest comparative advantage.[2]

Modern day Panama is a relatively small country in terms of area (75,517 squared kilometers), population (slightly over 3.3 million in 2006), and GDP (US$17 billion in 2006). Since its independence from Colombia in 1903, the Canal and the heavy influence of the U.S. have been the major forces in Panama's development process. Between 1903 and 1979 the U.S. exercised absolute control over the Panama Canal Zone (an area of 1,400 km^2) and had rights to intervene militarily in the country. Since December 31, 1999 Panama assumed full control of the Canal's operations (although the U.S. retained the permanent right to defend the Canal from any threat that might interfere with its continued neutral service).[3]

Panama has a fully dollarized economy. Its main economic pillars have been the Canal – today in the hands of the Panama Canal Authority (PCA), the Colon Free Zone (CFZ), and the Financial Banking Center (FBC). According to the 2006 data, GDP shares are 19 percent in transport and communications (mostly the Canal and ports), 8 percent in financial intermediation, and 15 percent in commerce (including the CFZ). As a result of

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[2] Panama's colonization began in 1510 as a settlement (called then Santa María la Antigua) of about three hundred Spaniards, led from 1511 by Vasco Núñez de Balboa (in 1513, searching for gold, they found a new ocean). The city of Panama was founded in 1519, where ten percent of the initial inhabitants were non-Spaniards ("foreigners" have played a significant role in the country). After the encounter between Pizarro and Atahualpa in 1532, silver from Potosí was taken to Panama where it crossed by land and river to Nombre de Dios to be embarked to the Old World. This is how Panama became important for world trade, and world trade became critical for Panama.

[3] Between 1979 and 1999, canal operations where in the hands of the Panama Canal Commission (a joint U.S.-Panama agency).

this economic structure, services represent 76 percent of Panama's GDP (1991-2003). Although the three pillars account for 42 percent of GDP, their employment contributions are much smaller.

According to labor market statistics, total employment was 1.21 million in 2006 (the labor force was 1.32 million indicating a 9.1 percent unemployment rate). Employment figures in Transport and Communications and Banking are modest: 91,802 (7.6 percent of the total) and 26,034 (2.0 percent), respectively. The fact that these activities represent 26.7 percent of the GDP and account for only 9.6 percent of the employment, contrast with agriculture which has a 7.2 percent share in the total GDP, but represents 19.6 percent of the total employment. In turn, 15.6 percent of employment is in the public sector. These differences are indicative of an unbalanced growth pattern, characteristic of a dual economy with sharp productivity differentials across sectors. In other words, the more modern services-based economy coexists with a relatively backward labor-intensive agricultural and industrial economy.

Annual GDP growth between 1990 and 2003 was on average 5 percent (3 percent in per capita terms), a relatively high rate for Latin American standards. However, when compared to other entrepôt centers such as Hong Kong and Singapore (both former British colonies) and to Puerto Rico (also dollarized and strongly influenced by the U.S.), growth performance is less impressive (see Table 1)[4].

More recent growth outcomes in Panama have been remarkable. GDP growth in 2006 was 8.1 percent and accelerated to 9.4 percent in the first quarter of 2007. Most analysts project growth rates between 8 and 9 percent until 2010. High growth will be result of the expansion of the Canal (approved by a referendum on October 22, 2006) at an estimated cost of $5.3 billion (30 percent of its current GDP). Also, the economy will be further stimulated by high growth in residential and non-residential construction (which grew 17.4 percent in 2006), as well as robust growth in the FBC and the CFZ.[5]

The purpose of this paper is to analyze Panama's growth strategy in light of the growth diagnostics methodology (GDM) developed by Hausmann, Rodrik and Velasco (2004). A thorough application of GDM requires more data than is available for Panama, especially in terms of factor prices and business surveys. Even if formal testing is not always feasible, GDM provides a careful and organized discussion of all possible constrains on growth. In particular, the methodology is of great interest value to understand why other service-based economies -such as Hong Kong- have been more dynamic than Panama, and why some sectors have lagged within the country.

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[4] The parallel between Panama and Singapore is particularly appealing because Britain withdrew of all its military forces in Singapore in the 1970s. British military bases are estimated to have accounted for 13-20 percent of Singapore's GDP (16 percent of employment) at the time. However, policies in Singapore have involved wide state participation in economic matters thorough forced savings, the role of development banks, and the so-called 'industrial-targeting'. In Panama, as in Hong Kong, policies have been more laissez faire at least in the "modern" sectors. See Young (1992).

[5] In recent years, growth in GDP has been higher than in GNP (a difference over 5 percentage points), suggesting that foreign investment is playing a prominent role.

Although the old-development theorists' arguments in favor of 'balanced growth' (i.e. proportional growth in all outputs) are no longer generally accepted, it is still important to underscore the problems associated with low growth in the less modern sectors of an economy.[6] This is particularly true if those sectors play an important role in the labor market. More specifically, the current development strategy, which puts enormous weight on the Canal's expansion, runs the risk of reinforcing the pattern of duality. Thus, understanding what constrains the backward and more labor intensive sectors of the economy, and providing policy recommendations to accelerate their growth, has a potentially sizeable payoff.

In this context, the objective of the paper is to propose a set of recommendations on what needs to be done in order to assure success of the current growth strategy. We have no doubts on the value of strengthening Panama's geographical comparative advantage with the Canal's expansion. The key question is to identify the additional steps which could promote growth in the non-canal economy. In addition to making growth more sustainable, growth acceleration in the traditional sectors can result in a reduction of inequality, which is extremely high in Panama.

To answer these questions the paper proceeds in the following way. Section 2 discusses some key features of Panama's economic structure that are important for the analysis. Section 3 analyzes Panama's growth using conventional techniques. In particular, we look at the role of the 'fundamental' determinants of growth, such as institutions, geography, and human capital. Also, the time series analysis shows that growth has experienced reversals while a standard sources-of-growth decomposition suggests that Panama has a severe productivity problem. Sections 4 to 8 deal with the GDM. Section 4 presents some general evidence from the Investment Climate Survey (ICS) on the main concerns of Panama's entrepreneurs. Section 5 discusses all the problems that could imply low social returns to investment. Section 6 analyzes the issues related to problems of appropriability. Section 7 introduces the problems of self-discovery, and Section 8 looks at financing issues. Section 9 concludes.

2. Panama's Economic Structure

The Canal

As mentioned in the introduction, the Canal is the key pillar of the economy, not only as a result of its direct contribution to output, but also because it is a large hub for the supply of services, such as insurance, maintenance and professional services.

The Canal has a relatively large impact on external and fiscal accounts. In terms of the Balance of Payments, net exports of services from the Canal were close to US$1 billion (2006). This is approximately equal to the value of Panama's total exports of goods (and three times net exports from the Colon Free Zone). In fiscal terms, transfers to the Central Government take three forms: i.) A fee per net tonnage; ii.) A fee for the utilization of

[6] Nurkse (1953) is perhaps the most well-known advocate of balanced growth or diversification in output.

public utilities by the PCA (especially water and electricity), and iii.) An annual dividend as the government is the only shareholder of the PCA[7]. In addition, the central government directly withholds a fraction of the salaries of the PCA employees (this last item represents around 0.5 percent of GDP). According to Figure 1, the Canal's contributions to the central government have increased significantly since 2000, reaching 3.5 percent of GDP in 2006 (three times more than during the 1990s on average), but still well below the fiscal dependency on natural resources in other countries, such as Venezuela or Ecuador.[8]

The recent positive trend in revenues reflects that, while the U.S. administration sought to recover costs, the PCA has generated profits and is increasing its contribution to the Panamanian government. The PCA has increased efficiency by reducing employment and controlling operational expenses, while traffic (in net tonnage) has increased by more than 5 percent per year. Also, tolls and fees for transit services have increased since 2002, and will continue to increase in the following years.[9]

Anticipating the Canal's expansion, which will require borrowing, the government decided in September 2004 to exclude the balance of the PCA from the fiscal accounts. The PCA is commercially run, its budget is not subject to the provisions of the government's budget law, the use of its revenues or assets to guarantee government debt is constitutionally prohibited (Art. 315). Furthermore, its board is not completely controlled by the government. However, the IMF has expressed concerns over the decision to exclude the PCA from the fiscal accounts because large additional borrowing by the PCA can compromise the sustainability of public debt.

Colon's Free Zone (CFZ)

In 1948, when the city of Colon was suffering from the reduction in military activities in the Canal Zone after WWII, the government created the CFZ as a center for the transshipment of merchandises.[10] The CFZ is largest free trade zone in the Western Hemisphere, and is the second largest in the world, after Hong Kong. Its installations, an area of 400 hectares, are operated by a public entity that charges rental and service fees to business operating as wholesale importers and re-exporters, distributors for multinational

[7] Since 2000, when the Canal was fully transferred to Panamanian ownership.

[8] This contribution is significant, but well below the average rent received form oil in countries such as Venezuela and Ecuador. In this sense, the Natural Resource Curse arguments lose some relevance for the case of Panama. Sala-i-Martin and Subramanian (2003), analyzing the case of Nigeria, argue that "some natural resources – oil and minerals in particular – exert a negative and nonlinear impact on growth via their deleterious impact on institutional quality." Other channels, such as the 'Dutch disease' (or real appreciation of the currency), are also absent in the case of Panama, as we will discuss below.

[9] In February 2007, the ACP announced a plan for increases in tolls in 2007-2009. The Cabinet approved a diluted version which, nonetheless, will raise tolls by 13.7 percent (annually) in the case of container carriers, and 9.7 percent in the case of other cargo vessels. This means an additional $380 million which could reduce borrowing for the Canal's expansion.

[10] The CFZ as an enclosure began operations in 1953. In its initial steps, businesses located in the CFZ were heavily subsidized (in terms of rental fees and cost of public utilities). In addition, firms were exempt from custom duties, income taxation (rates were very low), property taxes, and municipal licenses. In the beginning, there were many problems related to the smuggling of goods from the CFZ into the Panamanian economy. See Moreira (1995), Misión Fiscal a Panamá (1964) and World Bank (1995).

corporations, and export processing firms. The expansion of activities has been impressive (in 2004 there were 1,800 firms operating in the CFZ, compared to nearly 1,000 in 1990). These activities are largely tax free and highly complemented by financing provided by the FBC. In 2004, the CFZ generated 8 percent of Panama's total GDP, while directly employing 3 percent of the labor force (21,000 jobs).

The difference between the value of re-exports and imports by the CFZ has been significant, accounting to about a third of Panama's total exports of goods. Total trade volume has been increasing considerably. However, net exports have been decreasing in recent years (see Figure 2). In fact, net exports from the CFZ fell to US$350 million on average per year in 2002-2003, from around $550 million in 1999-2001.

Financial Banking Center

Much like in Singapore and Hong Kong, financial services have been the Panamanian growth industry since the late 1960s. Financial and business services developed as a result of deliberate policies that responded to the needs of foreign investors. In these three cases, financial centers initially had a regional character, taking advantage of the proximity to other countries and providing ease of operation of subsidiaries of foreign banks. In the case of Panama, dollarization was also a major advantage in order to become a financial center.[11]

In its origins, prudential regulation was nonexistent; banks operated freely, without reserve requirements and disciplined only by the market. In 1970 a new banking law created the *Comisión Bancaria Nacional* and imposed a reserve requirement (banks were also required to have contingent credit lines from foreign banks[12]). Under the new framework, financial intermediation experienced a significant expansion during the 1970s.

The debt crisis of the 1980s had devastating effects on the FBC. These problems were aggravated by more competition from other centers of "off-shore" banking and, specially, by the domestic political crisis. As a result of sanctions imposed by the U.S. government, banks were temporary closed in 1988, leading to 50 percent reduction in deposits and loans during that year. Although the system recovered during the 1990s, the lessons of the 1980s led to the adoption of a new banking law in 1998. A formal superintendency was created, Basel standards of prudential regulation were adopted, and money laundering activities were criminalized (IMF, 2001).

Foreign loans and deposits (as a percentage of the total) have been steadily decreasing since the late 1970s (Figure 3). Of the foreign component, 85 percent of the loans and 80 percent of the deposits correspond to other Latin American countries, suggesting that Panama is a regional (more than a global) financial center with a growing domestic market. Finally,

[11] According to Johnson (1976), "Panama has welcomed foreign financial enterprises with liberal banking laws and a generally laissez-faire attitude and has not (so far) attempted to coerce them into accepting some governmentally determined concept of obligations to the state that seriously impede their pursuit of profitable business." However, Johnson was relative pessimistic about the capacity of the financial sector to promote broad economic development in Panama.

[12] See Fedesarrollo (1972, p.120).

non-performing loans in Panama are among the lowest in the region, interest rates have been traditionally low, and levels of liquidity have been adequate and stable. These outcomes reflect a combination of factors, such as adequate regulation, competition by foreign banks, and low inflation. This high degree of financial depth is, as we will see, one of the key strengths of Panama's economy (Figure 4). Trusts administered by Panamanian banks have grown considerably in recent years (from US $ 3 billion in assets in 2001 to 5.5 billion in 2006), suggesting that the FBC is strong and dynamic.

In sum, Panama has a high degree of financial integration (perfect capital mobility), high financial deepening (total financial assets are equal to 300 percent of GDP, while domestic credit is close to 90 percent of GDP); and full dollarization. To some extent, these three features mutually reinforce each other (see Moreno-Villalaz, 1999 and 2005).[13]

Dollarization

Panama is perhaps the largest country in the world that has used the dollar as its legal tender for more than a century (even though it has a national currency, the balboa, which circulates as coins and is used as unit of account).[14] In practice, there is no central bank and the role of the balboa is insignificant. For all practical purposes, the dollar is Panama's currency.[15]

Figure 5 shows annual inflation rates in the U.S. and Panama between 1961 and 2006. Interestingly, Panama's inflation has been lower than in the U.S., which is not an obvious consequence of dollarization. Figure 6 depicts the real exchange rate measured in various forms (the bilateral rates with the U.S. using the CPI and the WPI, and the multilateral real effective exchange rates measured by the IMF) which is at odds with the observed long-run real appreciation of developing countries (as pointed by Goldfajn and Olivares, 2001). For example, Hong Kong, partially dollarized and also service-based economy, does not show such a pattern. One implication of the observed long-run real depreciation is that Panama does not conform to the typical pattern of countries abundant in natural resources.

To understand the possible causes of the observed real depreciation in Panama, it is useful to write the real exchange rate (RER), using CPI baskets and applying the law of one price for traded goods, as

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[13] Under dollarization, the absence of a lender of last resort forces banks to secure foreign funds in order to deal with liquidity shortfalls. This makes financial liberalization a necessary condition for successful dollarization. Concerns over the fact that monetary policy in Panama is determined by the policies of the main banks led in the 1970s to the proposal o creating a national stabilization fund. See Harberger (1972).

[14] Ecuador and El Salvador are larger, but their experience with dollarization is more recent.

[15] The U.S. dollar was widely used in Panama prior to the independence in part because gold from California was shipped through Panama in the 19th Century, and also because Colombia experienced a hyperinflation episode during the Thousand Days War (1899-1902) when annual inflation was 100 percent on average. The desire for monetary stability, the wide use of the dollar, and the political importance of close integration with the United States, explain Panama's de facto decision to adopt the dollar as legal tender. The 1904 Constitution (Article 117) says that: "No podrá haber en la República papel moneda de curso forzoso".

$$RER = \frac{E * PT^{*(1-\alpha^*)} PNT^{*\alpha^*}}{PT^{*(1-\alpha)} PNT^{\alpha}}$$

$$= \frac{\left(PNT^*/PT^*\right)^{\alpha^*}}{\left(PNT/PT\right)^{\alpha}}$$

where α is the share of nontraded goods and services (NT) in the economy (an * denotes the foreign country). A real depreciation can be interpreted as a faster increase in the prices of nontraded goods in the US relative to Panama. According to the Balassa-Samuelson effect, countries with rapid productivity growth experience increases in the relative prices of NT goods (under the assumption that productivity growth lowers the prices of traded goods). This is a plausible explanation, because –as we will show- productivity growth has been higher in the US than in Panama. It is also possible that productivity growth in Panama has concentrated in the service sectors, resulting in a real depreciation (as suggested by Frankel, 2001).

Dualism

Panama suffers from chronic dualism.[16] Salaries paid in the modern services (as well as in government services) can be three times higher than in agriculture and manufacturing, reflecting differences in labor productivity (Figure 7 shows the widening gap in labor productivity between the traditional and modern sectors). Moreover, labor productivities in agriculture and manufacturing are much lower in Panama than in Hong Kong and Singapore (Figure 8). Regional differences within the country are equally striking. Per capita GDP is much lower in the rural areas, as only 20 percent of GDP is produced outside the province of Panama and the CFZ.

In general, modern sectors have been less regulated and more flexible to adjust to market conditions. Labor, trade, and tax policies imply greater 'economic freedom' in the modern services, relative to the more backward sectors. For example, the agricultural sector is heavily protected (through tariffs and quotas) and regulated (minimum wages, reference prices, etc.). Policies were oriented towards achieving self-sufficiency, rather than competitiveness. Something similar occurred in the manufacturing sector, where effective tariffs are often over 100 percent (See World Bank, 1995 and MEF, 1999).

Labor regulation is one example of policy-induced dualism. The 1971 labor code established a complex system of sector-specific minimum wages, raised costs of dismissal, restricted temporary labor contracts, and gave the government ample capacity to intervene in labor relations (World Bank, 1995 and 2000). Output growth in manufacturing and agriculture has been sluggish, while employment in these sectors has grown at an even

[16] This concept refers to various asymmetries in production and organization. The term was coined by Boeke (1953) to represent a society divided between the traditional and modern (capitalist) sectors. The asymmetries can relate to the existence of fixed factors of production that cannot move between sectors, or to the absence of profit maximization in one of the sectors (as in Lewis' model), or to rigidities in the labor market (as in Harris-Todaro). Dualism can also refer to asymmetries in the stage of development between two regions (as in the North-South models).

slower pace.[17] Modern sectors, such as the Canal and the CFZ have separate labor regulations, which allow greater flexibility.

Inequality

By any measure, Panama has one of the highest levels of inequality in Latin America. Poverty rates, in contrast, are relatively low at least when measured by the two dollars (PPP) per day poverty line (See Figure 9).[18] However, poverty rates are unusually high relative to other countries with similar incomes. In other words, countries with lower availability of resources, but with less inequality, tend to have less poverty. Also, the differences in poverty and extreme poverty between the city of Panama and the rest of country are considerable: 20 percent vs. 63 percent in the case of poverty and 4.4 percent vs. 35 percent in the case of extreme poverty. Poverty is very high among the indigenous population.

Given its high inequality, Panama is paradigmatic example of the limitations of poverty-reducing strategies based solely on growth. Accelerating growth alone does not result in a rapid poverty reduction, whereas a combination of faster growth and lower inequality can provide a large dividend in terms of poverty.

3. Panama's GDP growth

Before we embark on Panama's growth diagnosis, it is useful to take a look at growth performance using three standard analytical devices. We start by discussing the insights provided by cross-country growth regressions. We then analyze the time series evidence in order to identify structural breaks in Panama's recent growth. We finish this section by performing and interpreting the standard sources-of-growth decomposition.

Growth fundamentals

Following Glaeser et al. (2004), Table 2 shows a standard OLS regression where the dependent variable is the growth of per capita income between 1960 and 2000. The independent variables are initial income per capita in 1960, initial level of schooling, the share of the population living in temperate zones, as well as a measure of institutional quality such as constraints on the executive, autocracy, and risk of expropriation (averaged over the same period). The regressions include a dummy variable for Colombia, Ecuador, Panama and Venezuela, which at one point in history were part of the same country. The precise definitions and sources of the variables are available from Glaeser et al. (2004).

[17] Estimated output elasticities are 0.1 for employment in primary sectors, and 0.5 for manufacturing, while in retail, real state, social services elasticities are close to 2. Interestingly, elasticities in finance and transport are 0.7. See Galiani (2006).

