Revista
Desarrollo y Sociedad

72
Segundo semestre 2013
PP. 11-69, ISSN 0120-3584

Tropical Economic Miracles

Milagros económicos tropicales

Mauricio Rodríguez Acosta[1]

DOI: 10.13043/DYS.72.1

Abstract

During the second half of the last century Botswana and Singapore experienced an unparalleled economic performance among the Tropical countries. This paper explores and describes the main economic and institutional causes behind the rapid economic development observed in these two economies. The quality of institutions —inherited from the precolonial times and the British rule—, the appropriate integration into the world markets, and the political stability —achieved by their single ruling parties—, played a significant role in the "miracles" of Botswana and Singapore.

Key words: Botswana, case study, economic development, institutions, tropical, Singapore.

JEL classification: N10, N15, N17, O57, P52.

Resumen

Durante la segunda mitad del siglo XX Botsuana y Singapur experimentaron un desarrollo económico significativamente superior al del resto de países tro-

1 Department of Economics, CentER- Tilburg University. E-mail: m.a.rodriguez@uvt.nl. Phone: +31-(0)13-466-8758. PO Box 90153, 5000 LE Tilburg, The Netherlands.

I thank Hernado Zuleta (editor of this number) for his guidance during this project. I have also benefited from helpful comments by two anonymous referees, Alejandro Arregocés, David Bardey, Juan Carlos Guataquí, and Andrés García. The usual disclaimer applies.

Este artículo fue recibido el 17 de abril de 2013; revisado el 20 de agosto de 2013 y, finalmente, aceptado 20 de agosto de 2013.

picales. Este artículo explora y describe los principales elementos del entorno económico e institucional que determinaron el rápido desarrollo económico de estos dos países. Dentro de los principales determinantes de los "milagros" de Botsuana y Singapur se destacan, la calidad de las instituciones —heredadas de los tiempos precoloniales y del período en que estos países fueron colonias británicas—, la integración al mercado internacional y la estabilidad política —lograda por sus partidos políticos hegemónicos—.

Palabras clave: Botsuana, desarrollo económico, estudio de caso, instituciones, trópico, Singapur.

Clasificación JEL: N10, N15, N17, O57, P52.

Introduction

It is a well-recognized fact that *Tropical* countries (i.e. those located within geographical tropics, between latitude 23.45° N and 23.45° S), on average have had an inferior economic performance than their Nontropical counterparts. As Gallup, Sachs, and Mellinger (1999) extensive study on the effect of geography on economic performance concludes, geography does matter for economic development. In particular, "tropical regions are hindered in development in comparison to temperate regions, probably because of higher disease burdens and limitations on agricultural productivity" (Gallup et al., 1999, p. 5).

According to Madison's (2008) data, Real GDP per capita (RGDP) adjusted by PPP for the 79 Tropical[2] countries in the sample grew at a mean rate of 173% between 1960 and 2006, whereas for the 61 Nontropical countries this rate was 216%. The gap in the developmental paths is even more striking if one observes the RGDP in levels: In 2006 the average RGDP (in 1990 Geary-Khamis dollars) corresponding to Nontropical countries was $11,783, whereas in Tropical countries it amounted to $4,390, which is even below the average for Nontropical countries in 1960. This great difference in terms of output per head

2 My definition of Tropical and Nontropical countries differs from the one used by Gallup et al. (1999). I classify a country as Tropical if 50% or more of its area is within the tropics and Nontropical if less than 50% is within geographical tropics. Geographical information was obtained from the Center for International Development (CID) at Harvard University. http://www.cid.harvard.edu/ciddata/ciddata.html

can be explained both by the fact that in 1960 the average RGDP in the Nontropical countries was almost 3 times the average of the Tropical ones ($4,891 Vs. $1,773), and on top of that the mean growth rate of the RGDP between 1960 and 2006 was 43 percentage points higher in the former.

However, as one explores other characteristics of the distribution of the RGDP for Tropical and Nontropical countries some interesting features arise. For instance, in 1960 United Arab Emirates (UAE), with a RGDP of $22,433 had the maximum RDGP among Tropical countries, occupying the third place in a 140 countries sample, and being one out of the three Tropical countries ranked in the top 20.[3] UAE's RGDP in 1960 was two thirds of that of Nontropical Qatar, which had the highest RGDP of the sample for that year, $33,104. In 2006, the United States had the highest RGDP of the sample ($31,049), only 5% above the highest ranked Tropical country, Hong Kong, with a reported RGDP of $29,489, being the second highest in the whole sample for that year.

The change in RGDP distribution for Tropical countries, and in particular the change on its right tail, clearly suggests that the averages, of both the growth rate and RGDP level, are hiding the spectacular economic performance of some "atypical" Tropical countries.[4] As a matter of fact, one finds that during the second half of the last century, some Tropical countries actually outperformed Nontropical ones. Those Tropical countries which performed above the expectations are the countries on which the present study focuses, and I refer to them as Tropical Economic Miracles (TEMs).

Despite the fact that material achievement (economic growth) is not the only dimension of economic development (Sen, 1988), it is a very comprehensive measure of development and that is why this variable has been at the core of multiple applied studies. Moreover, there is no doubt that understanding economic growth is an issue of great relevance on both theoretical and empirical economics. Thus, by implementing a case study on each of the TEMs I pretend to achieve a better understanding of the role played by political and economic institutions, under an "adverse" geographic environment (i.e. being located within the geographical tropics). The ultimate purpose of this study is to provide further understanding on the following questions: How did these coun-

3 Together with Venezuela and Trinidad and Tobago.

4 See Figure 2, Appendix 1.

tries became economic miracles? Is there any path to follow or are there a set of circumstances that would make of each case a very singular outcome? If those economic miracles within the tropics happen to be "black swans" (Taleb, 2008), generalizations from their experiences would be impossible; nevertheless, we would have the opportunity to learn what were the crucial differences between these countries that achieved a great economic performance and those that did not.