[18] According to Paes de Barros et al. (2003) the poorest deciles are poorer while the rich are richer in Panama, in comparison with the Andean countries (with the exception of Colombia). Also, in Panama average income is 2.5 times the poverty line, in contrast with Honduras and Nicaragua (where average income is equal to the poverty line). This means that is easier for Panama to reduce poverty.

The results confirm the existence of convergence, the adverse effects of tropical conditions, the positive influence of the initial level of education, and the positive correlation between growth and the average assessments of institutional quality. The dummy for Panama is the only significant country dummy. Moreover, the sign of the coefficient on the dummy variable is positive, indicating that per capita income in Panama growths an additional 0.9 percentage points per year due to other factors that are not captured in this simple empirical model.

It is well known that human capital and average institutional quality can improve as a result of the growth process itself, so that causality runs in reverse. We deal with this issue by using instrumental variables. The choice of instruments follows the now conventional use of settler mortality and indigenous population density in 1500, first introduced by Acemoglu, Johnson and Robinson (2001 and 2002).[19] Arguably, these variables are good instruments for modern day institutions because when mortality rates where high or when a region was already densely urbanized by the locals, the Europeans introduced exploitative institutions, rather than settling themselves. Two other instruments are French legal origin, which La Porta et al. (1999) find to be associated with less constrained executives, and the share of population living in temperate climates, a measure of geographical conditions, which Sachs (2001 and 2003) has found to be negatively associated with development.

Table 3 presents the results of the instrumental variables estimation of the effects of average years of schooling between 1960 and 2000 and average institutional quality on log GDP per capita in 2000. The regressions also include the dummy variables for the countries of interest. Panel A presents the second stage results and shows that, once variables have been adequately instrumented, educational attainment is the only variable that matters as a determinant of per capita income. None of the dummy variables come out significant in this stage.

Panel B is perhaps more insightful from the viewpoint of this paper because it indicates that the choice of instruments explain well both institutions and years of schooling. That is, colonial times variables, such as settler mortality, density of indigenous population, and legal origin, as well as geographically-driven variables (such as the presence of tropical conditions) are good predictors of today's levels of schooling and institutional quality. Interestingly, Panama's institutions are not better than what would be predicted by the model, contrary to what could be expected given the strong U.S. engagement since 1903.[20] In contrast, in the case of education the country dummy comes out significant. This means that, for reasons not accounted by the model, the population has on average three more years of schooling. Although we will postpone the discussion as to why Panama has been

[19] According to their figures, indigenous population density in 1500 was higher in Panama than in Colombia and Venezuela, but lower than in Ecuador. Settler mortality was two times higher in Panama relative to the other three countries. Based in Acemoglu et al. (2001 and 2002), this evidence alone would predict lower quality institutions and long term growth in Panama, relative to the other members of la Gran Colombia.

[20] This is an interesting result because it suggests that the U.S. presence in the isthmus did not improve institutional quality. The current institutions are in line with those that correspond to the legacy of the Spanish colonization.

more successful in terms of educational attainment, this is likely the Canal's most tangible dividend from the viewpoint of long-term growth.[21]

Time series evidence

Unfortunately, GDP data for Panama are only available since 1950.[22] In addition to the scarcity of data, the treatment of the services provided in the Canal Zone has been a source of major changes, such as the 1982 revision (with data starting in 1980) when the transport, storage and communication services provided by the Canal were incorporated into the national accounts, following the 1977 treaties with the U.S. As a result of this revision, GDP rose by 15 percent in 1980, while output in transport and communications increased by 150 percent.[23]

As shown in Figure 10, economic growth in Panama has been generally higher than the average for Latin America. Average annual growth was over 8 percent during the 1960s, but subsequently decelerated until reaching very low rates (negative in per capita terms) in the 1980s. Since the 1990s, Panama has again outperformed the region. At the same time, GDP growth volatility has been relatively average, at least compared to other Latin American countries.

It is also useful to identify structural breaks in economic growth. We follow closely the empirical strategy of Berg et al. (2006) and apply the two-step procedure proposed by Bai and Perron (1998 and 2003) aimed at testing for multiple structural breaks in a single time series, when both the total number and the potential location of those breaks are unknown.[24] Figure 11 presents the results of the estimation that find evidence of a downbreak in GDP growth in 1981, followed by an upbreak in 1989.[25]

The 1980s were a particularly bad decade for Panama's economy. The debt crisis resulted in a severe contraction in deposits in the FBC (which fell 25 percent between 1982 and

21 Higher education is likely to be a consequence of the significant flows of immigration and the U.S. influence in the educational system from the 1920s onwards.

22 The source is *Contraloría General de la República* which is also responsible of producing much of the country's economic information.

23 A new base was adopted in 1996, when additional methodological changes were introduced.

24 In the first step, the procedure identifies all possible breaks and estimates their statistical significance using *F* tests. If there is evidence of at least one structural break, the procedure then selects the optimal number of breaks. In empirical work, an important issue is concerned with the selection of the minimum number of years between breaks. This decision involves a trade-off because choosing a large number of years means that the procedure can miss some true breaks. But, on the other hand, a small number of years lowers the power of the test.

25 We chose a minimum number of years equal to h=8, that represents a 15 percent of the total sample (55 observations). In order to test robustness of our results, we used lower values of h and included a dummy variable for 1980 (to capture the inclusion of Canal Zone in national accounts). The result of a downbreak in 1981 remains unchanged.

1984).[26] More importantly, by the end of the decade (when most of the region was already recovering from the debt crisis), Panama experienced severe political unrest, with significant economic consequences.[27]

In 1987, the U.S. imposed economic sanctions in an effort to remove General Noriega (commander of the Panamanian Defense Forces) from power. Panamanian assets in the United States were frozen, canal payments to the Panamanian government were suspended, the U.S. revoked Panama's most favored trade status and banned all payments from American individuals and companies. The result was a 13.4 percent GDP contraction in 1988.[28] After the return to democracy in late 1989, growth rates rebounded to an average over 5 percent per year (see Figure 11).[29]

Sources-of-growth decomposition

To gain further insight into Panama's growth performance, this section presents the result of a standard sources-of-growth decomposition. The methodology (which is described in Appendix 1) considers three factors of production (labor, physical capital, and human capital). GDP data come from *World Development Indicators* (WDI) for the 1960-2005 period, while the capital stock was constructed applying the perpetual inventory method to capital formation data (net of depreciation) reported by CEPAL (1960-1980) and WDI (1980-2005). Employment series were obtained from *Contraloría General de la República* for the period 1963-2005. We follow Calderón et al. (2002) and construct a human capital index by adding the share of the population with different levels of schooling (primary, secondary and tertiary), obtained from Barro and Lee (2000), weighted by their respective rates of return, obtained from Psacharopoulos (1994).

Table 4 shows the results from the decomposition. Half of the average GDP growth between 1964 and 2005 (4.1 percent) can be "explained" as a result of physical capital accumulation, while the other half roughly corresponds to increases in employment. The decomposition also shows that total factor productivity has been a negative force in the growth process.

The information per decades provides additional elements useful for the analysis. Growth during the 1960s was driven mostly by investment in physical capital and increases in

[26] According to Caballero (1988) the introduction of International Banking Facilities (IBF) in 1981 allowed U.S. banks to conduct offshore operations directly. Between 1982 and 1984 Bank of America and Citibank reduced their assets in Panama by 93 percent and *63* percent, respectively.

[27] Political problems started in late 1985 with the murder of Hugo Spadafora (who planned to expose Noriega's involvement in drug trafficking and arms smuggling) and the subsequent resignation of President Nicolás Ardito Barletta. According to Gilboa (1995), a turning point occurred in February 1988, when Noriega was indicted in Florida for drug trafficking and money laundering.

[28] The end of the Noriega regime came after a large scale military intervention in December 1989. Noriega was finally extradited to the U.S. on January 3, 1990.

[29] Estimates from Hufbauer, Schott and Elliot (1990) indicate that the actual cost of sanctions was close to 6 percent of Panama's GDP. The general conclusion is that sanctions to Panama (although costly) were relatively ineffective in terms of achieving their policy goal (see Davis and Engerman, 2003).

productivity. During the 1970s, economic growth decelerated, in spite significant progress in human capital, mostly because of the reversal in TFP. The 1980s, the lost decade for Panama's growth, can be explained by low investment in physical capital, coupled with a further reduction in productivity. The recovery since the early 1990s has been, to a large extent, the result of modest increases in human and physical capital, combined with a positive contribution of TFP.

Figure 12 summarizes the main lessons of this exercise. In the long-run, Panama's growth strategy has been driven by physical capital accumulation, while human capital has played a moderate role. The most revealing feature is, however, the negative role of total factor productivity. There is no doubt that the gap in growth between Panama, on the one hand, and Hong Kong, on the other, is explained by TFP.[30]

We calculated TFP for manufacturing sectors between 1963 and 2000, using 3-digit annual industrial sector data from UNIDO (INDSTAT). The results (not reported) suggest that the observed negative TFP growth is generalized across manufacturing sectors, with the only exception of Tobacco. Also, output per worker has decreased continuously in most sectors since the 1980s.[31]

4. Growth Diagnostics: General aspects

We now turn to the application of the growth diagnostics methodology (GDM). The overall idea of the GDM is to identify whether low growth is the result of low returns or high cost of finance. In turn, low returns can arise from problems of appropriability or from low returns to factor accumulation. Disentangling whether 'the most binding constraint' to grow is related to low returns, problems of private appropriability, or inadequate financing is more art than science especially when data are scarce. However, we will try to present some evidence in an organized and systematic way, which allows us to reach some conclusions.

Low private returns, in turn, can be the result of various forces, such as inadequate availability of factors of production (physical and human capital) and technology. Geographical barriers can also be an impediment to adequate returns. Appropriability problems can arise from different sources, such as high and unstable rates of effective taxation. Macroeconomic instability, leading to uncertainty in terms of inflation, exchange and interest rates, as well as in policy variables, can exacerbate this type of problems. But, ultimately, weak institutions are the main source of problems of appropriability. Inadequate enforcement of property rights and the rule of law, high levels of crime and corruption reduce private returns. Lastly, low returns can also arise from the private sector's inability to identify or find attractive business opportunities. In Hausmann and Rodrik's (2005) terminology, this is the problem of 'self-discovery'.

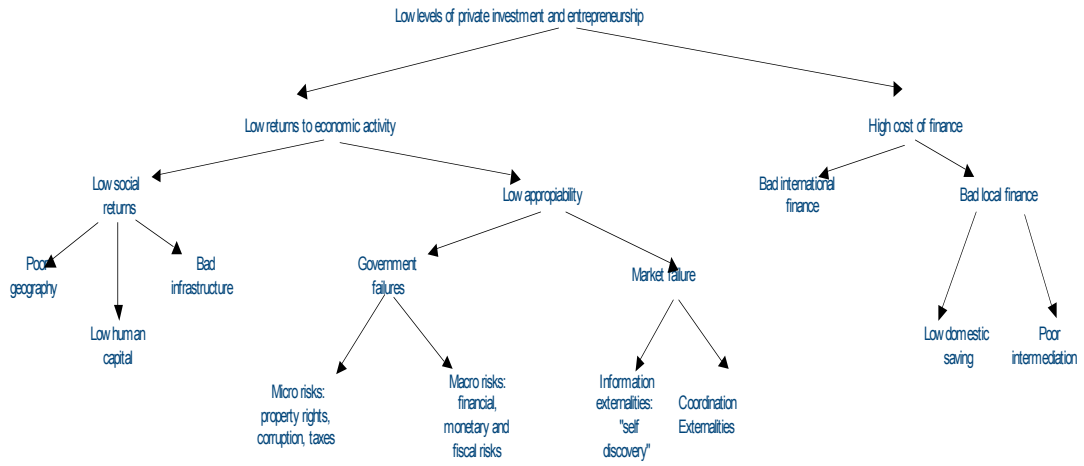
[30] In this sense, the experience of Panama is closer to that of Singapore where the government has pursued a development strategy based on the accumulation of physical capital. See Young (1992).
[31] These results are available from the authors.

Inadequate financing can also have diverse origins. Lack of access to external financing is a frequent problem, often associated with high country risk premia (interest rate spreads) or low FDI. As discussed by Hausmann et al. (2004), these problems can be caused by many factors, such as regulations affecting foreign capital, existing levels of external debt, and macroeconomic conditions. However, the most recent research on the determinants of capital flows (specifically FDI) points again in the direction of institutions (see, for example, Alfaro et al. 2005). Problems related to the development of domestic financial markets are equally important. In this case, financial repression, inadequate prudential regulation, and weak enforcement of creditor rights can be the more fundamental causes. Low savings can also be a factor resulting in high financial costs.

Our plan is to follow each one of the branches of the tree shown in Diagram 1. Using evidence for multiple sources (including recent surveys) we will conclude that the problems of appropriation are central to the story in the case of Panama. Within this category, we consider that the regulatory framework, especially in the traditional sectors, is the main force that prevents faster output growth. Labor market regulation is an excellent example, but is not the only one. Protectionism, high levels of corruption, and strong and influential interest groups, create an entrenched status quo that is functional to various groups, including the modern service sectors.

Self-discovery is another interesting dimension in this case. From an early success in identifying three key sectors (the Canal, CFZ and FBC), finding new opportunities has become more difficult. Many options, ranging from telecommunications to tourism are often mentioned, but, as we will discuss, we favor a strategy which focuses on lifting some general and horizontal constraints that impede a more balanced growth path.

Diagram 1. Sources of low economic growth



Prior to analyzing each one of the branches of the GDM tree, we take advantage of the information contained in the World Bank's *Enterprise Surveys* (*ES*) which periodically collect information from formal firms (more than 5 employees) in the manufacturing, services, transport, warehousing, and communications sectors. Although the sample probably over-represents firms in the modern sector, the information is nonetheless relevant because it allows us to identify what firms' consider are the most severe problems for growth.[32] The survey includes information about the firms' size, sector of operation, and experience.

Among the possible obstacles to the firms' operations the survey includes access to credit, infrastructure (power and telecommunications), labor market (quality of labor and regulation), relations between government and business (i.e., corruption), competition from informal firms, and other factors (taxation, crime, transport, etc.).

To simplify the analysis we group responses for which firms consider that a problem is a *minimum* obstacle (adding responses *"no obstacle"*, *"minor obstacle"* and *"moderate obstacle"* in the survey's terminology) and *severe obstacle ("major obstacle"* o *"very severe obstacle"* in the survey's code).

Comparing firms' perceptions in Panama with those in other Latin American countries (Argentina, Bolivia, Colombia, México, Peru, Paraguay, and Uruguay) shows some interesting differences. In general, apart from specific problems in Panama related to power infrastructure, all other problems seem to be less severe than in the rest of the region (Table 5). Panama's firms (or at least those surveyed) have a more favorable situation in areas such as informality, corruption, telecommunications infrastructure, access to credit, quality of the labor force, and labor regulation.

[32] For a complete description of the methodological aspects of the survey see World Bank (2007).

To provide a more precise assessment we estimated a probit model, which allows us to control for other characteristics of the firm, where the dependent variable is a dummy that takes a zero value if the firm considers the specific factor is a minimum obstacle and one when it is regarded as a severe obstacle. Control variables include economic sector, size (small, medium, or large), whether the firm is an exporter, age, experience of the manager (in years), and the equity share of the largest shareholder. We add a dummy variable for firms in Panama. The estimated marginal effects indicate that Panama's business environment is of better quality than in the rest of the region (see Table 6).

5. Growth Diagnostics: Low social returns?

According to the GDM (

Diagram 1), we will discuss three aspects that can explain low social returns: (i) poor geography; (ii.) low human capital, and (iii.) bad infrastructure. The latter two issues are clearly intertwined with the capacity of government and, in the case of infrastructure, with access to long term financing, suggesting that the separation of themes is, to a large extent, a matter of choice.

Geography

The relationship between geographical conditions and development is the subject of an extensive literature. For example, Jeffrey Sachs and coauthors (Gallup et al., 1998 and Sachs, 2001 and 2003) have underscored the adverse consequences of tropical conditions, with special attention to the effects on health. Contrary to the predictions of these models, Panama's geographical location is its greatest comparative advantage. Interestingly, development in Panama came along with scientific advances in the prevention of tropical diseases, showing that geography is not destiny.[33]

Human Capital

As we already mentioned, Panama does not seem to be constrained in terms of human capital. Aggregate indicators, such as enrollment rates, tend to be higher than in the rest of Latin America. This is particularly the case in primary and tertiary education (Figure 13). Progress in education has been outstanding since 1991. For example, universal enrollment in primary has been accomplished, while enrollment in tertiary doubled to 43 percent. The increase in years of schooling has been equally impressive: from 4.6 years in 1960 to 8.3 in 2000 (Figure 14), in spite of its relatively high initial value. Also, high returns to education should be observed if human capital is relatively scarce. But, as shown in Table 7, this does not seem to be the case.[34] Quality of education has been mentioned as a potential constraint. Unfortunately, only recently Panama participated in an international standardized test sponsored by UNESCO that will allow comparisons in terms of education quality (the results will be available in 2008).

Indirect evidence on school quality based on the returns to education of immigrants in the U.S. labor market shows that Panama is not in a unfavorable situation, at least when compared to other Latin American countries. For example, Bratsberg and Terrell (2002) estimate that the return to education of Panamanian immigrants in the U.S. (i.e. the value that the U.S. labor market places on a year of schooling from Panama) is 3.6 percent (using

[33] This fascinating history is well documented in the classic work of David McCullough (1977) and in the more recent work of Parker (2006).

[34] According to Céspedes (1985), Panama's educational system was in ruins after Colombia's civil war of the "Thousand Days" (1899-1902). As all schools had been closed during the war, education became a priority after independence in 1903. Law 11 of 1904, one of the first laws of new republic, established the framework for mandatory and free primary education in the isthmus. In addition, the construction of the Canal between 1904 and 1914 had positive spillovers on education (one case in point is the immigration of medical personnel). Also, the government promoted the immigration of teachers from Germany, Switzerland, and the United States, while a group of Panamanians was sent overseas to receive education. By 1908 there were already 222 schools, while between 1920 and 1934 enrollment rates in primary education were doubled. Illiteracy rates fell from 70 percent in 1923, to 50 percent in 1930, 28 percent in 1950, and 20 percent in the 1960s.

the 1990 U.S. Census). This figure is higher for Panama than for any other Latin American country in the sample, with the exception of Argentina (5.1 percent), Brazil (4.1 percent), Costa Rica (3.8 percent), Chile (4.4 percent), and Uruguay (4.6 percent). The corresponding figure for Singapore is 6.2 percent.[35] On this account, Panama's schooling quality is intermediate in the regional context, but inferior than the one observed among its more natural peers, such as Singapore.

According to Hendricks (2002), the 463 Panamanian immigrants (in the database of 106,263 immigrants between the ages of 20 and 69), had on average 13.3 years of schooling (compared to 7.2 for the population in Panama[36]). Panamanian immigrant's earnings were 90.6 percent of those of a native-born worker with identical age, education, and sex. This figure, again, is well above that of other Latin American countries in the sample, with the exception of Argentina, Brazil and Uruguay. The conclusion is that in terms of education quality, Panama seems to be in a better position than most other countries in the region.

Hendricks (2002) uses this result to investigate the role of educational quality differences in explaining differences in per-capita income across countries. Decomposing earnings differences between the U.S. and Panama into contributions of physical capital and measured and unmeasured skills, he finds that mean earnings per worker in Panama are 0.22 of the U.S. level. The lower Panamanian capital-output ratio accounts for a reduction of earnings in Panama to 0.93 of the U.S. level. Lower measured skills reduce further earnings in Panama to 0.71 (based on human capital stocks and returns to education in Panama), while lower unmeasured skills bring them to 0.66 (based on what Panamanian immigrants earn in the U.S.). This means that there is a 3.1 factor to be explained (0.66/0.22) which is attributable to differences in productivity. The unexplained part is large for Panama, relative to the large majority of 67 countries in the sample, reinforcing our view that Panama has serious productivity problems.[37]

In a recent study, Galiani (2006) also finds that TFP has performed poorly during the last 25 years in Panama. Using household surveys, he computes hourly real wages per unit of human capital and finds a declining trend. Average wages did increase, but mostly as a result of the considerable increase in human capital and not because workers became more productive given their human capital. In other words, workers with the same human capital did not experience, on average, an increase in real wages. In the medium term, if output grows faster than predicted in some sectors that are skill intensive, or this intensity increases over time beyond what is expected, human capital will emerge as a constraint. However, this is not likely to occur soon.

[35] They also find that differences in rates of return in 1990 are related to differences in schools characteristics in 1970 (when immigrants undertook their education). Measures of school quality include pupil-teacher ratios in primary schools, relative expenditures per pupil (expenditures per student divided by per capita GDP), and years of compulsory education.

[36] According to Barro and Lee (2000).

[37] For example, the unexplained factor is 1.0 for Mexico, 2.1 for Argentina, 1.9 for Brazil, and 1.8 for Colombia. The average for the full sample is 2.2.

From a different angle, Paes de Barros et al. (2002, p. 276) reach a similar conclusion and argue that what explains lower incomes in Panama relative to OECD and certain Latin American countries are differences in job quality. The same is true in the case in the explanation of poor vs. non-poor incomes in Panama. Even though there are differences in schooling (between poor and non poor), differences in job quality explain up to 50 percent of lower incomes among the poorer deciles in Panama. This piece of evidence suggests that Panama is not constrained by human capital. It is constrained by the availability of high quality jobs. The slow progress, and in some phases reversals, in productivity is consistent with this view.

Even if the quantity and quality of education do not seem to be Panama's main constraint, two caveats are in place. First, tertiary education in Panama is concentrated in some disciplines, such as law, that have been important for the development of the FBC and other services. However, the technological parks and export processing zones require a different type of training. Second, education inequalities (both regionally and at the individual level) are a problem. All human capital measures are substantially lower in the rural areas, and especially among the indigenous and poor. To give a sense, illiteracy rates for adult women in the bottom quintile were 29 percent in 1997, while average schooling was 4.2 years in this group, compared to 11.3 years in the top quintile (see Table 8). Differences are even greater between provinces. For example, in the city of Panama illiteracy rates are 2.7 percent and the population has close to 10 years of schooling (9.8 for men and 10.2 for women). In contrast, in the province of Darien (the poorest) illiteracy is very high (44 percent), while the educational attainment is minimal (3.3 years for men and 2.3 for women). These differences reinforce the dual structure of the economy and indicate that although education may not be a restriction in the modern sector, it is one of the factors that prevent the development of the more backward sectors. In fact, low education is what keeps the labor market segmented.[38]

Infrastructure

Physical measures, as well as perception-based surveys, suggest that infrastructure is not a major problem in Panama. According to World Bank data, 35 percent of the roads are paved, well above figures for other countries such as Chile and Mexico. However, Panama is lagging in terms of the information and communications technologies. Coverage in telephones lines (fixed and mobile), computers, and broadband internet access are, in all cases, below the regional average. In turn, ICS data show some level of inefficiency in the case of electricity utilities. Power outages seem to be relatively high. Some analysts consider that power outages are expected until 2010 because generating capacity will be insufficient given the current growth in demand.[39] In 2010 a new 223 MW hydro power plant is expected to be completed (lack of past investment in the sector reflects regulatory problems). Interestingly, outages affect mostly the residential and traditional sectors, as the modern activities (PCA and Banks) self-generate their own power needs.

[38] Employees in the FBC must have a second language, and a graduate degree in the case of the PCA.
[39] See Chapman (2007).

Interviews conducted in Panama suggest that problems are related to high costs. A case in point is electricity and land transport costs in the country. In a recent survey of approximately 200 firms for the *Foro Nacional para la Competitividad*, respondents considered the high cost of electricity as the main obstacle for production across all firms' sizes (labor costs were the second main obstacle).

Finally, indicators from the Global Competitiveness Report suggest that Panama has better infrastructure that most countries in Latin America, but worse than in Singapore and Hong Kong. According to the World Business Environment Survey (from the World Bank), Panama is one of the few countries where respondents considered that infrastructure is not a problem for business development. Fewer than 15 percent of the respondents considered that it is an obstacle.

6. Growth Diagnostics: Appropriability Issues

Investment is discouraged when social and private rates of return differ considerably. This occurs when there are problems of appropriability. According to Hausmann and Rodrik (2005), these problems can emerge from various sources: i) high rates of taxation; ii) macroeconomic unbalances which create uncertainty over key variables; iii) poor definition and protection of property rights (leading to crime, corruption and judicial manipulation), and iv) uncertainty associated with political instability and changes in the rules of the game.

Issues related to the tax structure

Tax revenues in Panama are close to 9 percent of GDP (2003), one of the lowest levels in Latin America (see Table 9).[40] This is the result of narrow tax bases and low tax rates of the VAT (known as ITBMS), in addition to the large number of exceptions and exemptions in income taxation. Chronic tax evasion problems also result in very low tax productivities (IMF, 2006). For example, in the case of the VAT, the general rate is 5 percent and revenues are only 0.9 percent of GDP.

Regarding income taxation, the highest marginal tax rate is 30 percent, in line with the regional's average (in 1998 it was only 15 percent). However, many exemptions and special treatments remain in place. For example, profits from the FBC were exempt until 2002, while in the case of the CFZ the applicable tax rate is much lower. Although tax reform has been a focal point of the economic policy debate in Panama, progress has been limited. The reason is that with the current levels of taxation, plus revenues from the Canal, the government is able to pay for its expenses.

[40] There were some tax initiatives during the 1990s. In June 1995, a reform lowered the maximum corporate income tax from 34 percent to 30 percent; increased the income tax for exporters in the Colon Free Zone from 2.5–8.5 percent to 15 percent, and generalized a tax credit of up to 25 percent of investment. In September 1996, however, the income tax for exporters in the Colon Free Zone was eliminated.

The 2002 tax reform broadened the ITBMS to services but reduced personal income taxation.[41] The 2005 tax reform further reduced income tax rates for individuals (from 30 percent to 27 percent) and introduced a minimum tax on income (6 percent of gross income for high earnings individuals). Sales of services to businesses in the CFZ became liable to income tax.[42]

This discussion suggests that, from the point of view of appropriation, taxation is not major concern in Panama. In fact, according to the Investment Climate Survey, respondents consider that corporate income taxation is relatively low (both in comparison to Latin American and OECD countries). In spite of this, the number of payments and the time it takes to file taxes do not compare favorably (Table10).

Issues related to macroeconomic instability

As we discussed in the previous sections, Panama's track record in terms of inflation is impressive. There are, however, other features of its macroeconomic performance that are less favorable. Figure 15 suggests that dollarization has brought low inflation and greater financial depth, but not low fiscal deficits (Edwards, 2001 and Goldfanj and Olivares, 2001). Public and external debt (both as percent of GDP) is larger in Panama than in the region as a whole (Figure 16).

Even in the absence of currency risk, Panama's default risk is not negligible. According to Standard and Poor's rating structure, as in Costa Rica and Guatemala, Panama's external debt has a BB rating (July 2007) below the investment grade of Singapore (AAA), Hong Kong (AA), Chile (A), Mexico (BBB), Brazil (BB+), Colombia (BB+), El Salvador (BB+), and Peru (BB+). On this account Panama looks like an average Latin American country.

In terms of actual spreads on sovereign bonds, default risk is higher than in Chile and Mexico, but lower than in Colombia and Peru (Figure 17). This suggests that rating agencies are more worried about Panama's debt sustainability than markets themselves. In any case, the fiscal conditions are not optimal, and markets consider that there is a non negligible default risk. History does not help: Suspension of external debt payments 1987-88 and frequent debt-restructuring have affected its creditworthiness.

[41] The reform raised the personal income tax exemption from US$3,900 to US$10,400. Banks' income, previously largely exempt, became subject to a minimum tax. The annual business registration fee was raised from $150 to $250. The corporate income tax rate was scheduled to be lowered from 30 percent to 29 percent in 2005, and 28 percent starting in 2007. The ITBM (renamed ITBMS) base was widened to include services, albeit with many exceptions (health, education, transportation, electric power, fixed telephone, press, mail, insurance, and various other services). Small businesses are exempted (annual sales less than $36,000).The 5-percent consumption tax levied on a selective basis was extended to include luxury goods.

[42] Other measures included an increase in fees paid by businesses in the CFZ, the cancellation of the 2004 Industrial Development and Incentive Act (*Ley 11 de 2004*) and the elimination of reforestation and nontraditional export tax incentives. ITBMS rate on tobacco were raised to 15 percent.

However, macroeconomic instability does not seem to be a major growth constraint. In spite of fiscal deficits, domestic interest rates are low. This is mostly the result of dollarization, free capital mobility and a deep financial system.

Problems of corruption and property rights

To asses this issue we use the international comparisons for 208 countries in 2005, obtained from Kaufmann et al. (2006)[43]. For each variable, the information is presented both in terms of the average value and the confidence interval (vertical lines). Higher values represent higher quality institutions. In general, Panama has an intermediate position in most institutional measures.

Corruption is one of Panama's most serious institutional problems. Figure 18 indicates that Panama is perceived as being more corrupt than other emerging market economies. Other sources, including the Heritage Foundation and Transparency International, confirm this assessment and suggest an increase in corruption in the earlier part of the present decade (see Figure 19). The influence of special interests on regulations, decrees, and laws seems to be greater than in the average Latin American country. These conclusions are consistent with the Doing Business Report where the share of revenues used to "get things done" is greater in Panama than in the region. Similarly, data from the Global Competitiveness Report also suggests problems in the area of firms' influence in regulatory and tax decisions.

Interestingly, the most prevalent type of corruption in Panama seems to be political, more than bureaucratic. People distrust politicians and consider the diversion of public funds as common practice.

Concerns are more related to capture of the State, than with problems of appropriability resulting from criminality. In fact, in the area of property rights Panama has a relatively comfortable position. As expected in the context of a dual economic structure, institutions work better in some sectors, such as the financial system. In this case, the standards are closer to those of the OECD countries than to other emerging economies. This is the case, for example, of measures such as creditors' rights and the coverage and information quality of credit bureaus. In other economic areas the quality of the regulation is lower. This is the case of judicial procedures to enforce contracts (See the Doing Business Report from the World Bank, 2006).

Policy instability

Policy instability does not seem to be an issue in Panama, at least judging from the perception expressed in business climate surveys. In fact, in other countries of the region, such as Ecuador, Peru, and Venezuela, nearly 90 percent of the respondents consider that instability in the rules of the game are either a moderate or a serious obstacle for business

[43] Based on opinions surveys to various individuals (businessmen, experts, and government officials).

development. Panama has one of the lowest measures of policy instability of the region (comparable to Costa Rica and Chile).

To summarize this section, macro risks not a major problem, despite the large fiscal deficit and external debt. Default risks are low (comparable to countries with a more solid fiscal situation), possibly as a result of the key role of the FBC for the economy. A default is unlikely because markets and politicians know that it would devastating for the FBC and, hence, for the Panamanian economy. Low default risk implies low interest rates, in spite of a weak fiscal situation. Low inflation, primarily a result of dollarization, has also been a major advantage, at least relative to other countries in the region.

7. Growth Diagnostics: Too few ideas?

In this section we make extensive use of Hausmann and Klinger (2006) and Klinger and Hausmann (2007). In particular, we use their measure of sophistication of a country's export basket (more specifically their variable EXPY which represents the income level associated with a country's export goods basket)). Panama's export sophistication is similar to that of countries with a much lower per capita income, such as Ecuador and Senegal (See Figure 20).

Panama's export goods base is very narrow. There are few exports, apart from the modern services (the other exports are mainly fishing and bananas). To show that very few ideas have been appeared in recent years it is illustrative to look at the number of goods exported (using a 3 digit classification). Out of 240 potential different types of goods, an average developed country exports 232, while Latin American countries export 210 (Figure 21). Panama not only has a low number (70), but also very limited changes over time (in contrast to El Salvador which faces a similar problem[44]). The trend in Panama goes in the opposite direction (concentration rather than diversification).

Also, Panama's production structure is very concentrated in a few goods. In terms of Hausmann and Klinger's representation of the product space, a good proportion of Panama's production is in the periphery in the sense of having weak links with the other sectors (animal products, fish and crustaceans, garments, jewelry). The implications are of interest because when a country is not in the dense part of the production space (what they call "forest") productive transformation is more difficult because it is harder to adapt capacities to produce something that is entirely different. However, throughout the years there has been a timid move to the center of the forest, though the production of machinery and pharmaceuticals (See Appendix 2).

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The open forest size measures how attractive it is to move to other nearby products (a combination of distance and sophistication). Figure 22 shows the open forest size which has been growing since the 1990s, suggesting a better position than other Central American countries.

[44] See Benavente (2005).

Productive transformation implies a tradeoff between choosing products that are relative close but with a lower contribution to the "open forest" and goods that are of strategic value (because they expand the open forest size) but that are very far and costly to reach. This tradeoff is captured in Figure 23. This figure shows the distance and the strategic value, measured by the log of the marginal contribution to open forest if Panama were able to achieve comparative advantage in that good.[45]

In the case of Panama, products are distant, at least when compared with the product space of countries such as Argentina, Brazil, Mexico, Colombia, and especially China and Malaysia. The products that are closer to the efficiency frontier (inside the rectangle) are mostly tropical agriculture, cereals, chemicals and some machinery (this is of interest because in general in LAC the closer products tend to be commodities).

Even if from a technological point of view moving to new goods seems relatively harder for Panama, history suggests the opposite in the case of services. Recent growth in tourism and construction has been encouraging. Panama is in the process of becoming an attractive destination for second homes, especially among retired Americans. If consolidated, this activity could provide more jobs than the previous three leading sectors. The choice of strategy has some challenges, due to the competition from other counties in the region, such as Costa Rica and the Dominican Republic.

What is really notorious about Panama is the lack of development of non-service sectors. Growth in agriculture and manufacturing has been particularly slow, except for bananas and, more recently, some tropical fruits. Protectionism is rampant, especially in agriculture (cereal, rice, sugar) and in some manufacturing sectors where there is domestic production, even if the average tariff fell to 7.3 percent in 2005 from 12.3 percent in 1996 after Panama's WTO accession (in 1998).

In a recent study, Yrarrázaval and Martínez (2006) measure levels of effective protection for a variety of agricultural products. Poultry has the highest protection (1,658 percent), followed by rice (373 percent), sugar (158 percent), potatoes and onions (104 percent and 143 percent, respectively). Protection is also high for milk and pork (41 and 52 percent, respectively). The study argues that rice production would not be profitable without protection, in part because the high cost of inputs (fertilizers and pesticides). In the case of corn production, costs in Panama are significantly higher than in the U.S. (up to three times higher in the case of the high-yield varieties). Trade liberalization in agriculture could stimulate crop conversion into exportable products, such as melons and watermelons (with an exports value of US$145 million, 8 times the value observed in 1995). Similar, if not more successful, examples are pineapples, plantain, and ñame. Although political opposition is stiff, trade liberalization could free the most fertile areas of the country from crops that are stagnant and uncompetitive. In addition, these reforms would reduce poverty rates, as a result of lower food prices. Finally, demand for unskilled labor would increase as a result of the substitution of traditional crops for more labor intensive alternatives.

[45] Smaller values in the horizontal axis indicate the product is closer to the current basket.

In sum, Panama was successful in identifying its leading sector and to develop other very complementary activities such as the CFZ in the late 1940s and the FBC in the early 1970s. Recently, the process has been reinforced with the expansion of tourism. There is considerable amount on new self discoveries which could be made in the contest of the three leading sectors of the economy. The expansion of the Canal is a case in point. But there are other possibilities, such as the financial sector where newer instruments and services could bring new momentum to this sector. The same can be said of the conversion of the CFZ into an export processing zone.

Perhaps the biggest opportunity for Panama in terms of new discoveries is associated with the reverted areas from the Canal Zone. In particular, Howard Air Force Base is being converted into the *Área Económica Especial Panamá-Pacífico, AEEPP*, a 2,000 hectares area located at the Pacific Ocean entrance of the Canal, very close to the Port of Balboa and the city of Panama. It has a 2691 m. airstrip, excellent utilities and communications, in addition to a residential area. The current orientation for the development of this area is inspired in the Special Economic Zones of Subic Bay in the Philipines and Penag in Indonesia, which are basically export processing zones with an emphasis in logistics (air and maritime transport and telecommunications). Law 41 of 2004 established an integrated fiscal, customs, migration and labor framework for this Area. Firms established will have a 40 year lease, will be exempt from income and VAT taxes, and will operate under a special labor regime.[46] Interestingly, experts consider that the key bottleneck is related to the skills of the labor force which do not accord entirely with the needs of the economic activities to the established within its premises.

Coordination failures: Labor regulation

The development of new business opportunities faces a major obstacle. As shown in Table10, firms' perceptions regarding labor legislation are a great concern. Panama's labor code is very complex: there are more than 100 different laws that regulate specific aspects of the labor market. In general, conditions for government employees are very generous, while regulations regarding employment in the Canal (PCA) and the CFZ are more flexible. In fact, according its organic law, the Panamanian labor code does not apply in the PCA. This means that 'there are excellent salaries, but without bonuses, thirteenth month, and right to strikes.' (See Ahumada, 2001).

The most notable aspects of the labor code are related to minimum wages, costs of dismissal, vacations (30 days plus an extra monthly salary). According to the World Bank (2000), the ratio of days paid to days worked is 1.66 in Panama, 1.26 in México, and 1.34 in Costa Rica. An important labor market reform was adopted in 1995 during the Pérez Balladares Administration (1994-1999). The reform, although incomplete, lowered dismissal costs and was effective in reducing unemployment rates which had been continuously increasing since 1971.

[46] For example, remunerations will be based exclusively according to the number of hours worked, without surcharges for work on Sundays and holidays. A reduction in operations will be considered an acceptable cause for dismissal.

The *Doing Business* report confirms that labor regulation is one the strongest obstacles for businesses in Panama. Also, according to the GCR, the difficulties in Panama to hire and dismiss workers, restrictions to hire foreign workers and the limited wage flexibility are much greater than in the average country in the region. Therefore, it is no surprise that according to the WDI indicators from the World Bank, Panama has the most rigid labor legislation in the region.

It is also worth looking at the comprehensive measures of labor regulation compiled by Botero et al. (2004). In particular, in a sample of 18 Latin American countries shown in Table 10, Panama is the second worst performer in several dimensions (in parenthesis the worst performer): Dismissal procedures (Mexico), employment laws index (Venezuela), old age, disability and death benefits (Mexico), and social security laws index (Colombia). It is the third worst performer in collective disputes and in sickness and health benefits. Interestingly, Panama is the country (in the group) with lowest labor union power.

Minimum wages play a key role in our diagnostics. Since 1993, minimum wages have increased steadily (the ratio of average wages to minimum wages fell from 3.3 in 1993 to 2.4 in 2004) causing a reduction in employment among the young (15-24 years) and an increase in informality. The public sector pays extremely high wages for a given skill level (see Galiani, 2006). In fact, the public sector wage premium can be as high as 80 percent for low skilled workers. The fact that the wage premium is decreasing in skill level suggests that the labor market is highly distorted in the traditional and unskilled labor intensive sectors of the economy. In this segment, the lucky ones are those that find a job within the public sector. The unlucky are employed in low productivity sectors, such as agriculture and manufacturing.