At the end of the 1980's and all through the 1990's, and inspired by the Endogenous Growth theoretical models (e.g. Romer, 1986, 1990), a great deal of empirical studies aimed at comparing the international evidence on economic growth emerged. Table 1, summarizes the main findings of this literature on the cross-country evidence on the determinants of economic growth.

Nevertheless, many of these determinants (such as investment or government size) are deemed only as "proximate causes" of the long-run development. Instead, during the last couple of decades, the comparative development literature has been quite active in the search of the "fundamental causes" behind the dismal performance of the less developed economies. The main debate in this literature has revolved around the role and relevance of geographical features against the role of institutions.

Disease burden, low crop yield, and distance to ports have been identified as some of the mechanisms through which geography impacts aggregate productivity and growth. Jeffrey Sachs has been one of the most salient supporters of this hypothesis, as it is patent from Gallup et al. (1999, 2000), Sachs (2003), and Sachs and Malaney (2000), among others. For instance, in Gallup et al., (1999) the authors summarize their findings in four main results: *i)* Tropical countries had a slower economic development than Nontropical ones; *ii)* Coastal regions are in an advantageous position towards development; *iii)* Population density is favorable for economic development in Coastal regions; and *iv)* Population growth is negatively related with the potential for growth.[5]

Another geographical characteristic that has been recognized as a potential determinant of economic performance in the long-run is the abundance of

5 Those countries that do not fit the first result, i.e. tropical countries that outperformed Nontropical countries, are precisely my main subject of analysis in the current study.

natural resources. For example, Sachs and Warner (1995b, 1999, 2001), Gylfason (2001) and Gylfason and Zoega (2002), find evidence that supports the so-called hypothesis of "the curse of natural resources", which claims that countries with large endowments of natural resources, experience slow economic growth. Being the misallocation of resources the main channel through which this "curse" works. Basically, when there is a large availability of natural resources, the incentives to invest in human or physical capital to be used in other sectors are offset, and as a consequence economic growth stagnates.

Table 1. Determinants of Growth

Group	Variable	Sign	Source
Economic	Initial GDP	(-)	Romer (1986), Barro (1989), Barro and Lee (1994), Sala-i-Martin, Doppelhofer and Miller (2004)
	Government size	(-)	Romer (1986), Barro (1989), Barro and Lee (1994)
	Investment	(+)	Romer (1986), Barro (1989), Barro and Lee (1994)
	Education	(+)	Romer (1986), Barro (1989), Barro and Lee (1994), Sala-i-Martin et al. (2004)
	Inflation	(-)	Barro (1996)
	Openness	(+)	Garrison and Lee (1995), Sachs and Warner (1995a)
	Rest of pop/WAP	(+)	Bloom and Williamson (1998)
	Inequality	(?)	Banerjee and Dufflo (2003), Halter et al. (2011)
Institutional	Political Freedom	(?)	Barro (1996)
	Political stability	(+)	Barro and Lee (1994) Gupta, Madhavan and Blee (1998)
	Protection of Property Rights	(+)	Sachs and Warner (1995a)

Source: Author's construction.

Nevertheless, many recent studies have challenged the "resource curse" hypothesis on the grounds of the potential endogeneity of the resource abundance measures (e.g. Brunnschweiler and Bulte, 2008; van der Ploeg and Poelhekke, 2010), as well as on the role of poor institutional quality as necessary condition for resources to be "curse" and not a "blessing" (e.g. Mehlum, Moene, and Torvik, 2006).[6] The latter is a good synthesis of the main message behind the institutional hypothesis, which states that these "humanly devised constraints" (North, 1990, p. 3) triumph over geographical features as ultimate explana-

6 For an overview of the resource curse literature see van der Ploeg (2011).

tion for development in the long-run (Rodrik, Subramanian, and Trebbi, 2004). This strand of the literature identifies the proper definition and enforcement of property rights, as well as the rule of law as fundamental conditions for investment –and growth– to take-off (e.g. Acemoglu, Johnson, and Robinson, 2001, 2002, 2005a, 2005b; Hall and Jones, 1999).

Under this framework, I start by choosing some of those, a priori, disadvantaged countries –according to the geography hypothesis– and then I proceed to explore and analyze the nature of determinants that allowed them to follow a successful development path. Thus, this study borrows from the geography hypothesis that tropical countries on average perform worse, but departs from it in the sense that I look for those factors that allowed for the "disadvantaged geography" to be defeated. In fact, I show that institutions played a fundamental role in the miracles, and thus this study is closer in spirit to the institutional hypothesis. Nevertheless, and in contrast with the nature of many empirical studies adding to the geography Vs. institutions debate, a case study cannot be framed as a horse race between potential determinants.

The rest of the document is composed of 5 sections. Section I describes the Case Study Methodology and justifies its pertinence for the current study. That section also presents the selection of the countries that are subject of this study, Botswana and Singapore. Section II presents an empirical exercise that supports the Case Study as methodological approach for the research question. Sections III and IV are the case studies of Botswana and Singapore, respectively. Finally, section V is devoted to the concluding remarks.

I. Methodology

Given that I want to describe the developmental path of each identified TEM in the sample, it is logical that the most appropriate methodological approach is the case study. As a matter of fact, as I do not intend to identify an independent phenomenon or cause, but instead the goal is to recognize the interaction of the causes of each TEM and their outcome ("The Miracle") as a whole, the case study is a useful approach according to Feagin, Orum and Sjoberg (1991).