All this evidence seems to point in the same direction. Panama's labor regulation is a likely candidate in order to understand low growth in the traditional sectors, which are more adversely affected by high minimum wages and the regulations regarding dismissal procedures. The modern sectors are less affected by these factors. Also, it is common to tailor labor regulations to the specific needs of the various modern sectors. For example, labor legislation in the PCA and Howard Special Economic Zone is much more flexible. In other words, what has been politically viable is to change the labor legislation in specific areas and sectors. This may be a second-best strategy, which will not solve the problems oh high nonwage labor costs in the traditional sectors. Unsurprisingly, growth in output and employment in these sectors has been modest.

Labor legislation has been difficult to reform mainly because the labor unions are politically strong (traditionally supporting the ruling PRD party). Much of the emphasis is now placed on training programs, rater than labor reform.

8. Growth Diagnostics: Financing

As mentioned before, current account deficits have been relatively common in Panama. The natural implication is that domestic investment has been partially funded with external

savings and a sizeable external debt has been built up. In fact, external debt rose from around 20 percent of GDP in the early 1970s to 130 percent of GDP in 1989. Although it has fallen sin the 1990s (to 66 percent in 2005) it is still high for Latin American standards. This is indicative of the fact that Panama has had ample access to foreign capital.

In other words, availability of external financing has not been an issue. Moreover, as we mentioned, spreads on sovereign debt have been low, especially when fiscal and current account conditions are considered. Low spreads have, in turn, translated into low domestic interest rates.

Lack of problems with access to credit is further documented with data from the WBES surveys. In the region, on average 65 percent of the firms consider that access to credit is a moderate or serious obstacle for their business, while only 36 percent of the firms in Panama consider that this is the case (the lowest figure among all the countries in the survey). Similarly, all other aspects related to credit, such as paperwork, collateral, and corruption in the financial sector) rank better in Panama than in the average Latin American country (see Figure 25). However, care should be exercised when interpreting these results as they are based on surveys that do not consult the opinion of the more traditional and backward sectors. Given more informal evidence, it is likely that these sectors are severely constrained in terms of access to credit.

In sum, Panama's modern sector growth is not constrained by financial development. On the contrary, access to long-term low-cost credit is one of its strongest advantages. This, of course, does not imply that credit conditions could not improve. This would be the case, for example, if the government exercised greater fiscal discipline.

9. Conclusions

Although higher than in the average Latin American country, Panama's economic growth underperforms relative to other service-based economies, such as Hong Kong and Singapore. The evidence presented in this paper, as well as in the rest of the existing literature, is consistent with the hypothesis that Panama suffers from serious productivity problems. In other words, given its level of human and physical capital, output should be considerably higher.

Panama has a textbook dual economy. Productivity and salaries are high in the modern sectors that demand skilled workers. Surplus labor is employed in the traditional sectors, such as agriculture and small-scale manufacturing, where productivity is particularly low. Naturally, this results in considerable wage gap between the modern economy (which includes the public sector) and the rest of the economy. Not surprisingly, Panama has one of the highest levels of income and asset (especially human capital) inequality in the continent.

In this context, it is appropriate to apply the GDM separately to the modern and traditional sectors. Our analysis suggests that growth in the modern sectors is not particularly

constrained. There are some potential restrictions in areas such as infrastructure (mostly in electricity) and human capital, but neither of these seems to be currently binding.

The situation is quite different in the traditional sectors. After analyzing the many dimensions of the GDM, we identified the following constraints, which are ranked according to their relevance.

a. There is a clear market failure as production in the traditional economy is highly protected through the use of various measures, including tariffs. Entrepreneurs in these sectors do not have the incentive to search for new activities. The explanation is that surplus labor lowers salaries, while high tariffs keeps prices (and profits) high. Protectionism is embedded in Panama's political system, where these sectors exert considerable influence through various means, in order to preserve the status quo. Not surprisingly, corruption is a top concern according to many business surveys. There is no doubt that land and labor could be used more productively in other sectors, such as tropical fruits and manufacturing.
b. Labor legislation is a major impediment for the development of new business opportunities. Dismissal and overtime costs, minimum wage laws, and the premium paid in the public sector to unskilled workers, inhibit potentially successful entrepreneurs from exploring new ventures.
c. Infrastructure, especially in the non-modern sectors, is also a problem. Electricity and transport costs (within the country) restrict business growth. This is particularly true for sectors such as modern agriculture and tourism.
d. There does not seem to be significant problems in terms of appropriability and access to credit.

To overcome these problems Panama is following the example of some Asian economies. Rather than introducing wide-ranging reforms, which are politically unfeasible, the government has created special economic zones that operate under separate tax, labor, migration and tariff regimes. The Howard Special Economic Zone is a case in point. It is likely that under current regulatory conditions, these special economic zones will succeed to attract new ventures, especially in export processing, logistics and other services. The Panama-U.S. FTA will certainly help in this direction. A similar solution is related to the tax incentives given to foreigners who want to settle in Panama (or own second homes). Real state, together with tourism, could be the new engines of growth in Panama, with greater spillovers than the previous leading sectors. In this sense, the outlook is positive, in spite of the lack of growth in agriculture and manufacturing.

However, this may not be the first-best solution to Panama's growth problems. The Special Economic Zones are small and can only accommodate a few activities. Rather than following the Chinese mainland model, the entire country should become a special economic zone in the same spirit of Hong Kong. This would require a comprehensive reduction of protectionism and labor rigidities, with a clear gain in terms of balanced growth and equity. This would be particularly important for the agricultural sector, where the negotiated FTA with U.S. will phase-out protection only in 20 years.

Appendix 1
Sources of Growth Decomposition

Our methodology closely follows Calderón et al. (2002). The starting point is a Cobb-Douglas production function of the form:

$$Y_t = A_t K_t^{\alpha} \left(H_t L_t\right)^{1-\alpha}$$

Where Y_t is GDP in year *t*, K_t is the stock of physical capital, L_t is employment, H_t is human capital, and A_t is TFP. After taking logs and differencing, the function can be expressed in growth terms as:

$$\dot{Y} = \dot{A} + \alpha\dot{K} + \left(1-\alpha\right)\left(\dot{L} + \dot{H}\right)$$

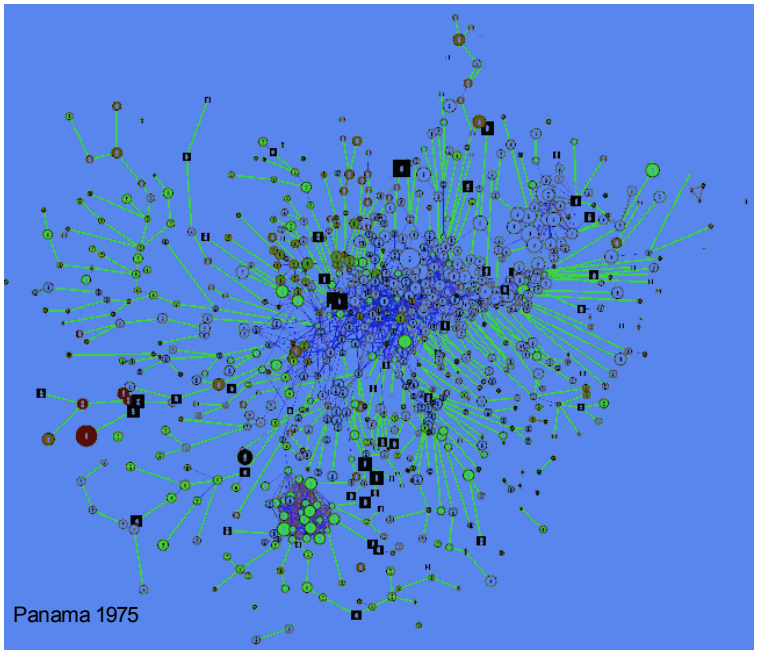
Where $\dot{X}$ is the growth rate of variable X and α is the share of capital in total income (we use a value equal to 0.35). Human capital is defined as a weighted average of the share of the population with a j level of schooling (E_j):

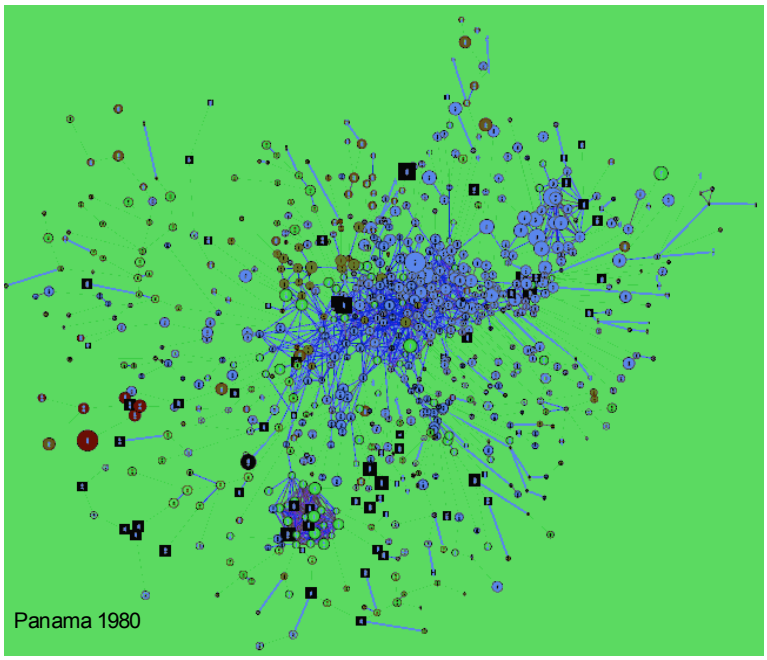
$$H_t = \sum_j w_j E_j \ ,$$

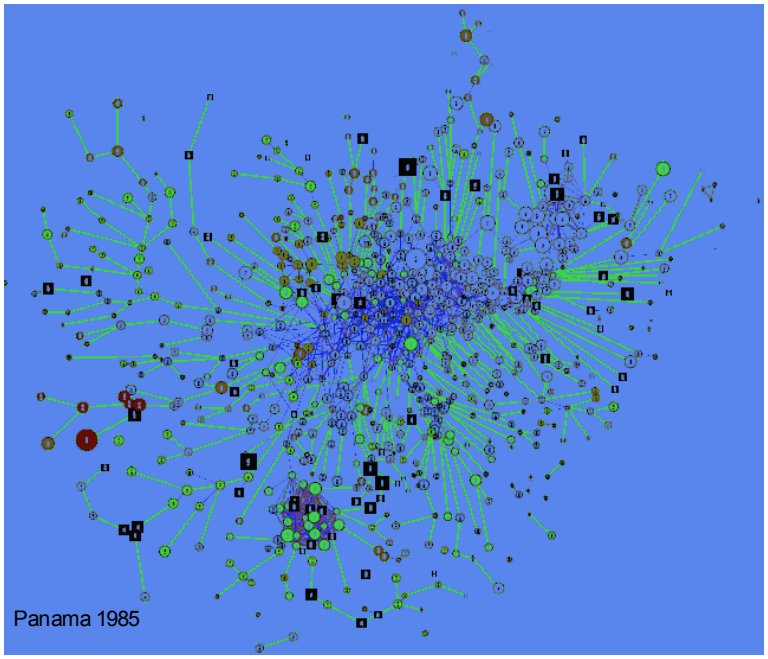
where the weights are given by the social returns to education for each educational group.

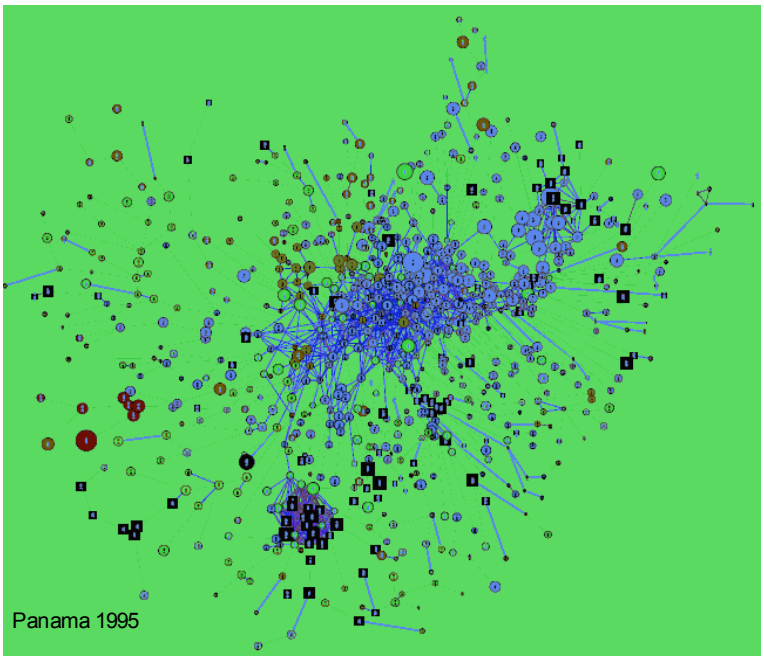
Appendix 2

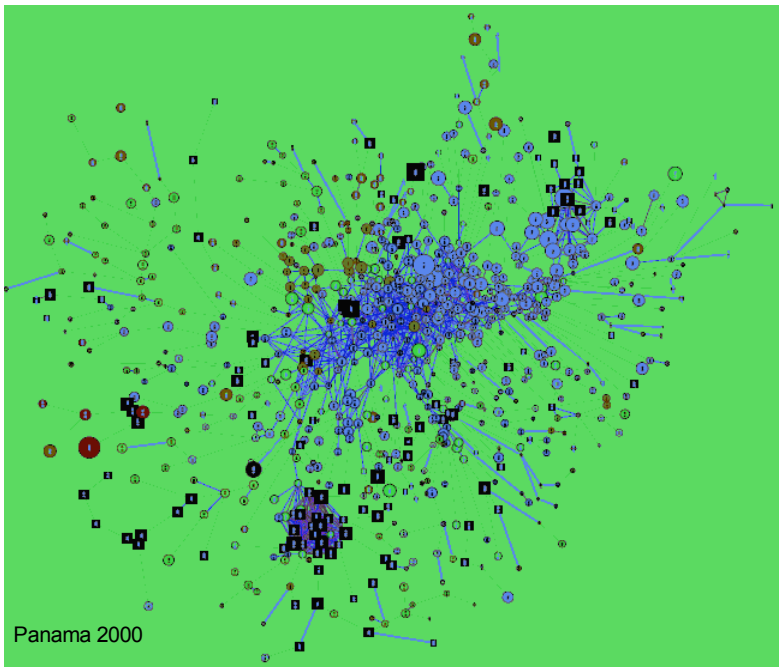
Panama's Location in the Product Space, 1975-2000






Panama 1985


Panama 1995



Note: A black square indicates products in which Panama has achieved comparative advantage.
Source: Hausmann and Klinger's database and calculations.

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Table 1. GDP growth and investment rates: Various countries

Country	Period	GDP growth		Per capita GDP growth		Investment rates (% GDP)	
		Average	Standard deviation	Average	Standard deviation	Average	Standard deviation
Panama	**1965-2004**	4.22	4.38	1.74	4.18	16.93	4.51
Puerto Rico	**1965-2001**	8.19	4.02	5.87	3.92	35,3***	8,47***
Hong Kong, China	**1965-2004**	6.60	4.62	4.69	4.43	26.78	4.80
Singapur	**1965-2004**	4.61	2.91	3.35	2.89	19.93	6.93
LAC	**1965-2004**	3.51	2.60	1.42	2.39	21.32	1.93

***** information is avalible until 1991**

Source: WDI 2006, Eclac, and authors' calculations.

Table 2. OLS Regressions

Dependent variable growth of GDP per capita 1960-2000						
Log GDP per capita (1960)	-0.001***	-0,013***	-0,011***	-0,01***	-0,013***	-0,01***
	(0,003)	(0,003)	(0,003)	(0,003)	(0,003)	(0,003)
Log years of schooling (1960)	0,005***	0,007***	0,006**	0,005**	0,007***	0,006**
	(0,002)	(0,0023)	(0,002)	(0,002)	(0,002)	(0,002)
% pop. living in temperate zone (1995)	0,017***	0,013***	0,017***	0,017***	0,013***	0,017***
	(0,005)	(0,004)	(0,004)	(0,005)	(0,004)	(0,005)
Executive Constraints (1960-2000)	0,002**		0,002**	0,002**		
	(0,0008)		(0,0008)	(0,0008)		
Expropriation risk (1982-1997)		0,004***			0,003***	
		(0,001)			(0,001)	
Autocracy (1960-1990)			-0,006*			-0,005*
			(0,003)			(0,003)
Dummy Colombia	0.001	0.002	0.0001			
	(0,002)	(0,002)	(0,002)			
Dummy Ecuador	-0,003	-0.002	-0,0008			
	(0,002)	(0,002)	(0,003)			
Dummy Panama	0,008**	0,009***	0,009**			
	(0,003)	(0,002)	(0,003)			
Dummy Venezuela	-0,008	-0,003	-0,01**			
	(0,005)	(0,004)	(0,05)			
Dummy Gran Colombia				-0.00018	0.0012	-0,0003
				(0,004)	(0,003)	(0,004)
R^2	0.45	0.57	0.45	0.44	0.56	
Observations	71	69	71	71	69	

***: Significant at 1%

**: Significant at 5%

*: Significant at 10%

Table 3. 2SLS Growth Regressions. Dependent variable is log GDP per capita in 2000

Panel A: Second-stage regressions°			
	(1)	(2)	(3)
Years of Schooling (1960-2000)	0,62***	0,46***	0.57
	(0,19)	(0,13)	(0,37)
Executive Constraints (1960-2000)	-0.25		
	(0,19)		
Expropriation risk (1982-1997)		-0,33	
		(0,30)	
Autocracy (1960-1990)			0.85
			(1,69)
Share of Population living in temperate zone (1995)	-0,92	-0,23	-0,70
	(0,85)	(0,55)	(1,36)
R^2	0.6	0.64	0.57
Observations	47	44	47

Panel B: First-stage regressions

	Dependent Variables					
	Executive	Years of School	Expropiation	Years of Schooling	Autocracy	Years of Schooling
Share of Population living in temperate zone (1995)	-0,96	1,98**	1,35**	1,90**	0.22	1,98**
	(0,78)	(0,803)	(0,65)	(0,8)	(0,26)	(0,803)
Log Settler Mortality	-0,67***	-0,90***	-0,29**	-0,90***	0,20***	-0,90***
	(0,18)	(0,19)	(0,15)	(0,19)	(0,064)	(0,19)
Log Population Density in 1500	-0,36***	-0,52***	-0,01***	-0,55***	0,084*	-0,52***
	(0,12)	(0,129)	(0,11)	(0,14)	(0,043)	(0,12)
French Legal Origin	-1,79***	-0.79	-0,90**	-0,81**	0,25*	-0,79*
	(0,39)	(0,40)	(0,33)	(0,42)	(0,13)	(0,40)
Dummy Colombia	2.15	0.06	1.06	0.05	-0,79*	0.06
	(1,20)	(1,23)	(0,99)	(1,27)	(0,41)	(1,23)
Dummy Ecuador	1.03	1.40	0.55	1.41	0.1	1.4
	(1,19)	(1,22)	(0,99)	(1,27)	(0,41)	(1,22)
Dummy Panama	0.34	3,08**	0.067	3,08**	0.06	3,08**
	(1,18)	(1,21)	(0,98)	(1,26)	(0,408)	(1,21)
Dummy Venezuela	1.59	0.07	0.76	0.033	-0,74*	0.066
	(1,21)	(1,25)	(1,00)	(1,29)	(0,41)	(1,25)
R^2	0.66	0.82	0.57	0.81	0.52	0.82
Observations	47	47	44	44	47	47

***: Significant at 1%

**: Significant at 5%

*: Significant at 10%

°: Second srage estimations include the country dummies. The coefficients are not significant.

Table 4. Panama: Sources of Growth Decomposition

Table 4. Panama: Sources of Growth Decomposition

		Annual growth rates			
Period	**Yt**	**Kt**	**Lt**	**Ht**	**At**
1964-1970	7.10%	11.25%	3.52%	0.84%	0.33%
1971-1980	4.05%	7.91%	2.21%	2.41%	-1.72%
1981-1990	1.36%	1.28%	2.40%	1.72%	-1.77%
1991-2000	4.94%	6.19%	3.21%	0.50%	0.36%
2001-2005	4.07%	2.65%	4.14%	0.63%	0.05%
1964-2005	**4.13%**	**5.85%**	**2.94%**	**1.32%**	**-0.68%**
		Contribution to Output Growth			
Period	**Yt**	**Kt**	**Lt**	**Ht**	**At**
1964-1970	7.10%	3.94%	2.29%	0.55%	0.33%
1971-1980	4.05%	2.77%	1.44%	1.57%	-1.72%
1981-1990	1.36%	0.45%	1.56%	1.12%	-1.77%
1991-2000	4.94%	2.17%	2.09%	0.32%	0.36%
2001-2005	4.07%	0.93%	2.69%	0.41%	0.05%
1964-2005	**4.13%**	**2.05%**	**1.91%**	**0.86%**	**-0.68%**

Source: Authors' calculations.

Table 5. Managers' opinions about business environment

Obstacles associated with (b)		LATINAMERICAN COUNTRIES (a)		PANAMA	
		Minimum obstacle	Severe obstacle	Minimum obstacle	Severe obstacle
Finance	Access	74.8%	25.2%	90.6%	9.4%
Infraestructure	Electricity	65.0%	35.0%	55.2%	44.8%
	Telecomunications	16.0%	84.0%	35.2%	64.8%
Labor	Regulation	80.1%	19.9%	90.7%	9.3%
	Quality	71.1%	28.9%	85.7%	14.3%
Business-Government relationships	Confidence in court system (c)	60.0%	40.0%	65.3%	34.7%
	Corruption	45.9%	54.1%	65.9%	34.1%
Competition	Informal competition	51.4%	48.6%	81.3%	18.7%
Others	Tax rates	59.9%	40.1%	70.5%	29.5%
	Crime	76.5%	23.5%	75.6%	24.4%
	Trade regulation	87.9%	12.1%	91.4%	8.6%
	Transportation of goods and supplies	83.7%	16.3%	88.5%	11.5%

(a) Includes Argentina, Bolivia, Colombia, Mexico, Peru, Paraguay and Uruguay

(b) In the World Bank's Enterprise Survey classification, a Minimum Obstacle refers to "no obstacle", "minor obstacle" and "moderate obstacle", whereas Severe Obstacle refers to "major obstacle" and "very severe obstacle" categories.

(c) Based on the question: you Strongly disagree, Tend to disagree, Tend to agree, or Strongly agree with the sentence "The court system is fair, impartial and uncorrupted" (Severe Obstacle when tend to or strongly disagree and Minimum obstacle otherwise)

Source: World Bank's Enterprise Survey and Authors' calculations.

Table 6. Probit estimations (marginal effects). Latin American countries[a,b]

Dependent variable: Obstacles associated with (c)		Control variables														Number of obs	Pseudo R-squared
		Sector				Size				Firm Features				Ownership concentration			
		Manufacturing		Services		Medium		Large		Export		Age		Management		Dummy Panama	
(0 = Minimum obstacle, 1 = Severe Obstacle)		(yes=1, 0 otherwise)		(yes=1, 0 otherwise)		(between 20 and 99 employees)		(more than 100 employees)		(yes=1, 0 otherwise)		(years)		(manager's experience, years)		(firm's percentage)		(yes=1, 0 otherwise)			
Finance	Access	0.0188638		0.0002385		-0.0374084	***	-0.0641953	***	0.0363291	***	-0.0003208		0.0019184	***	-0.0004614	**	-0.1554408	***	6123	0.0198
Infraestructure	Electricity	0.0787875	***	-0.0073978		0.0232233	*	0.0287098		-0.0114979		-0.0009898	***	0.0008366		-0.0008638	***	0.1372001	***	6215	0.0109
	Telecomunication	n.d.		n.d.		0.0092051		-0.0167935		-0.0184136		-0.0023524	***	0.0006514		-0.0005304		-0.0675076	**	1360	0.0026
Labor	Regulation	-0.0253945	*	-0.0004472		-0.0016223		-0.039723	**	0.0920201	***	0.0009751	***	0.0017762	***	-0.0003186	*	-0.112216	***	6182	0.0281
	Quality	-0.0780577	***	0.0486833	**	0.0266769	**	-0.019945		0.1090037	***	0.0003101		0.001037	**	-0.0009679	***	-0.1536013	***	6162	0.0316
Business-Government relationships	Confidence in court system (d)	0.0304952	*	-0.0208972		-0.0139937		-0.0878087	***	0.0381227	**	-0.0010609	***	0.0021614	***	0.0000123		-0.0311167		5894	0.0078
	Corruption	0.0174208		0.0372852	*	-0.02271		-0.0631019	***	0.0347263	**	-0.0001458		0.0026409	***	-0.0007478	***	-0.1923421	***	6102	0.0148
Competition	Informal competition	0.0799899	***	0.0565234	**	-0.0068326		-0.0148619		-0.0554993	***	0.0008906	**	0.0025664	***	-0.0001717		-0.2949605	***	6075	0.0304
Others	Tax rates	0.0318638	*	0.0869999	***	-0.0247069	*	-0.0486152	**	0.059823	***	0.0011126	***	0.0019297	***	-0.0010578	***	-0.1036103	***	6179	0.0143
	Crime	-0.0445292	***	0.0052422		-0.0161651		-0.0415096	**	-0.0411417	***	0.000176		-0.0001016		-0.0001621		-0.0026726		6191	0.0061
	Trade Regulation	-0.0277237	**	0.0327291	**	-0.0145721		-0.0204506		0.0841202	***	0.0005069	**	0.0003908		-0.0000172		-0.0436355	***		
	Transportation of goods and supplies	-0.0800415	***	-0.0265418	*	0.0275731	***	0.0250727	*	-0.0068379		0.000337		-0.0007873	*	-0.0002834	*	-0.0594331	***	6130	0.0142

(a) * Significant at 10%, ** 5% and *** 1%, respectively.
(b) Includes Argentina, Bolivia, Colombia, Mexico, Panama, Peru, Paraguay and Uruguay

(c) In the World Bank's Enterprise Survey classification, a Minimum Obstacle (0 for the probit estimation) refers to "no obstacle", "minor obstacle" and "moderate obstacle" categories, whereas Severe Obstacle (1) refers to "major obstacle" and "very severe obstacle" categories.

(d) Based on question: you Strongly disagree, Tend to disagree, Tend to agree, or Strongly agree with the sentence "The court system is fair, impartial and uncorrupted" (1 when tend to or strongly disagree and 0 otherwise)
Source: World Bank's Enterprise Survey and Authors' calculations.

Table 7. Returns to Education (Mincer Coefficients) – Urban employees

Country	Año	Men			Women		
		Primary	Secondary	University	Primary	Secondary	University
Argentina	2005	0.119	0.375	0.623	0.006	0.338	0.609
Bolivia	2003-04	0.025	0.203	1.155	0.148	0.160	1.188
Brazil	2004	0.297	0.364	1.035	0.238	0.370	1.020
Chile	2003	0.132	0.349	0.913	0.120	0.328	0.836
Colombia	2004	0.265	0.309	1.036	0.176	0.411	0.962
Costa Rica	2004	0.145	0.337	1.042	0.146	0.444	0.988
Ecuador	2003	0.197	0.324	0.628	0.190	0.514	0.559
El Salvador	2004	0.086	0.254	0.838	0.161	0.332	0.873
Guatemala	2004	0.287	0.514	0.607	0.234	0.829	0.330
Haiti	2001	-0.029	1.223	0.155	0.657	0.576	0.446
Honduras	2005	0.290	0.696	0.835	0.278	0.698	0.822
Jamaica	2002	0.317	-0.064	0.784	-0.249	0.155	0.947
Mexico	2002	0.168	0.559	0.691	0.133	0.877	0.464
Nicaragua	2001	0.127	0.485	0.921	0.218	0.438	0.640
Panama	**2004**	**0.055**	**0.376**	**0.933**	**0.169**	**0.606**	**0.906**
Paraguay	2004	0.278	0.321	0.681	0.164	0.493	0.572
Peru	2003	0.149	0.179	0.656	0.285	0.058	0.699
Dominican R	2005	0.053	0.269	0.715	0.139	0.304	0.744
Uruguay	2005	0.174	0.502	0.681	0.013	0.504	0.669
Venezuela	2004	0.205	0.145	0.525	0.214	0.262	0.512

Source: SEDLAC.

Table 8. Inequality in Education in Panama

	Inequality by quintiles				
	Quintile 1	**Quintile 2**	**Quintile 3**	**Quintile 4**	**Quintile 5**
Illiteracy rate by income quintiles and population aged 9 and over, 1997					
Men	19	9	5	3	1
Women	29	10	6	3	1
Average years of schooling by income quintiles, 1997	4.2	6.3	7.8	9.3	11.3

	Inequality by geographical area				
	Non poor population	**Poor population**			
		Urban	**Rural**	**Total**	**Indigenous**
Illiteracy rate of population living in poverty by geographical area	3	6	15	27	38
Net primary enrollment rate, 2000	95	91	91		83
Net secondary enrollment rate, 1999	79			19	2
Net tertiary enrollment rate, 1999	31	7	2	3	0

Source: Preal y Cospae (2002).

Table 9. Panama: Tax Effort in a Regional Context, 1998–2003 1/
(Tax revenue in percent of GDP)

	1998	1999	2000	2001	2002	2003
Argentina 2/	21.1	21.2	21.6	21	20	23.3
Barbados	...	30.5	30.2	31.2	31.3	30.9
Bolivia 2/	19.7	18.6	18.7	18.1	18	18.3
Brazil 2/	29.8	32.2	33	33.9	35.8	36.1
Chile	16.3	15.6	16.4	17.2	17.6	...
Colombia	10.5	10	11.2	13.2	13.4	14.1
Costa Rica 2/	...	11.9	12.4	13.3	13.2	13.1
Dominican Republic	15	14.7	14.8	15.8	16	...
Ecuador	8.5	8.8	10.9	11	11.1	...
El Salvador	...	10.2	10.2	10.5	11.1	11.6
Guatemala	8.7	9.3	9.4	9.7	10.6	10.3
Haiti	8.3	8.8	8.1	7.3	8	...
Honduras	17	17.7	16.6	16.2	15.9	...
Jamaica	23	24.5	25.7	26.6	24.4	26
Nicaragua	14.9	14.7	13.8	13	13.6	15.1
Panama	**10.1**	**10.6**	**9.6**	**8.8**	**8.6**	**8.8**
Paraguay	...	11.1	11.1	11.3	9.1	9.8
Peru	13.8	12.3	12	12.9	11.9	13
Suriname	23.8	19.8	23.1	33.5	24.5	27.8
Trinidad & Tobago	13.5	12.9	14.5	13.7	15.7	...
Uruguay	18.3	18.1	17.9	18.6	18.9	...
Venezuela	12.7	12.1	12.5	11	...	...
Unweighted average	15.8	15.7	16.1	16.7	16.6	...

1/ Central government unless otherwise noted.

2/ General government (central and local governments).

Source: IMF (2006).

Table 10. Regulation of labor from Botero et *al*. (2004)

Cost of increasing hours worked		Cost of firing workers		Dismissal procedures		Employment laws index	
Dominican Rep.	1.0000	Chile	0.8120	Mexico	0.8571	Venezuela	0.6509
Venezuela	1.0000	Dominican Rep.	0.7458	**Panama**	**0.8571**	**Panama**	**0.6246**
Ecuador	0.2574	Venezuela	0.6663	Peru	0.8571	Dominican Rep.	0.5972
Bolivia	0.2206	**Panama**	**0.6320**	Brazil	0.5714	Mexico	0.5943
Brazil	0.1529	Brazil	0.6087	Ecuador	0.5714	Brazil	0.5676
Mexico	0.1258	Peru	0.6049	Argentina	0.2857	Chile	0.4735
Uruguay	0.1112	Colombia	0.5488	Chile	0.2857	Peru	0.4630
Chile	0.0775	Bolivia	0.5207	Colombia	0.2857	Ecuador	0.3966
Argentina	0.0676	Mexico	0.4255	Dominican Rep.	0.1429	Bolivia	0.3728
Peru	0.0461	Ecuador	0.3203	Bolivia	0.0000	Colombia	0.3442
Colombia	0.0424	Argentina	0.2734	Jamaica	0.0000	Argentina	0.3442
Panama	**0.0406**	Uruguay	0.2438	Uruguay	0.0000	Uruguay	0.2762
Jamaica	0.0000	Jamaica	0.1512	Venezuela	0.0000	Jamaica	0.1628

Labor union power		Collective disputes		Collective relations laws index	
Peru	0.7143	Ecuador	0.7500	Peru	0.7113
Argentina	0.5714	Peru	0.7083	Ecuador	0.6369
Mexico	0.5714	**Panama**	**0.6250**	Argentina	0.5774
Venezuela	0.5714	Argentina	0.5833	Mexico	0.5774
Ecuador	0.5238	Mexico	0.5833	Venezuela	0.5357
Chile	0.4286	Bolivia	0.5417	Colombia	0.4851
Colombia	0.4286	Colombia	0.5417	Bolivia	0.4613
Bolivia	0.3810	Venezuela	0.5000	**Panama**	**0.4554**
Brazil	0.3810	Brazil	0.3750	Chile	0.3810
Dominican Rep.	0.3343	Uruguay	0.3750	Brazil	0.3780
Uruguay	0.3333	Chile	0.3333	Uruguay	0.3542
Jamaica	0.2857	Dominican Rep.	0.2088	Dominican Rep.	0.2715
Panama	**0.2857**	Jamaica	0.1667	Jamaica	0.2262

Old age, disability and death benefits		Sickness and health benefits		Unemployment benefits		Social security laws index	
Mexico	0.7223	Argentina	0.9364	Colombia	0.9972	Colombia	0.8131
Panama	**0.6983**	Bolivia	0.8780	Argentina	0.8372	**Panama**	**0.7431**
Colombia	0.6547	**Panama**	**0.8644**	Uruguay	0.7842	Venezuela	0.7299
Venezuela	0.6542	Venezuela	0.8401	Chile	0.7818	Argentina	0.7154
Ecuador	0.6357	Dominican Rep.	0.8370	Venezuela	0.6953	Chile	0.6887
Dominican Rep.	0.6258	Peru	0.8185	**Panama**	**0.6667**	Uruguay	0.6778
Jamaica	0.5030	Mexico	0.7965	Brazil	0.5634	Ecuador	0.6542
Uruguay	0.5021	Chile	0.7892	Ecuador	0.5383	Brazil	0.5471
Brazil	0.5001	Ecuador	0.7887	Bolivia	0.0000	Mexico	0.5063
Chile	0.4951	Colombia	0.7873	Dominican Rep.	0.0000	Dominican Rep.	0.4876
Peru	0.4316	Uruguay	0.7470	Jamaica	0.0000	Peru	0.4167
Argentina	0.3725	Brazil	0.5777	Mexico	0.0000	Bolivia	0.3702
Bolivia	0.2326	Jamaica	0.0000	Peru	0.0000	Jamaica	0.1677

* See original paper for the specific definition of each index. Source: Botero *et al.* (2004).

Figure 1. Panama Canal: contribution to central government revenues

(Dividends, service fees and fees based on tonnage)

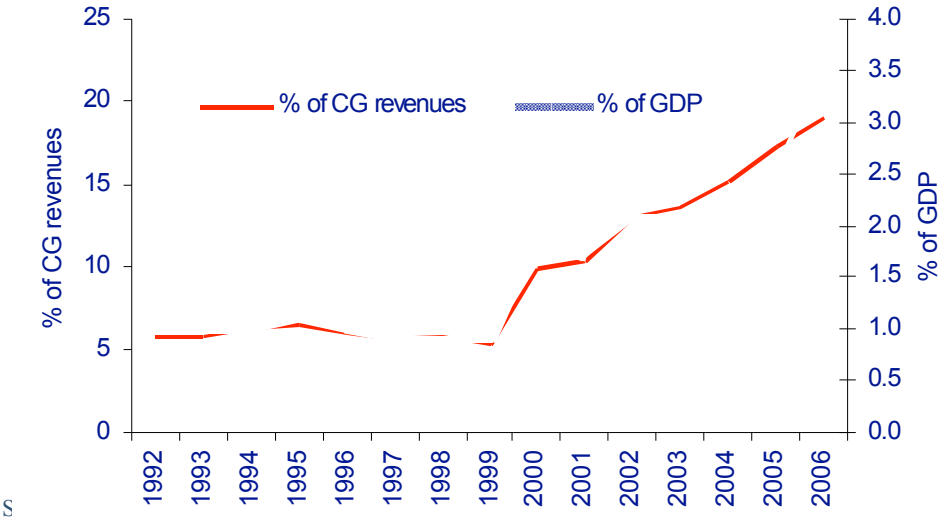

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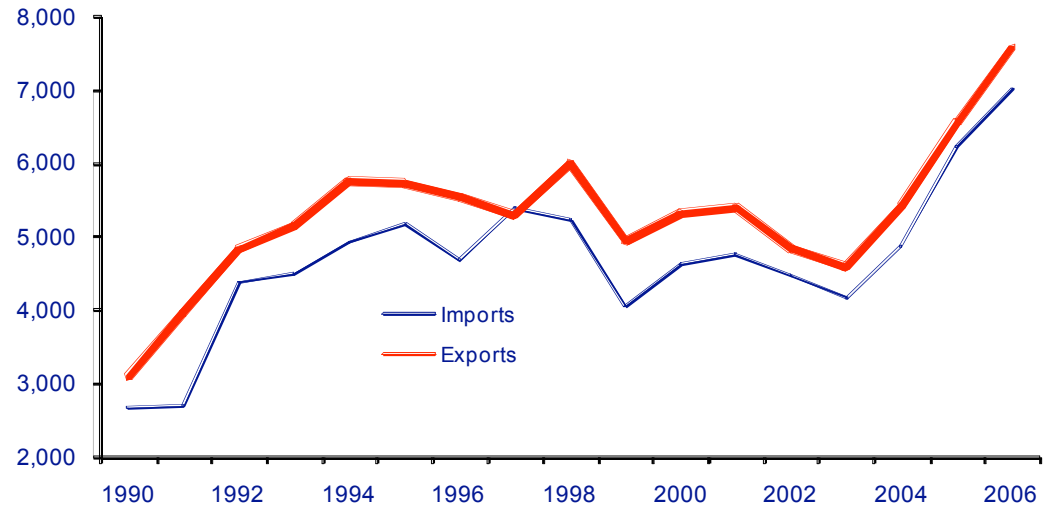
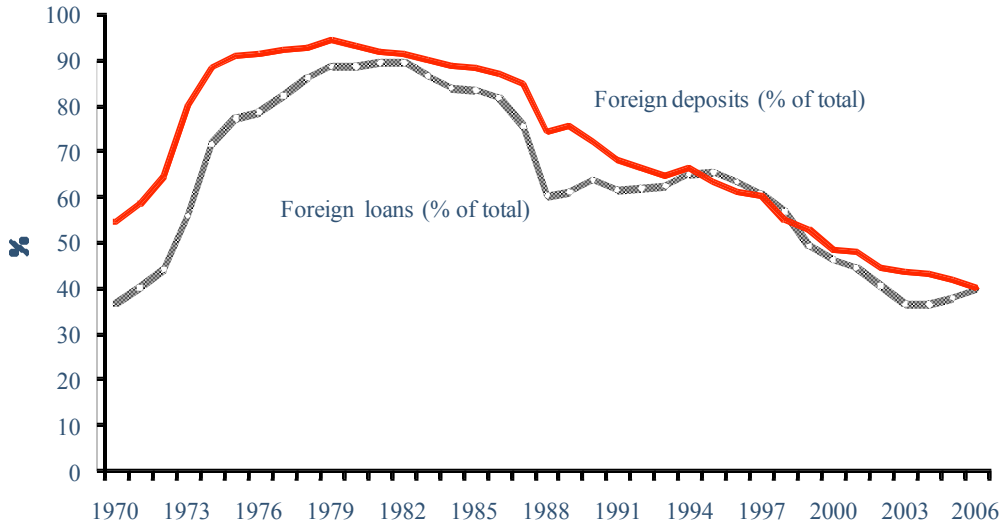
Figure 2. Panama: Imports and exports of the CFZ