The case study methodology results appropriate since "Case study analyses provide both the author and the reader with the opportunity to develop a rich

understanding of the conditions, processes, and outcomes that have governed the growth experience of actual economies. As such, they provide a means of testing the implications of existing theories and developing one's thinking on the growth process." (Young 1992, p. 13). Though for a different subject of study, Sambanis (2004) also draws attention to the importance of performing case studies to complement statistical evidence, when one is dealing with problems that have multiple causes and heterogeneous sources of information.[7]

This methodological approach seems to be the best choice since the subject of study has multiple causes: pin-pointing a single cause of the TEMs' impressive economic performances is impossible; instead they are the result of a system of multiple interacting causes. And to get as much information as possible for each miracle it would be necessary to recur to different sources in each case, adding some heterogeneity to the information.

Regarding the kind of study that I perform, Yin (2003a) defines six categories to classify a study: exploratory, descriptive, and explanatory, and each of this three may be single-case or a multiple-case study. This study belongs to the descriptive and exploratory multiple-case category. It is descriptive because I present a detailed description of the TEMs and its contexts, and it is exploratory since I the causes of the miracle are initially unknown.

Furthermore, according to Yin (2003b), case studies have five main components on their research design. They serve as a logical plan to evolve from the research questions to the conclusions. These components are:

1) Study's question: How did some Tropical countries became economic miracles? Why these countries, and not others? Do these "Miracles" share common features?

2) Purpose: Identify the main economic and institutional characteristics of the TEMs and, if possible, find out whether they share any common features.

3) Unit of analysis: It is evident that the unit of analysis is each TEM. However, it is worth to mention that the TEM must be defined in both space (a country) and time (in some specific period). For example, Country X

7 His study is on the causes of civil war.

became an economic miracle during the 1980's; so, country X's economic policy during the 2000's is not relevant for the present study.

4) Linking data with purposes: This component is closely related to the relevance of the data to be reviewed, and consequently the starting point is the background literature on empirical economic growth. Thus, I need to focus in aspects such as, investment, education, and Political Stability, among other recognized catalysts of economic growth.

5) Criteria for interpreting the findings: This component is highly important when there are rival propositions to prove, but since this is an exploratory study and I am not looking for a single explanation or cause, rather for a set of multiple causes, the best way to include this element in the research setting is by contrasting several sources of information, both statistical and historical.

Case selection

The identification of the TEMs follows a simple algorithm:

1) Compute the 10-year growth rate for each country.

2) With the purpose to avoid having "false" economic miracles, that is countries which exhibit a great performances during one decade but during the following decade are a disaster (Easterly, Kremer, Pritchett and Summers, 1993) I calculate the moving centered average of order 21 of the growth rates computed at *1*, for each year. For example, in 1975 I have the 10-years average growth rates from 1965 to 1985.

3) I select the two Tropical countries that remained more consecutive years among the top 10 of the moving centered average calculated at *2*. According to Maddison's (2008) dataset I obtain that the pair of cases adjusted to these criteria are: Botswana (1970-1994) and Singapore (1971-1993). When the exercise is replicated for the data from the World Bank's World Development Indicators (WDI), results are the same in terms of countries and quite similar in terms of the period: Botswana (1970-1996) and Singapore (1970-1987).[8]

8 Hong Kong ranked third after Botswana and Singapore, thus it also deserves to be labeled as a TEM. However, I decided to exclude it from the study because it remained under the British control until 1997.

Of course this algorithm is not an indisputable way to select TEMs. However, what is indisputable is that Botswana and Singapore had an amazing economic performance during the second half of the last century, and thus they deserve to be labeled as "Economic Miracles" and to be part of this study. In other words, I may be failing for the exclusion of some cases, but not for the inclusion of these two.

II. Econometric Exercise

In order to add to the pertinence of the case study as methodological approach to determine the causes of the Economic Miracles within the tropics, I perform classical growth regressions. This empirical exercise serves to show –once more– the divergence between Tropical and Nontropical countries, and to demonstrate how growth measuring exercises may fail to find the specific sources of growth, in particular for the countries that achieved extraordinary economic performances under an unfavorable geographic environment.

Table 2. Descriptive Statistics and Source

Variable	Obs.	Mean	Std. Dev.	Source
growth	3,685	23.994	32.573	Heston, et al. (2009)[a]
ki	3,685	21.118	10.381	Heston et al. (2009)
kg	3,685	16.456	7.782	Heston et al. (2009)
lsc	3,685	9.065	8.997	Barro and Lee (2000)
rgdp (in logs)	3,685	8.407	1.024	Heston et al. (2009)
polcon	3,685	0.215	0.200	Henisz (2000)[b]
ethnic_frac	3,685	0.426	0.263	Alesina et al. (2003)[c]

[a] Heston, Summers and Aten (2009). [b] 2010 release retrieved from http://www.nsd.uib.no/macrodataguide/set.html?id=29&sub=1. The index goes from 0 to 1, and it increases with the constraints on any political actor. For instance, a higher index implies that the system exerts more control on the ability of the executive to change policies. [c] Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg (2003).

Source: Author's calculations.

I estimate five econometric models, following the main findings of Barro and Lee (1994) as a benchmark. In each model the dependent variable is RGDP per capita's ten-year growth rate, while the set of explanatory variables includes: Investment/GDP ratio (*ki*); Government Expenditure/GDP ratio (*kg*); the percentage of the population older than 25 years that completed secondary (*lsc*),

as a proxy of human capital; the 10th lag of the RGDP per capita to control for convergence (*l10.rgdp*), a political constraints index to partially account for the institutional dimension (*polcon*); and an ethnic fractionalization index (*ethnic_frac*), as a proxy for social capital. The summary statistics and the sources of these variables are presented in Table 2.[9] All the variables come in a yearly frequency with the exception of *lsc* which comes in a quinquennial structure and the fractionalization variable which is constant. In order to express *lsc* yearly I imputed the precedent quinquennial value for the four year interval without observations, for example: from 1961 to 1964 the variable takes its value of 1960. Estimations are performed for 97 countries, 47 Nontropical and 50 Tropical, between 1960 and 2005.[10]

The first Model presented in Table 3 is an OLS pooled regression. From this benchmark exercise it is possible to observe that the classical results of Barro and Lee (1994) are maintained: growth depends positively on investment and human capital; and negatively on initial RGDP evidencing the existence of convergence, and on Government Expenditure as percentage of the GDP. These results do not change when controlled for *tropical,* a dummy that is active when more than 50% of the country's area is within the tropics, according to the CID geographical data; *tropical* has the expected (negative) sign, and the coefficient is fairly large in magnitude (around a third of the growth's standard deviation). In the third OLS model, the additional controls, political constraints and fractionalization, as well as regional dummies are included. As expected, countries in which a given political actor, for instance the executive, faces lower controls and where the society is more ethnically diverse tend to exhibit a poorer economic performance. The results of the other explanatories are not significantly affected, although the magnitude of the tropical dummy coefficient is reduced by 30%. This indicates that in the specification of column 2 the tropical dummy is also capturing the effect of poor institutions (at least form the political perspective) and more fractionalized societies.[11] Nev-

9 To minimize the potential for endogeneity of the polcon index, I use the average index of the previous decade.

10 Note that the definition of tropical (i.e. more than 50% of the territory between geographical tropics), splits the sample of countries almost evenly.

11 Alternative specifications include the polity2 index (Marshall and Jaggers, 2008) on top of the polcon measure, and a measure of checks and Balances (Beck, Clarke, Groff, Keefer and Walsh, 2001) instead of the polcon measure. Results do not change significantly, although in the latter the sample size is significantly reduced

ertheless, after controlling for these factors the difference on average growth between Tropical and Nontropical countries still appears to be very large. In addition to the OLS models, Panel Data models are estimated, both in Random Effects (RE) and Fixed Effects (FE) specifications.

Table 3. Determinants of Economic Growth

Variable	Linear1	Linear2	Linear3	RE	FE
ki	1.689***	1.621***	1.355***	1.267***	1.101***
	(0.063)	(0.0633)	(0.066)	(0.179)	(0.201)
kg	-0.624***	-0.700***	-0.764***	-1.022***	-0.999***
	(0.073)	(0.071)	(0.071)	(0.309)	(0.323)
lsc	0.825***	0.713***	0.582***	0.765***	0.787***
	(0.065)	(0.064)	(0.061)	(0.270)	(0.291)
l10.rgdp	-12.183***	-13.779***	-16.691***	-32.310***	-37.672***
	(0.738)	(0.772)	(0.815)	(3.575)	(4.275)
l10.polcon			12.061***	14.844*	12.521
			(2.674)	(7.818)	(8.704)
ethnic_frac			-18.865***		
			(2.216)		
tropical		-9.858***	-7.146***		
		(1.195)	(1.261)		
Regional Dummies			Yes		
Observations	3,685	3,685	3,685	3,685	3,685
R-squared[a]	0.294	0.309	0.344	0.346	0.353
# of countries				97	97

[a] The constant is estimated but it is not reported. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Author's calculations.

Most of the results are robust to the different specifications of the model, and when the traditional consistency tests are performed the FE model (as expected) is the most recommended.[12] Interestingly, the polcon index is no longer significant; a potential explanation for this is that the index is actually capturing some fundamental country-specific characteristic of the institutional framework, and therefore gets wiped-out once all the identification comes from the within-country variation. In sum, one can argue that there are coun-

12 Results are also robust to different specifications of the dependent variable: exercises with a five-year growth rate only change in magnitude but not in sign.

try-specific characteristics, besides these usual "growth sources", that explain the economic performance of each country. However, these specific variables, such as the time-invariant characteristics of the institutional framework, are hard to measure on an internationally comparable basis, and thus it is difficult to explicitly incorporate all of them in this type of analysis.

Finally in Table 4, I present the fixed effects obtained from the FE estimation (i.e. last column of Table 3). Results are consistent with the case selection: Singapore and Botswana have the second and the third largest fixed effect for the Tropical countries, just behind Hong Kong. It is possible to observe that the difference between the selected cases (Botswana and Singapore) and the rest of the Tropical countries is huge, and their fixed effects are even above the mean, the median (in the case of Singapore the percentile 75) of the Non-tropical countries.[13] Note further that the difference between Botswana and the rest of Africa is striking. Botswana has of course the largest fixed effect, and it is 50% larger than the second in the ranking (Mauritius).

Table 4. Fixed Effects

	Obs.	Mean	Median	per-75[a]	Std. Dev.	Min	Max
World	97	-3.015	-0.116	27.204	35.723	-91.302	53.446
Botswana		36.337					
Singapore		45.494					
Rest of Tropical[b]	47	-25.050	-26.477	-4.336	28.307	-89.407	31.366
Nontropical	47	15.959	24.700	44.546	29.070	-91.302	53.446
Rest of Africa[c]	27	-35.691	-36.590	-22.292	25.435	-71.959	23.517

[a] Percentile 75; [b] Excluding Botswana, Hong Kong, and Singapore; [c] Excluding Botswana.

Source: Author's calculations.

This evidence is important for this study's purpose in two dimensions: *i)* classical determinants of growth are not sufficient to explain countries economic performance; thus, country-specific analysis, in particular the case-study approach, seems necessary in order to dig-deeper into the catalysts of great economic performance. And *ii)* the fixed effects obtained are compatible with the case selection, demonstrating that despite being Tropical, Botswana and

13 Fixed Effects' distribution functions are presented in Figure 3 in Appendix 1.

Singapore, had some specific features that allowed them to achieve an impressive growth path.

In order to unveil the particular characteristics that accounted for Botswana's and Singapore's rapid growth, the following two sections of this document are devoted to expand on each of these cases, with particular emphasis on the 1970's and 1980's.