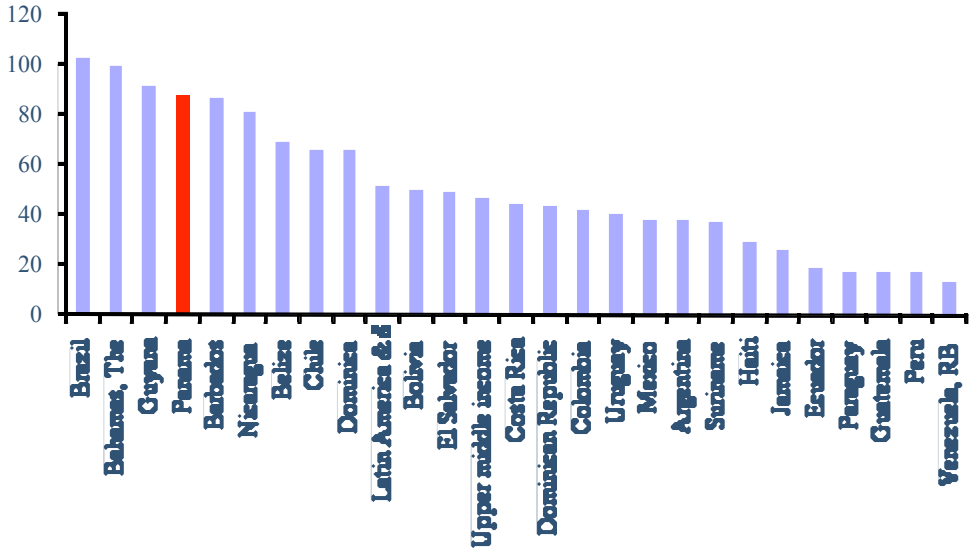
Source: ZLC

Figure 3. Panama: Foreign loans and deposits (percent of total)



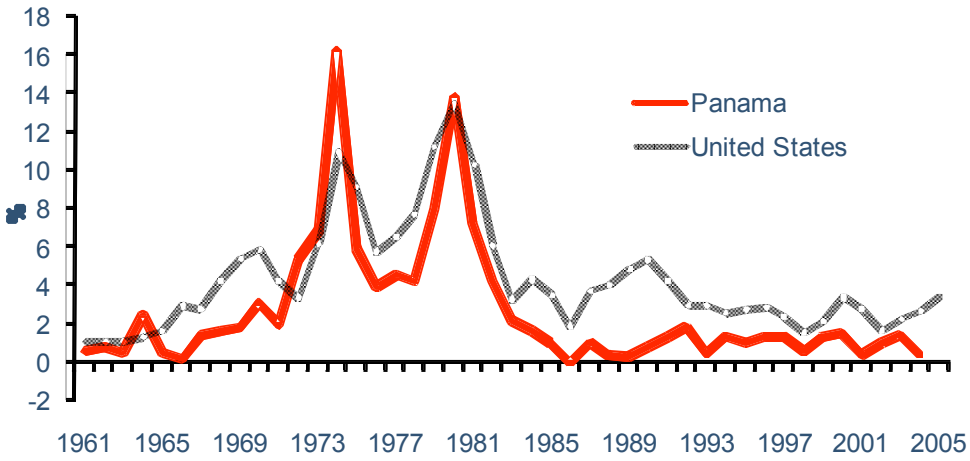
Source: Superiontendency of Banks, SBP.

Figure 4. Domestic credit as percent of GDP



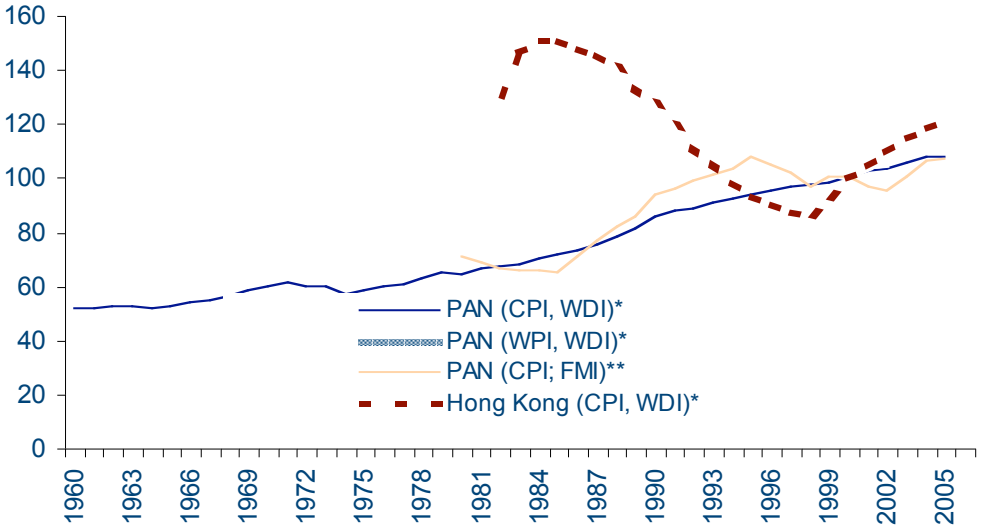
Source: WDI.

Figure 5. Inflation rate in Panama and the U.S.



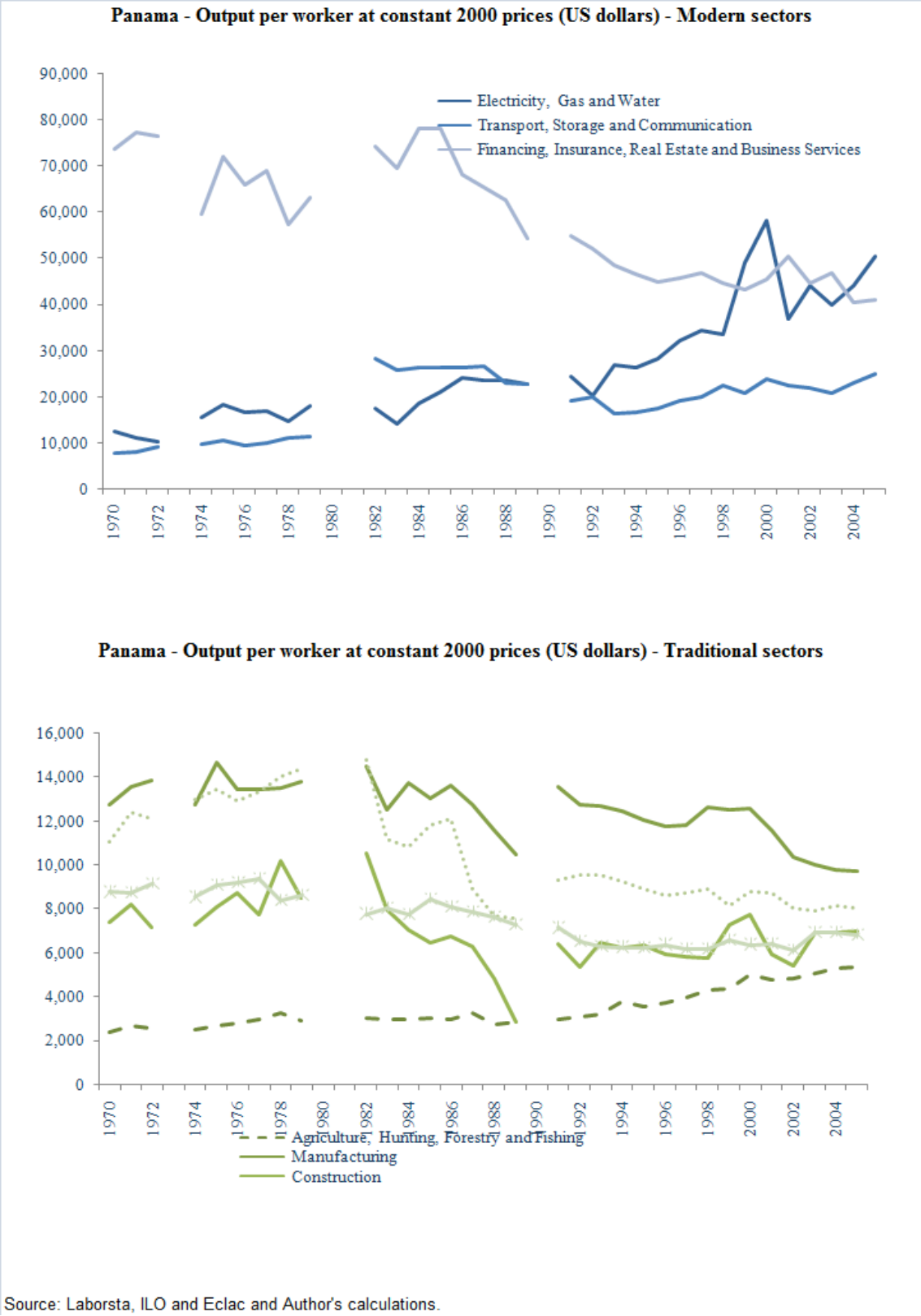
Source: WDI.

Figure 6. Panama – Hong-Kong: real exchange rates (bilateral and multilateral, 2000=100)



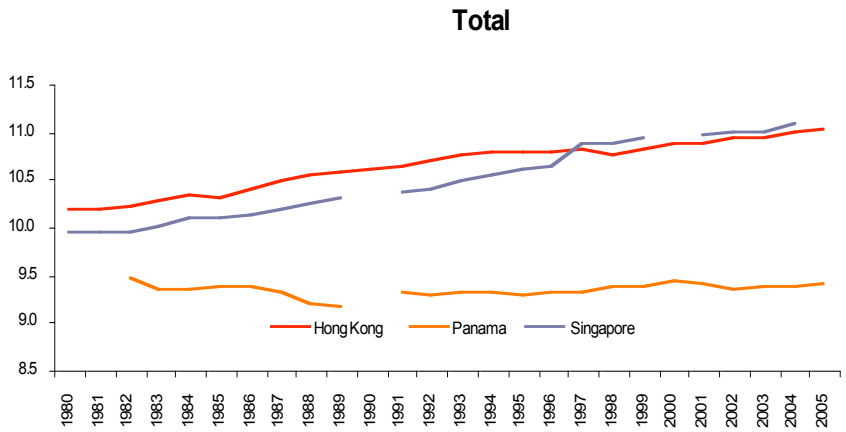
* Bilateral (US). ** Multilateral. Source: IMF

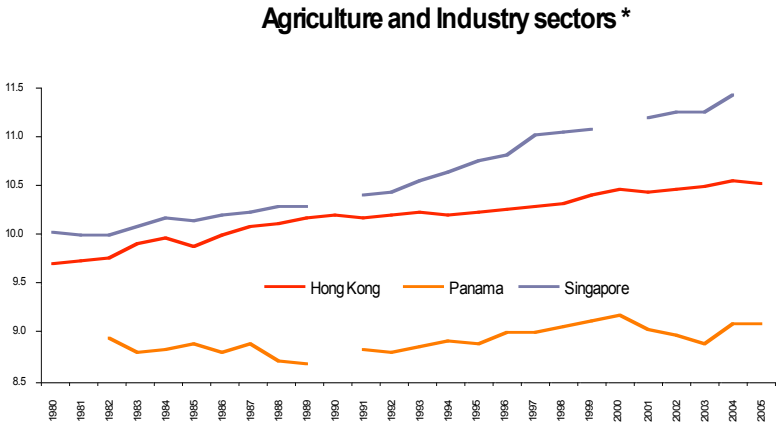
Figure 7. Labor productivities



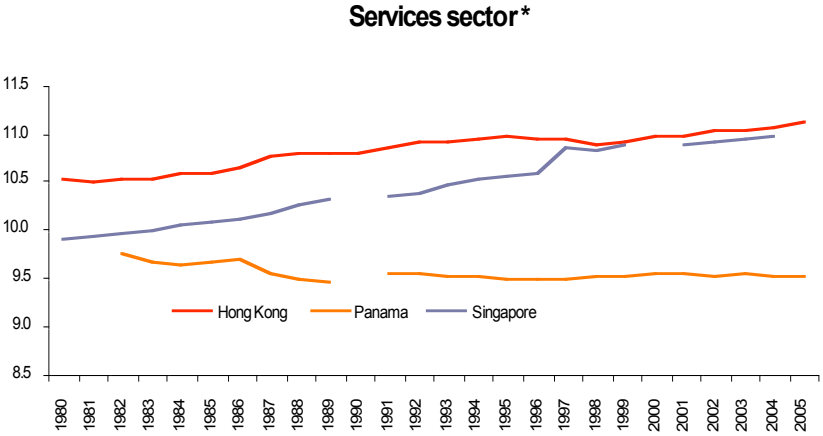
Source: Laborsta, ILO and Eclac and Author's calculations.

Figure 8. Labor productivities in Panama, Hong Kong and Singapore (Real GDP per worker, in logs; constant 2000 US$)





(*) Agriculture includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Industry comprises value added in mining, manufacturing, construction, electricity, water,
Source: WDI, ILO and Author's calculations.



(*) Services include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health
Source: WDI, ILO and Author's calculations.

Figure 9. Poverty and inequality: Panama and LAC

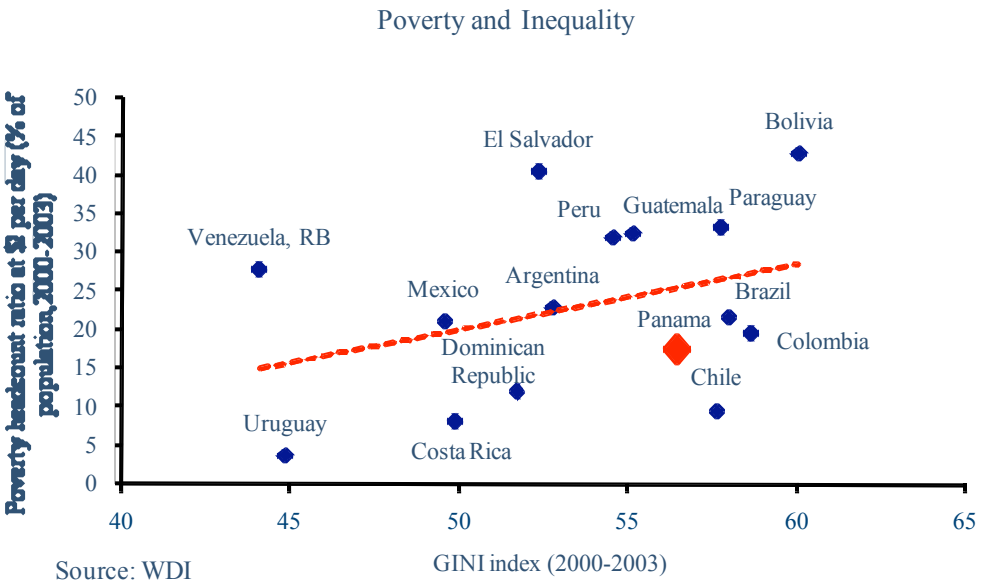
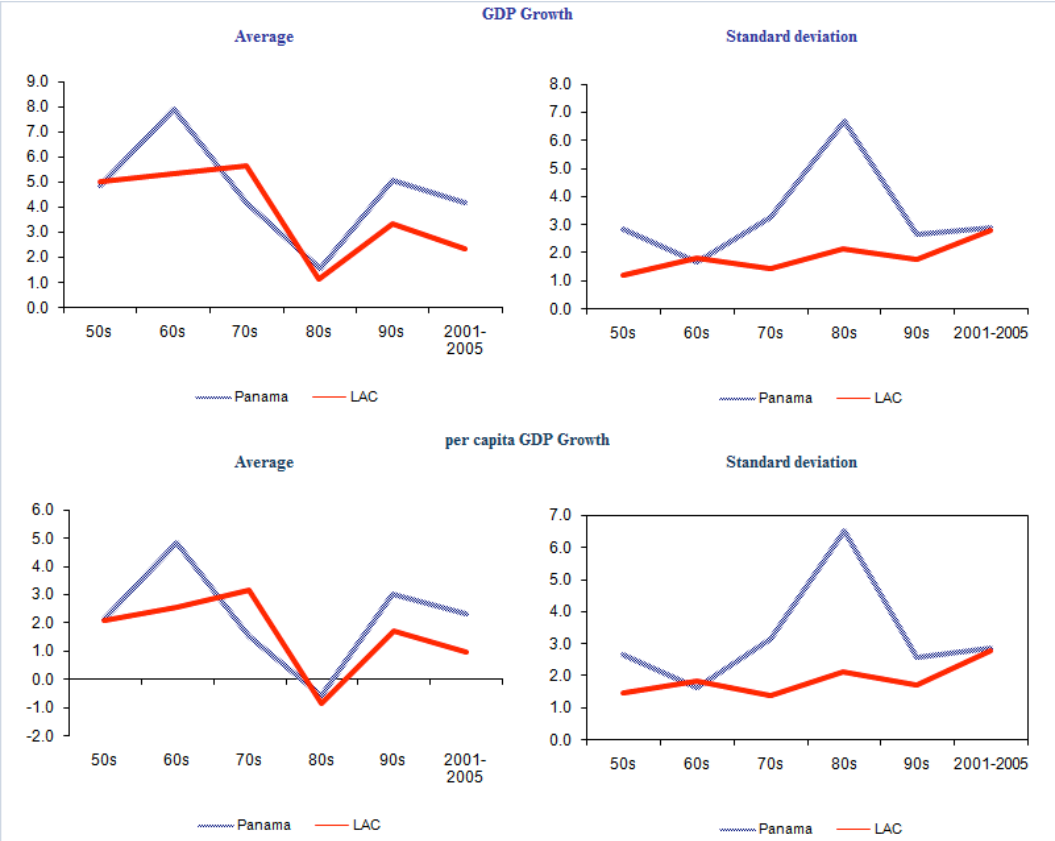
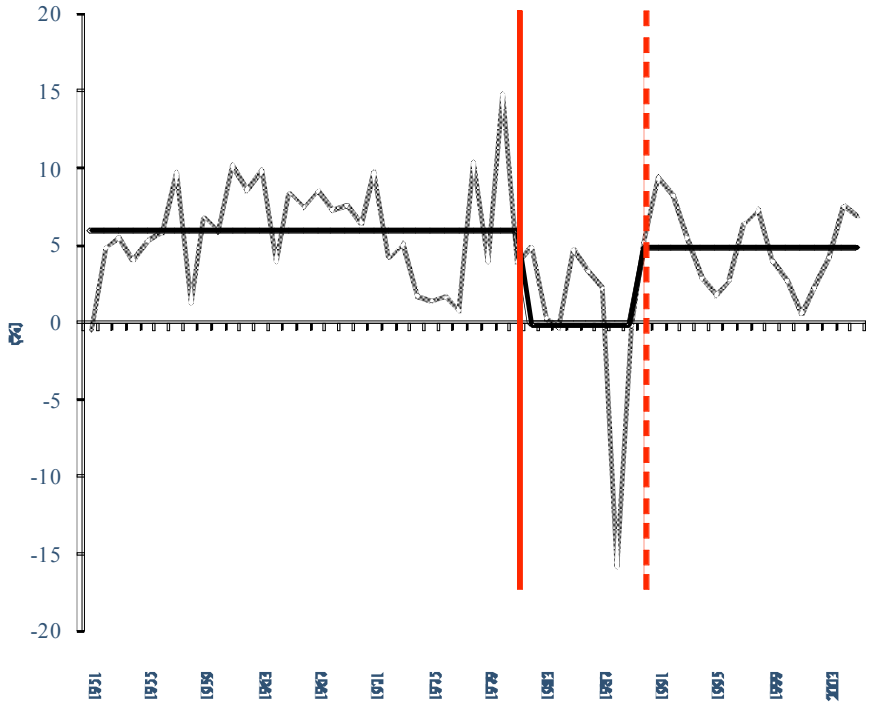


Figure 10. Panama and LAC: GDP growth and per capita GDP growth - 1951-2005



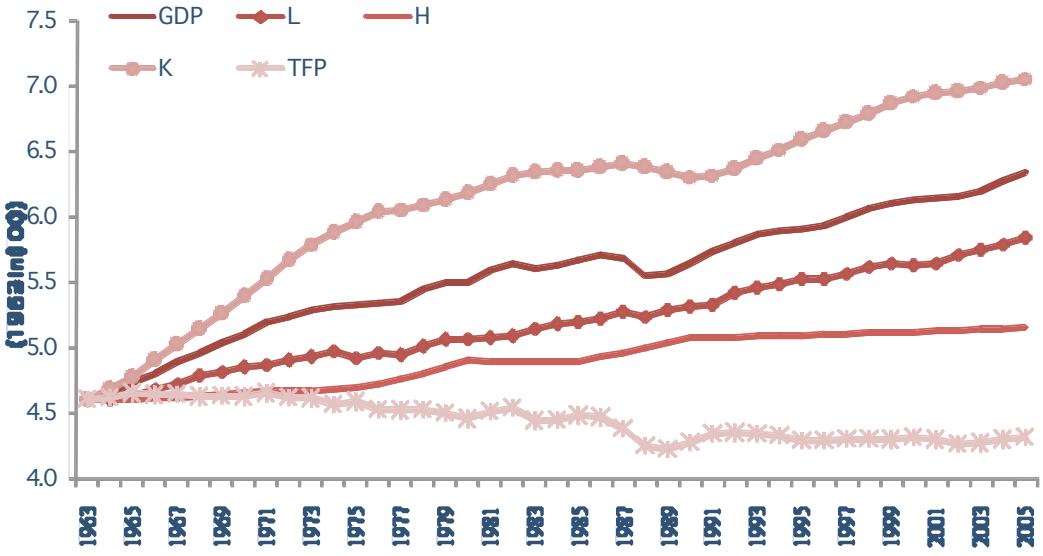
Source: WDI and ECLAC

Figure 11. Structural breaks in GDP growth



Note: Minimum period between structural breaks was set to h= 8 years. Dashed lines indicates the presence of an upbreak in the series. Source: Author's calculations based on data from ECLAC.

Figure 12. Panama - Sources of Growth (In logs, 1963-2005)



Source: Author's calculations.

Figure 13. School enrollment in Latin America

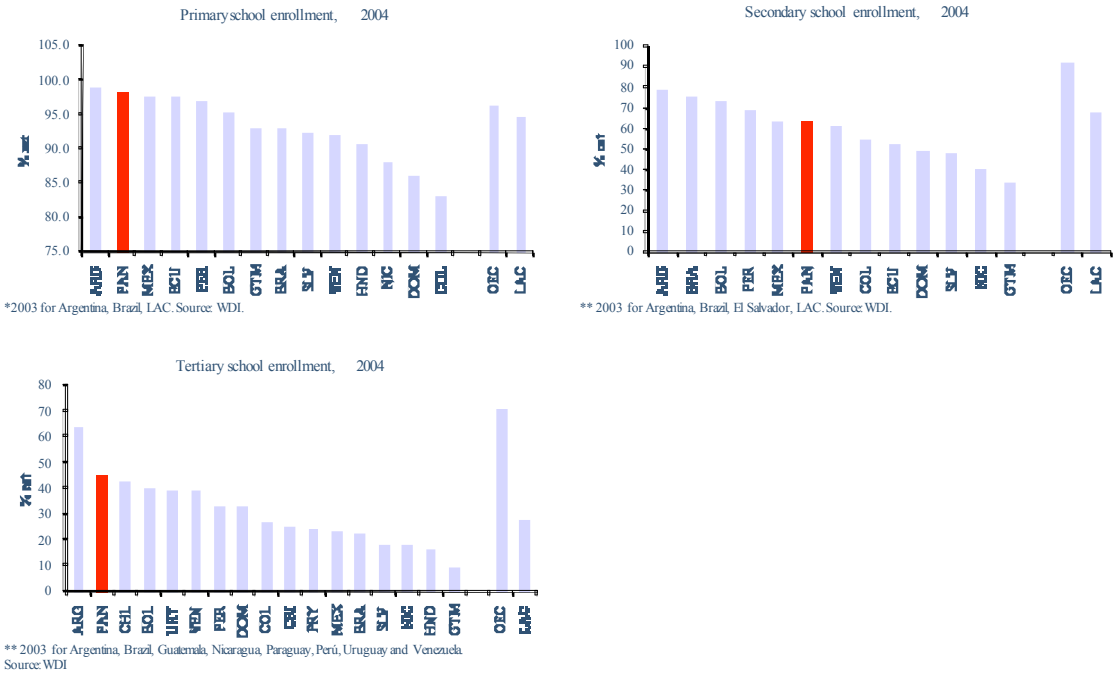
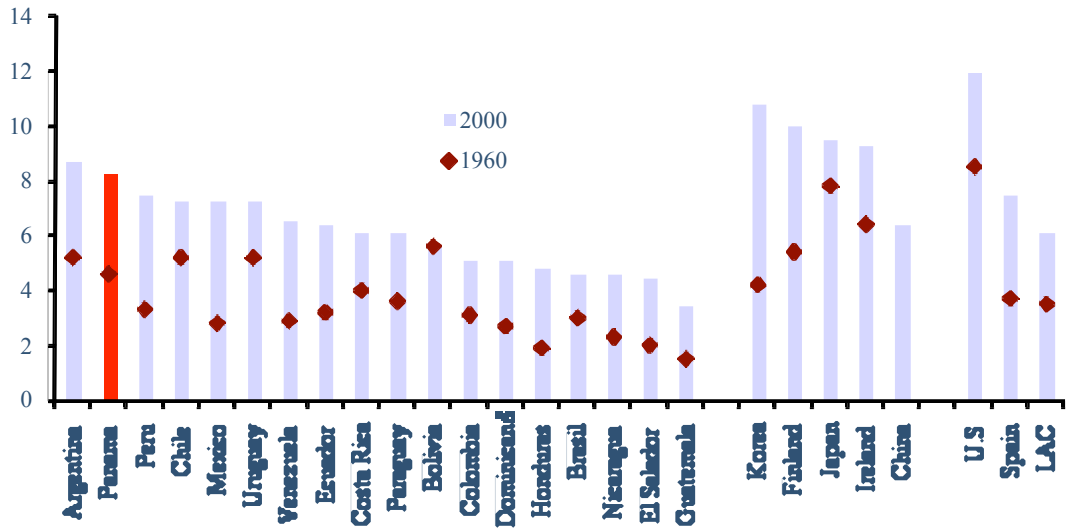
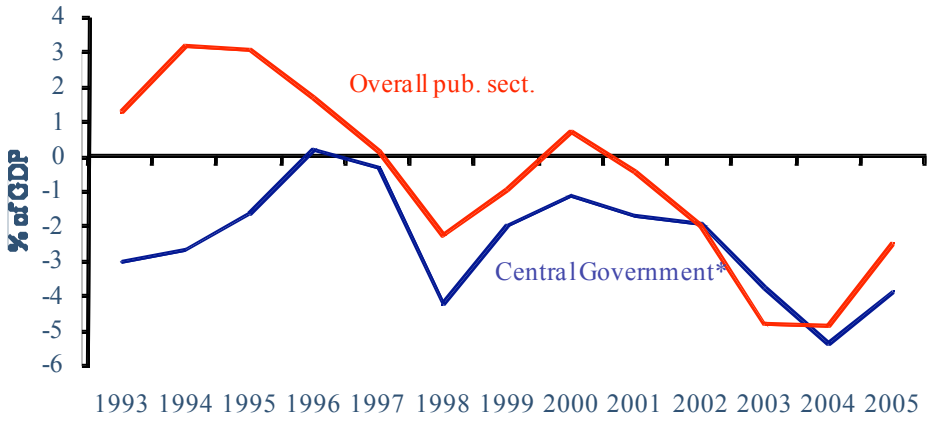


Figure 14. Average years of education: 1960-2000 (population older than 15 years)



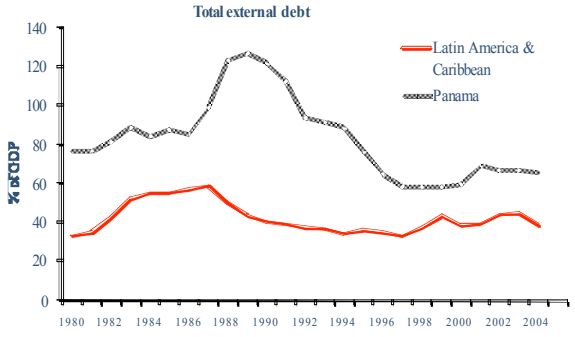
Source: Thomas, Wang and Fan (2003).

Figure 15. Fiscal deficit as percent of GDP

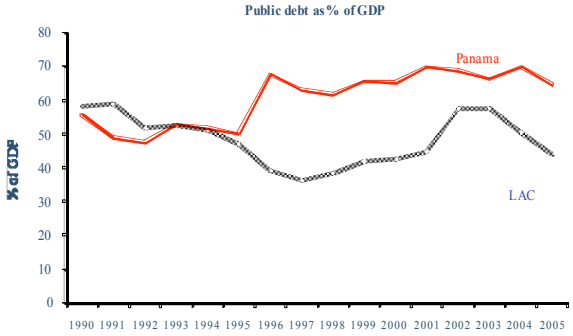


*Excluding the Canal. Source: ECLAC.

Figure 16. Public and External Debt



Source: WDI.



Source: ECLAC.

Figure 17. Panama's EMBI+ (and other Latin American countries).

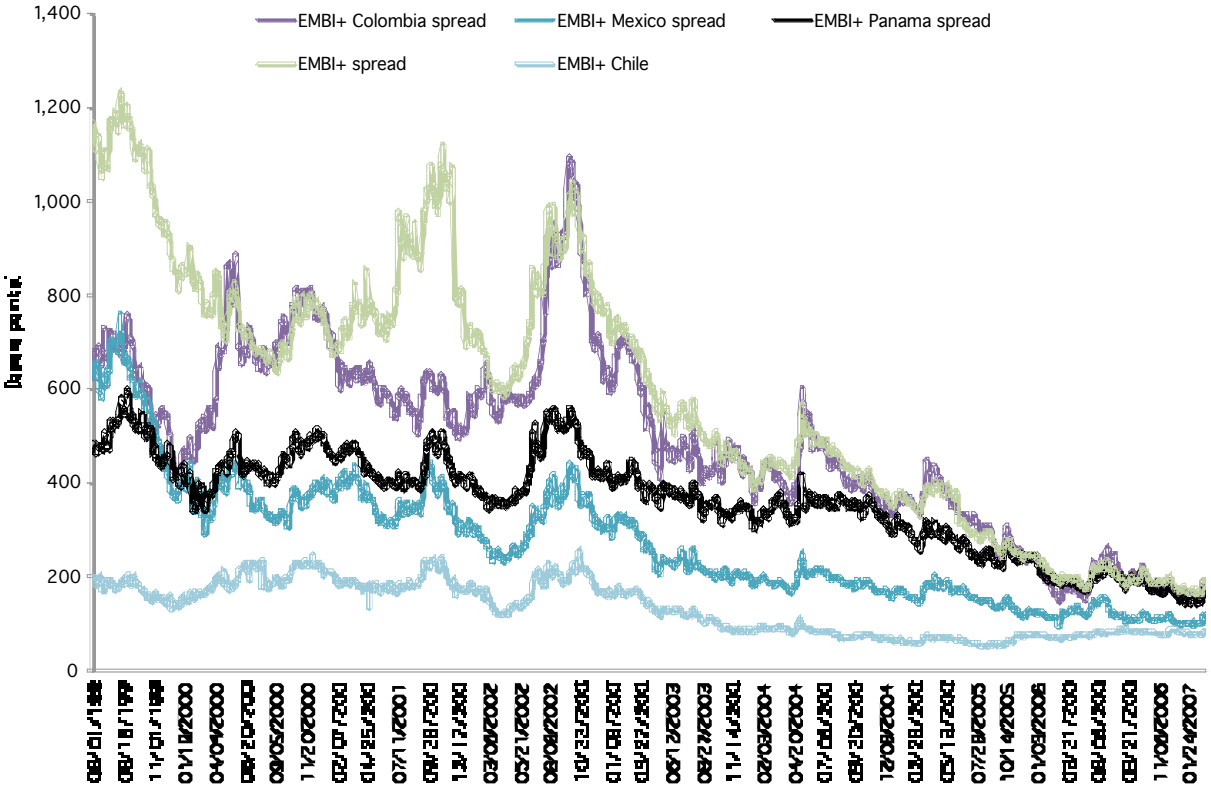
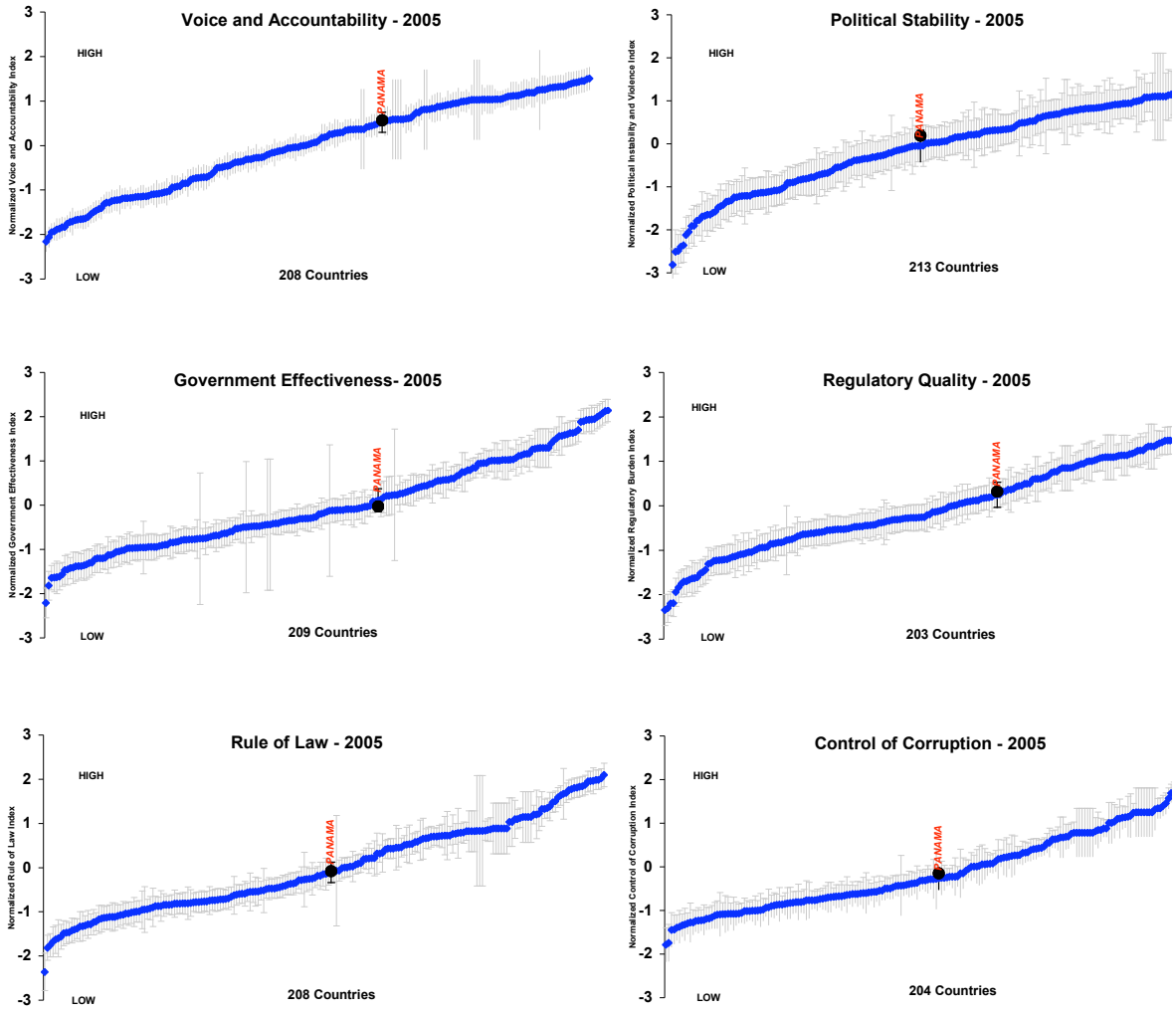
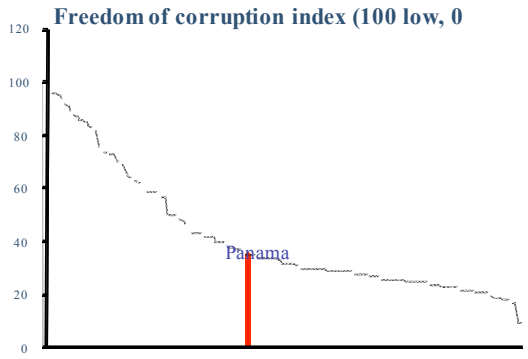


Figure 18. Perception of corruption – Kaufman et. al. (2006)

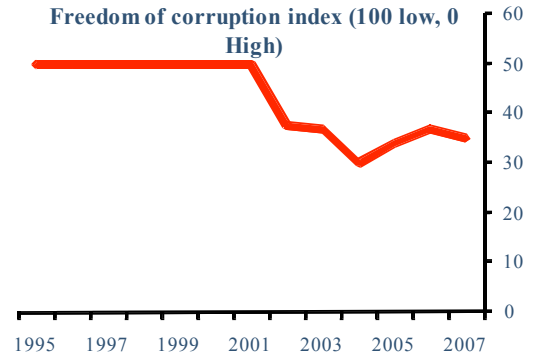


Note: Blue dots represent estimates for the 2005 governance indicators. The thin vertical lines represent standard errors around these estimates for each country in world-wide sample. Black dot represents chosen year comparator (if any). To add or delete countries from the chart, click on the "Country Selection" tab below. Source: Kaufman *et. al.(*2005).