III. Botswana – A Resource Blessing

Botswana is located in the poorest continent of the world, is landlocked, around 70% of its territory is within the geographical tropics, and about the same percentage is covered by the Kalahari Desert. Not exactly an encouraging picture. However, Botswana managed to exhibit an incredible economic performance that, countries with better "endowments" fell short to accomplish. According to Madisson's data (2008), from 1970 to 1990 Botswana's RGDP grew 411%, in 1970 the RGDP was $647 (1990 US dollars) occupying the 128th position out of 140 countries, while by 1990 its RGDP was $3,306 and it ranked 87th out of 162.

What were the keys for this "unexpected" outcome? The visible causes of this result can be broadly grouped in three categories: *i)* Political Stability; *ii)* Mining; and *iii)* Trade Policy. It is important to highlight that beneath each of these categories and in their interactions, inheritance of Twsana people's ancient institutions (traditions) played an important role. In fact, the civil servants' attitude towards public resources and the policy design and implementation were clearly influenced from the pre-colonial institutions (I will come back to this point at the end of this section).[14] Political Stability allowed Botswana to elaborate and execute long run development plans, as well as establish positive relationships with foreign investors that perceived a good business climate, since risk of expropriation was lower compared with other African countries where democracy was not as properly established as in Botswana. The case of economic transformation due to its mineral richness is perhaps the most well-known cause of Botswana's prosperity, which evolved from an agricultural economy to a mineral-industrialized economy. The way in which dia-

14 Twsana people are Botswana's ethnic majority.

mond richness was managed, is a clear example of how resource wealth can be converted into a blessing instead of a curse (as many other African countries have experienced). Botswana's success may then be labeled as a *resource blessing*, with "adequate resource management" drawing the line between blessings and curses. Finally, as to the Trade Policy Botswana has had a pro-openness position since its independence, evidence of this was its early membership to the Southern Africa Custom Unions (SACU).[15] As a consequence of the impossibility to set its own tariffs freely, Botswana could not totally protect its national industry, avoiding the negative effects on external competitiveness of the import substitution industrialization model followed by many other developing countries during the 1980's (Leith, 2005).

I begin this section by presenting some economic indicators, to understand the context in which the amazing economic growth was accomplished, and then I will return to the description of each of these three categories that I believe were the key determinants for Botswana to become an Economic Miracle.

A. Botswana's Economic Context

Besides its impressive GDP per capita growth (see Figure 1 in Appendix 2 (A2)), Botswana achieved positive results in other macroeconomic indicators. Though inflation may be labeled as high using developed countries' standards, when compared with developing countries in particular with other African countries Bostwana's inflation level was relatively low, always under 18%, as shown by Figure 2 in A2, having an annual average of 10.3% between 1974 and 2005. In fact, this economy did not suffer of "modern" hyperinflationary processes.[16] This "low" level of inflation is even more remarkable when one thinks that Botswana's major export is diamonds. As stated above, according to Barro (1996), long-term high inflation has a negative effect on economic growth.

As Leith (2005) points out, one of the most impressive changes evidenced in Botswana, was the rapid transformation of its economic activity structure. At 1975 both industry (which includes mining) and agriculture, account for a 30% of the GDP each. From then, industry experienced a fast expansion, while

15 The other members of this Customs Union are: South Africa, Lesotho, Swaziland, and Namibia.

16 At the beginning of the 1990's Peru and Brazil experienced hyperinflations, and more recently Botswana's neighbor, Zimbabwe.

agriculture experienced the complete opposite. By 1989, the former accounted for 2/3 of the GDP, while the latter was less than 5% of the GDP (See Figure 3 in A2). The increase of more "prone to accumulation" activities, as those of the industrial and mineral sector is closely related with the evolution of economy's investment. Figure 4 in A2, shows an increase of the gross capital formation as percentage of the GDP from the mid 1960's to the beginning of the 1970's, then investment fluctuates around 45% of the GDP until the end of the 1980's. At the beginning of the 1990's the investment/GDP ratio was back to its pre-crisis levels.

Regarding to the its economic relation with the rest of the world, Botswana's exports as percentage of the GPD experienced a constant increase from 1969 to 1987, period in which this value increased from 23% to 75% (see Figure 5 in A2), after the world crisis at the 1980's, diamond sales declined around the world, thus Botswana's exports reduced to 50% of the GDP by the end of that decade, and remained around that level until now. Imports as percentage of the GDP increased during the first post-independence years until 1981, when its level was 71%, after that, a rapid decrease is observed, falling below 40% at the beginning of the current decade. Imports behavior can be partially explained by, Botswana's general Trade Policy. Instead of protecting local industry with high tariffs, maintaining low import levels, but with an uncompetitive national productive system, Botswana followed a free trade model, and signed into the SACU. Hence, instead having low imports/GDP ratio at first, and a high ratio when openness became inevitable, Botswana managed to "substitute" imports by having a constantly competing local industry, ready to compete in the long-run with its closer partners.

As exports and imports grew in importance, Botswana's trade picked at the end of the 1980's, when total trade represented 123% of the GDP as shown in Figure 6 in A2. These numbers validate my view on the importance of trade for Botswana's economic achievements. After that, trade slowed down and during 1990's and 2000's, fluctuating between 80% and 90%. Figure 6 in A2, also shows the External Balance, which remained negative until 1983 when the commercial deficit was around 20%, from 1984 Botswana always achieved current account surpluses, whit its highest point at the end of the 1980's. Overall, the trade "picture" of Botswana seems rather positive. Not only the ability to penetrate international markets is evident, but also the capability to sustain a positive balance with the rest of the world in the long-run.