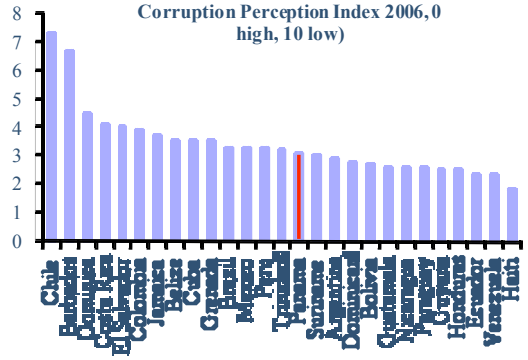
Figure 19. Perception of corruption – Other sources



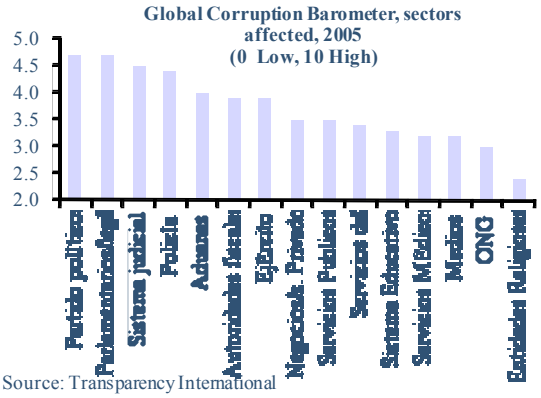
Source: Heritage



Source: Heritage Foundation

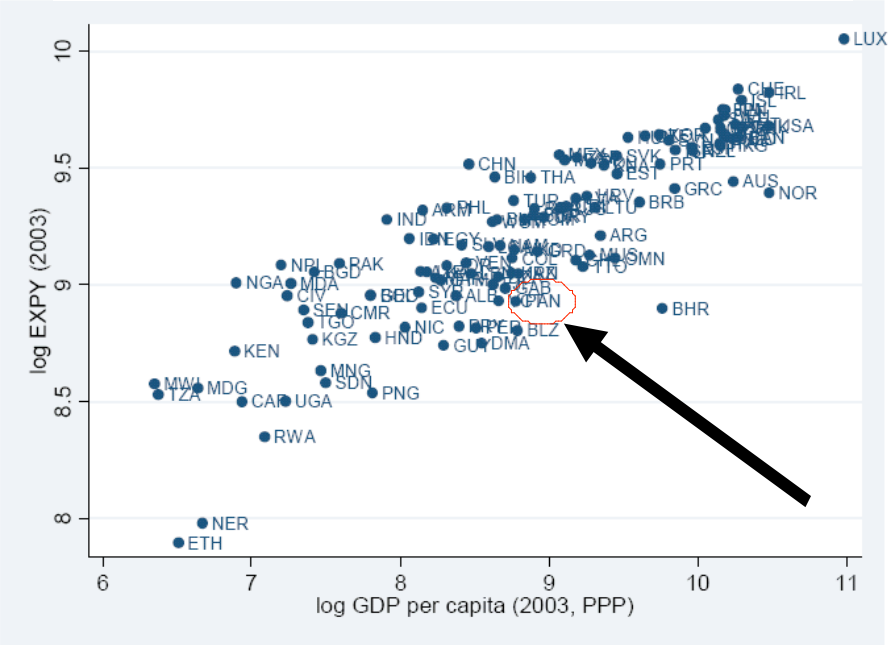


Source: Transparency International



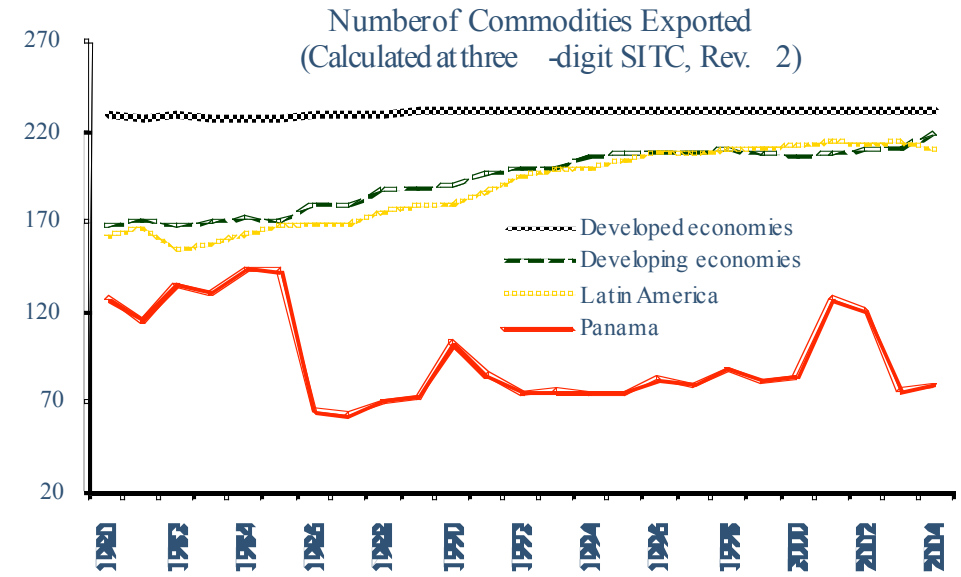
Source: Transparency International

Figure 20. EXPY vs. GDP per capita, 2003

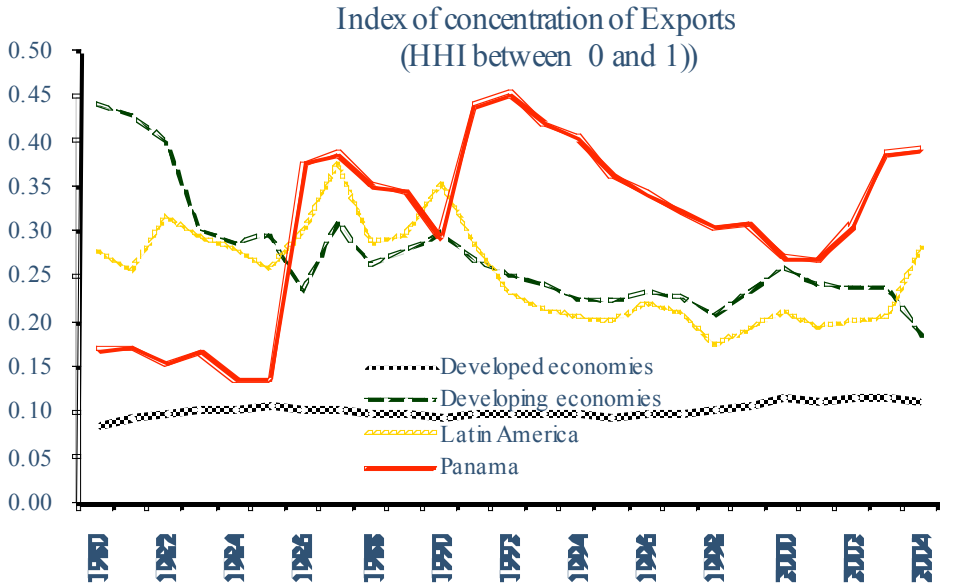


Fuente: Hausmann and Klinger (2007)

Figure 21. Concentration of exports

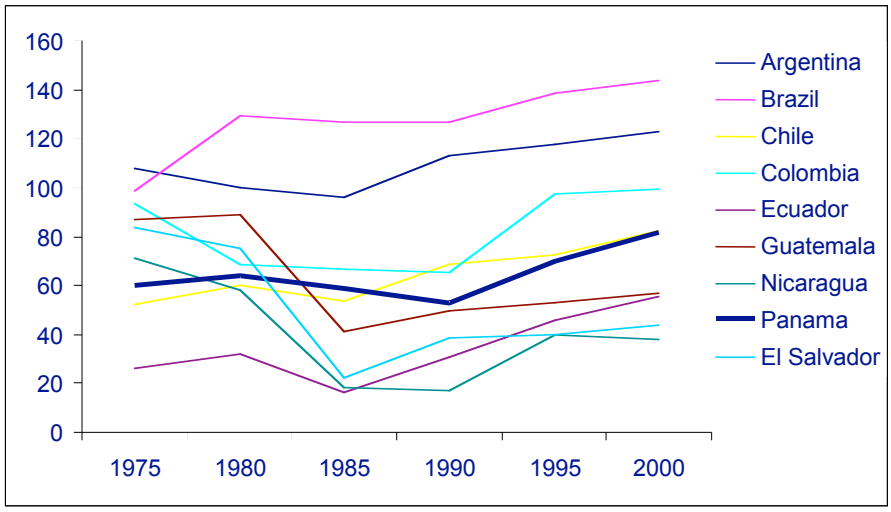


Includes products whose value exceeds $ 100 .000 or 0.3% of total exports. Source: UNCTAD.



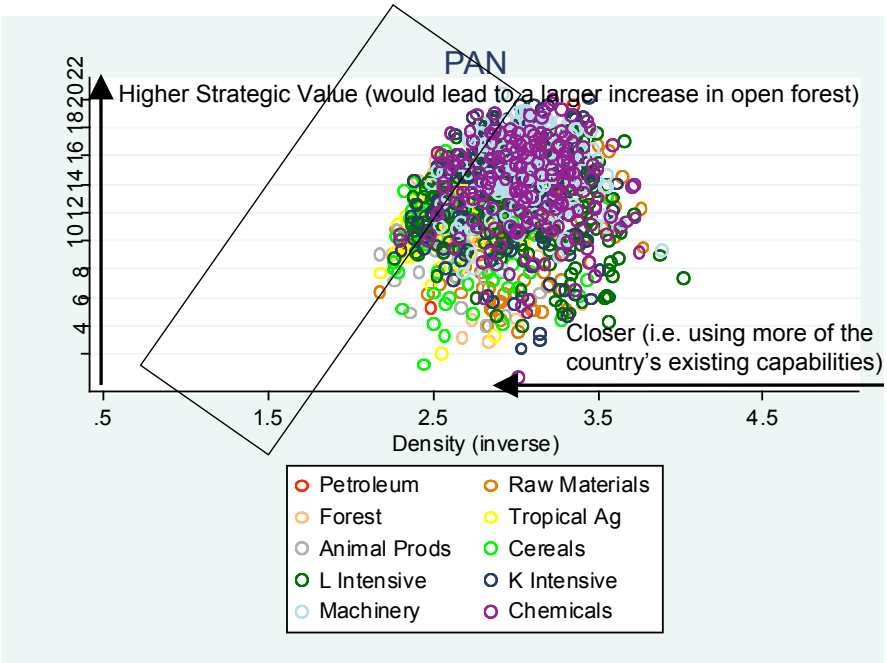
Includes products whose value exceeds $ 100 .000 or 0.3% of total exports. Source: UNCTAD.

Figure 22. Open forest



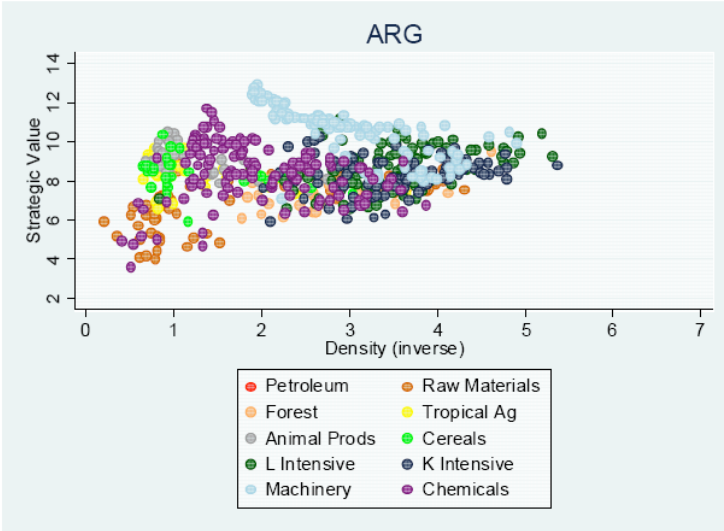
Source: Hausmann and Klinger's database and calculations.

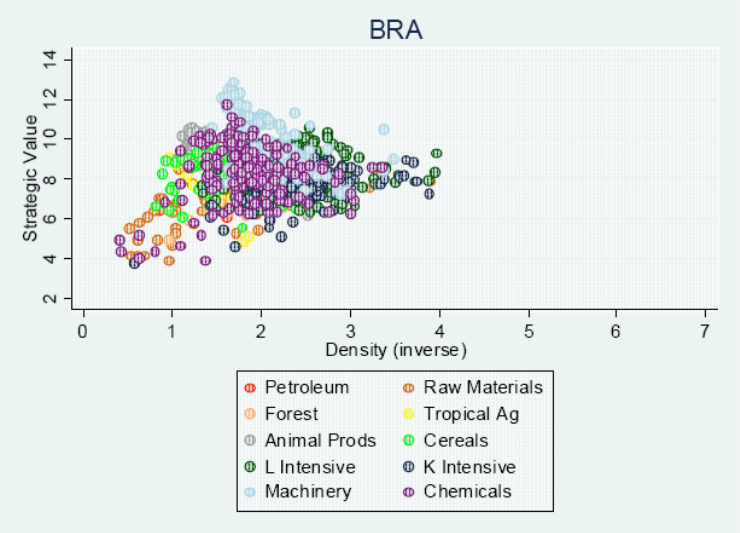
Figure 23. Panama's open forest, 2005. Proximity vs. Strategic Value

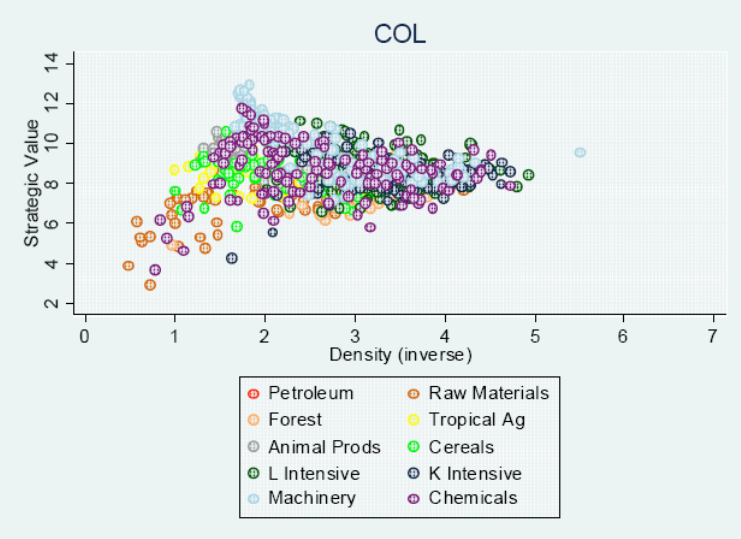


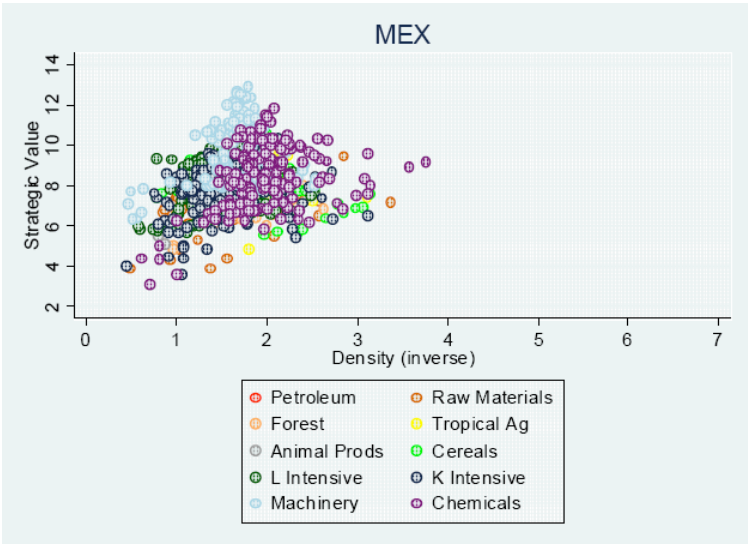
Source: Hausmann and Klinger's database and calculations.

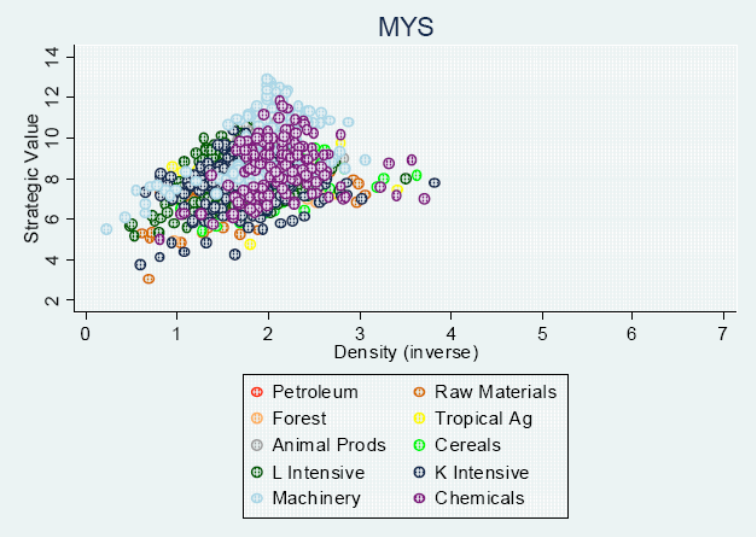
Figure 24. Open Forests in Selected Emerging Markets, 2004

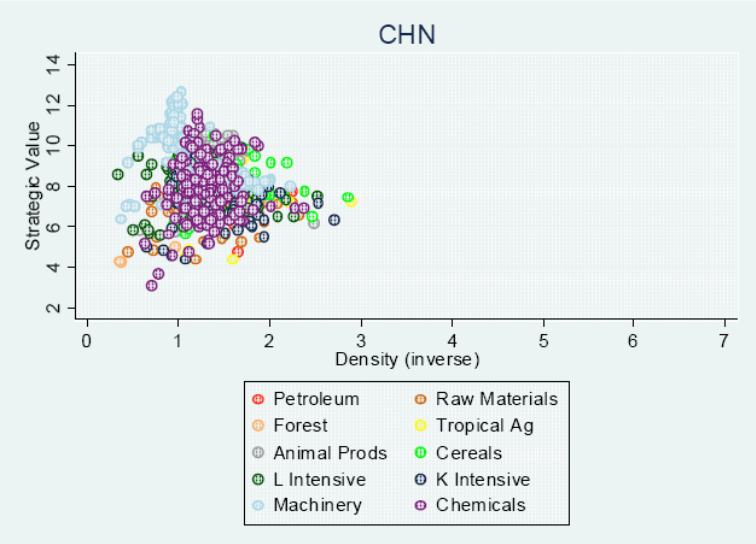





COL
Strategic Value
2
4
6
8
10
12
14
0
1
2
3
4
5
6
7
Density (inverse)
Petroleum
Raw Materials
Forest
Tropical Ag
Animal Prods
Cereals
L Intensive
K Intensive
Machinery
Chemicals

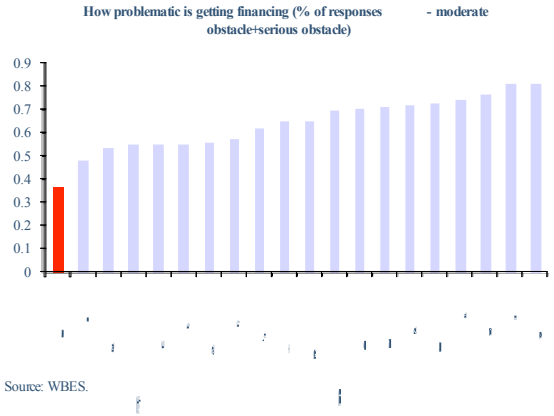

MEX
Strategic Value
2
4
6
8
10
12
14
0
1
2
3
4
5
6
7
Density (inverse)
Petroleum
Raw Materials
Forest
Tropical Ag
Animal Prods
Cereals
L Intensive
K Intensive
Machinery
Chemicals



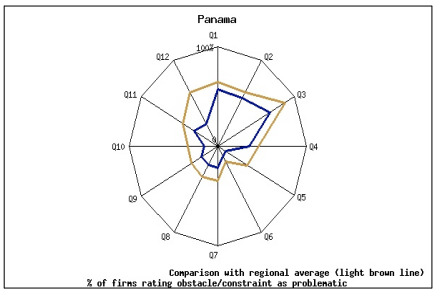


Source: Klinger and Hausmann (2007).

Figure 25. Access to credit



Source: WBES.



How problematic are the following financing issues for the operation and growth of your business? **Q1**. Collateral requirements of banks and financial institutions. **Q2**. Paperwork. **Q3**. High interest rates. **Q4**. Need special connections with banks. **Q5**. Banks lack money to lend. **Q5**. Banks lack money to lend. **Q6**. Corruption of bank officials. **Q7**. Lack access to foreign banks. **Q8.** Lack access to equity partners. **Q9.** Lack access to export finance. **Q10**. Lack access to lease finance. **Q11**. Inadequate credit information on customers. **Q12.** Lack access to long term bank loans. Source: WBES.