Finally, regarding to the population structure, Botswana had a positive evolution as its working age population increased in relation to the rest. From the mid 1960's to 2008, the dependence index reduced steadily to a half of its value. Bloom and Williamson (1998), find that Demographic Transition played a main role in East Asian rapid economic development, since a reduction in the dependency index implies an increase in labor's productivity. So from Figure 7 in A2, it is observed that regarding to population, Botswana experienced a similar transition to that of the East Asian countries. In addition, the percentage of unschooled population over 25 was significantly reduced, by 1965 72% of this group was unschooled, and by 1995 this percentage was 36% (Barro and Lee, 2000).

This brief review of some of Botswana's macro-indicators leaves the following broad conclusions about its economic context: *i)* macroeconomic stability, at least monetary stability, was achieved; *ii)* trade played a main role, and a sustainable a positive relation with the rest of the world was attained; *iii)* high levels of capital investment were accomplished; and finally *iv)* Botswana experienced a demographic transition favorable to foster economic growth, and an important reduction in the unschooled population.

B. Botswana's Keys for the "Miracle"

1. Political Stability

Though Botswana is a young nation, independent since September 1966, its democracy and political institutions have been quite stable. First elections were celebrated in 1965, still as British Protectorate, and since then they took place every five years. Botswana has never suffered a coup, nor civil neither military, contrary to the experience of several other African countries. Botswana's Democratic Party (BDP) has been the ruling party uninterruptedly since first elections, basically because it represents the Botswana's ethnic majority (Twsanas) and because it managed to have healthy relations with both rural peasants and elites.[17, 18] The BDP was founded by probably the most signifi-

17 Initially under the name of Bechuanaland Democratic Party because by its foundation in 1961 Botswana still was a British Protectorate, The Bechuanaland Protectorate.

18 During the years, popular support to the BDP has been declining due mainly to the urbanization of the population. In particular, the BDP seems to be less popular among the urban working class.

cant figure of Botswana's modern history, Seretse Khama. Khama was the first president, and stayed in office until his dead in 1980. He played an important role in the country's transformation from one of the poorest nations in the world to a prosperous independent nation.[19] As addressed by Leith (2005) and Matin (2008), Khama's leadership, had an undisputable effect on Botswana's development. One fact that in particular depicts his long-run vision of a developmental state was the Mines and Mineral act of 1967, which entitles the Central Government with the rights of exploitation of the subsoil wealth. As remarked by Leith (2005), Khama believed that leaving these rights in hands of the regional authorities or of private companies would deprive the Central Government of an important revenue source to finance public investment. This single fact would prove to have an impressive impact on Botswana's mineral-guided economic development.

Besides Khama's leadership, according to Tsie (1996) Political Stability in Botswana is explained by the government's rule of law, as well as by the low level of corruption and human rights' violations. This author also emphasizes in the fact that Political Stability has been a central element in Botswana's accelerated development process.

At independence the major an almost unique mean of accumulation was cattle, and this had an important effect on the political context through three main channels: *i)* as cattle is easy to move, it was "protected" against predatory practices (Leith, 2005) discouraging the formation of corrupt predatory institutions, that deter the private initiative; *ii)* not all individuals own cattle, and in some cases they have to recur to the good-will of owners to borrow it, this situation created a patron-client system of loyalty between cattle owners (future political elite), and rural peasants (future political capital of the BDP (Samatar, 1997); *iii)* as main source of national wealth, prosperity of cattle sector was a common interest not only for cattle owners, but for the whole society, providing the new independent government with a unique environment of social cohesion towards the common objective of developing this sector, which also facilitated the coordination of the Trade Policy. Thus, Botswana's government did not have to start from achieving agreement between its political and economic majorities, but from maintaining the *ex-ante* concurrence,

19 According to Maddison (2008), Botswana's RGDP in 1966 was 473 (1990 US dollars), occupying the 137th place of 140.

which implies that at least the first step through Political Stability and policy coordination was accomplished even before independence.

Several scholars recognize that a great deal of these shared interests rested on the need for maintaining a competitive beef exporting sector, in particular a competitive exchange rate was desired (Acemoglu, Johnson and Robinson, 2003; Leith, 2005, Martin, 2008; Samatar, 1997; Tsie, 1996). They also coincide in the fact that fortunately, rulers understood that the best way to protect these interests was by the implementation of growth and development promoting policies. Government's position in favor of the capitalist accumulation and property rights protection, derived from the elites' interests, definitely paved the path for Botswana to have a development promoting state instead of a predatory one, and the emergence of good institutions (Acemoglu et al., 2002).

Botswana's Political Stability was also strengthened by the formation of a professional public service. In 1966 Botswana lacked of prepared civil servants, president Khama who lived and studied in England during the mid-1940s, decided that the best way to build an efficient civil service was by enrolling prepared foreigners and Batswana expatriates, instead of employing unprepared residents.[20] Other African countries failed to build a responsible public apparatus under the pretext of protecting their national interests, but Mr Khama had a different view on the subject, in his own words: *"we should never sacrifice efficiency on the altar of localization"* (Leith 2005, 57).[21] The foreign nature of the civil service was born in the form of technical assistance, but not the common short-term assistance; instead, these foreign experts lived for long periods in Botswana, and some of them even adopted the nationality, as remarked by Leith (2005). This long-term character of the assistance had two outcomes: first, policy recommendations were tailor-made according to the needs and characteristics of the country; second, foreign experts were able to train Botswana's nationals, whom in the end became the basis of a national professional civil service.

20 According to Acemoglu et al. (2003), at independence only 22 Batswana were graduated from University.

21 Leith (2005) cited it from Fawcus and Tilbuy (2000).

As Samatar (1997) highlights, merit and professional capability were at the core of this modern bureaucratic system. Since its independence, Botswana benefited from the presence of experts on public policy design, and the result of it was evident, especially when compared with other regimes that were deliberately against hiring foreigners for the public service (e.g. Somalia). This efficient apparatus has an important share on the constant success of the BDP, but the relation goes in both directions. Building such a professional system requires a lot of time and commitment, without Political Stability, this well-functioning bureaucratic would have never been emplaced.

Political Stability, together with the sound economic policy design of the (middle-term) National Development Plans, brought economic stability about.[22] These plans created boundaries on fiscal expenditure, impeding excessive expenditure, and thus excess of money circulation (hence inflation) during the booms of fiscal revenues. Instead, during positive shocks on revenues, the government was able to accumulate foreign exchange reserves, a strategy that played an essential role in maintaining a favorable exchange rate, therefore buffering the negative effects of Dutch Disease on the exports sectors other than mining (Leith, 2005; Martin, 2008).

However, the most important particular consequence of Botswana's Political Stability, which has been always associated with its public commitment to the protection of property rights (Acemoglu et al., 2003), is its undisputable impact on government's social contract with foreign investors. Foreign investors perceived protection of their interest and low political risk; Leith (2005) remarks that investors perceived low risk of time-inconsistent policies, a perception funded in the large political majority achieved by the BDP, which deterred a "winner takes all" behavior because, after all the party will remain in the power. In exchange for this favorable climate, investors were more prone to do long-term investments and to reinvest their revenues, which were essential for the construction of modern infrastructure in Botswana. FDI played an important role in Botswana's economic performance (Leith, 2005).

22 As Leith (2005) mentions this Plans were inherited from the last years of the Bechuanaland Protectorate when, in order to receive aid from Great Britain a detailed plan of the way in which this aid was going to be used must be submitted.

The most remarkable example of these long-term ties between the government and foreign investors, as pointed by Tsie (1996), Acemoglu et al. (2003) and Martin (2008), is the joint-venture that took place between De Beers and Bostwana's government over Debswana, company in charge of the Botswana's diamond exploitation.[23, 24] This relation with De Beers was quite favorable both for the private investors and the government. De Beers perceived a higher level of protection due to the joint participation of the government in the company, increasing its incentives to assume the initial costs of exploration given the lower probability of expropriation (Martin, 2008). As to the government, on the one hand it had access to one half of Debswana's revenues, allowing it to finance its investment in physical and human capital (Leith, 2005), key factors on the positive economic performance during 1970s and 1980s. On the other hand, the government took advantage of De Beers' expertise in the diamonds market and its ability to sustain a favorable price, due to its market power (Martin 2008). Botswana's production was completely marketed through De Beers' sales filial, Central Selling Organization, which controls the majority of the diamonds' sales around the world (Ghemawat and Lenk, 1990; Modise, 2000).

2. Mining

One of the most remarkable features of Botswana is the importance that diamond exploitation acquired. However, at independence Botswana did not export any diamonds at all; in fact, diamond mining did not start until the early 1970s (Modise, 2000). During the 1970s Botswana experienced a rapid transformation of its economic structure (see Figure 3 in A2). As Leith (2005) remarks Botswana was an agricultural (ranching) state at the beginning of the 1970s, and by the end of that decade mining was the second largest sector in the economy, and this trend continued during the 1980s. This impressive transformation was a central element in Botswana's economic performance.

23 Since its establishment in 1888, De Beers largely controlled the world supply of diamonds. Ghemawat and Lenk (1990)

24 Debswana stands for: De Beers Botswana Mining Company. Botswana's government owns half of the company and DeBeers owns the other half.

The first great mineral finding occurred in 1967, when De Beer's geologists found the Orapa Kimberlite pipe.[25] "The Botswana government signed a joint-venture agreement with De Beers creating... Debswana. Under this agreement De Beers started up the Orapa mine in 1971 and continue to operate it on Behalf of the government" (Ghemawat and Lenk 1990, p. 3). Another major finding, which marked the role of Botswana as one of the major diamond exporters in the world market was the opening of the Jwaneng mine in 1982 (Ghemawat and Lenk, 1990; Modise, 2000); as an scholar points out "The commissioning of the Jwaneng diamond mine in 1982 further reinforced this structural change in Botswana's economy from one dominated by beef exports to a diamond-dependent one" (Tsie, 1996, p. 599).

Those great findings would trace the path for Botswana to become a main participant in diamond's world market. Between 1981 and 1982 Botswana's diamond output increased by more than a 50%. Diamond's production in Botswana grew from 2.4 million carats in 1976 to 10.9 million carats in 1983. This impressive growth in diamond's production was achieved through the massive De Beers' investments in Orapa and Jwaneng mining complexes (Curry, 1987). Nonetheless, these investments proved to be more than effective. Indeed, by 1982 Botswana's diamond mines were among the most productive in the world: $10 dollars per carat in 1982, against $20 and $98 dollars per carat in South Africa and Namibia respectively (Ghemawat and Lenk, 1990). At the core of the mineral riches–development relation, was the Mine and Mineral Act of 1967. Proposed by Mr Khama, this act guaranteed the rights of the Central Government on the subsoil mineral resources. This "crucial decision" as labeled by Acemoglu et al. (2003), demonstrates Khama's interest in general progress; before the act mineral riches were entitled to the tribe than owned the land, and despite fact that the Bangwato tribe, of which Khama was the chief, owned the richest mineral lands, he opted to transfer the ownership of mineral sources to the central government. Leith (2005) remarks that Khama chose to use mineral revenues for national purposes; the ownership of mineral riches allowed the government to finance investment in physical and human capital (quite scarce by the time of Botswana's independence).

25 Kimberlite pipes are the main source of mined diamonds. Diamonds in this kind of mines are embedded in Kimberlite rocks.

In order to obtain revenues from mineral activity, Botswana's government opted for an alternative to the "common" royalties' model (Leith, 2005). Even though, companies have to pay a royalty for exploitation rights, and to pay a tax according to their revenues. Government decided to have a more direct participation in mineral activity through its joint-venture with the private sector, Debswana. This participation as owner, allowed the Government to have a firsthand control of private initiatives, that otherwise may deter transfers from private to public hands (Curry, 1987). According to Ghemawat and Lenk (1990), 20% of Debswana's revenues were directed to Operating Costs, 25% to De Beers and 55% to Botswana's government. This combined model of taxation and participation, proved to be successful manly because a long-run relation between private investors and government was build, allowing the reinvestment and redistribution of mining revenues which, all in all is the way in which mineral richness was translated into economic prosperity.

Joint participation, continuous private investments and mineral richness well above expectations, improved government's bargaining power, and thus its ability to obtain fiscal revenues from the mineral activity (Curry, 1987). As Hill (1991) states, the government had two main sources of revenues, custom revenues and mineral revenues. These mining revenues came mainly from the diamond exploitation, through the long-term agreements with De Beers. According to Curry (1987), by 1982 mineral production represented around 40% of the GDP, twice as large as its relative value four years before. By the mid-1980s mineral revenues represented almost a half of the total fiscal revenues and this trend continued during the 1990s.

Acemoglu et al. (2003) highlight that the existence of institutions that respect and protect the property rights, as well as the low levels of corruption in Botswana, were quite important in the process of reinvestment of the revenues obtained from mineral exploitation. The massive reduction of illiteracy and poverty rates would have never been achieved if mineral revenues were predated. According to the UNDP (2005), Botswana's government has a decided position toward the utilization of mineral revenues in human capital formation, infrastructure development, and diversification of economic activity. At independence Botswana had 7 kilometers of paved roads, in contrast to the 6,872 kilometers in 2002; life expectancy at birth in 1966 was 46 years, it increased to 67.5 years in 1999; under-five child mortality decreased from

15% in 1981 to 5% in 1997; net enrollment rate grew from 42% in 1971 to 98% in 1997 (UNDP, 2005).

Even though mineral riches played a key role in the development of Botswana, resources have been often identified as a curse for most of the Sub-Saharan countries.[26] This means that what appears to be a particularly positive initial endowment results in an unmanageable burden. Those countries that find out how to exploit the possibilities allowed by this richness seem to be the exception rather than the rule in the developing world.

Botswana's case turned out to be a resource blessing (or a Miracle) for the mixing of two causes: good luck and good institutions. Good luck, as stated by Leith (2005), firstly because of the nature of the diamonds that are founded in Botswana, diamonds there (and in the rest of Southern Africa) are embedded in Kimberlite rocks, thus a huge extractive infrastructure is needed in order to exploit the Kimberlite pipes. This eases the state control over the mineral activity, the legality of it and the transfer of revenues from the extractors to the government; contrary to the alluvial exploitation of diamonds, which is done in small scale and it is hardly regulated. The exploitation of the alluvial sources can be easily controlled by illegal armed groups, and that is why this type of diamonds are sadly known for being the financial muscle of several conflicts in Central Africa (e.g. Angola, Democratic Republic of Congo, and Sierra Leone).

Nonetheless, the need of a huge extractive infrastructure does not assure a successful management of resource wealth, oil extraction is highly capital-intensive and some of the largest producers in Africa were or are embedded in large civil conflicts, and remain poor in terms of infrastructure and human capital (e.g. Nigeria, Angola in particular the separatist region of Cabinda, and Sudan). Here appears the other element of the equation the good institutions, as Mehlum et al. (2006) and Boschini, Petterson and Roine (2007) remark, a resource curse can be reverted through high quality institutions. An institutional framework devoted to the protection of property rights, inherited from the pre-colonial institutions, favored the presence of foreign investors decided to maintain long-run investments, and allowed the existence of a healthy rela-

26 Gylfason, 2001; Gylfason and Zoega, 2002; Sachs and Warner, 1995b, 1999, 2001; for the particular case of Botswana: Martin, 2008; and Mikesell, 1997 for the case of mineral rich countries.

tion between the government and the private entrepreneurs.[27] Without the adequate legal enforcement of property rights, foreign investors would never emplace such impressive extraction complexes in Botswana, and much of its richness would probably be underexploited (Boschini et al., 2007). Moreover, the institutional framework also limited the type of relationships that could arise between private investors and government officials. Corruption and bribing was less spread than in other Sub-Saharan countries; instead, a long-run relationship with between the parties was established. This healthy behavior was encouraged by the amazing richness of the subsoil, which guaranteed revenues over a very long time horizon.

In addition to the protection of property rights, Mr Khama's leadership allowed for the redistribution of mineral revenues in the form of public expenditure. As part of his agenda, first he ensured the property of the subsoil richness to the Central Government, and then devoted the mineral revenues to improve the country's infrastructure, access to education, and health. It is clear that the institutional framework was a necessary condition for Botswana's impressive mineral-guided progress that turned it into an Economic Miracle.

3. Trade Policy

The SACU was established at the beginning of the 20th century, well before Botswana's independence, between South Africa and the British High Commission Territories (which included the Bechuanaland protectorate, current Botswana). After Botswana's, Lesotho's, and Swaziland's independence, SACU terms were renegotiated in 1969 with South Africa in order to favor the three smaller and least developed members of this union. Renegotiation of SACU terms allowed Botswana to obtain a more share of the revenues from imports' tariffs, and thus accelerate its "economic" independence from the Great Britain, that during the first decade of independence provided a good amount of the fiscal revenues in the form of foreign aid (Leith, 2005; Tsie 1996). As remarked by Hill (1991) joint to mineral revenues, customs revenues were one of the largest sources of public income, and mineral activity had a positive impact on customs revenues, a great deal of capital goods had to be imported for mineral exploitation. According to Curry's (1987) data around 25% of fiscal revenues during the first half of the 1980s came from customs revenues.

27 For more details: Acemoglu et al., 2003 and Robinson, 2009.

As South Africa maintained the control of the SACU until the mid-1990s, Botswana's government had no saying on its own tariffs, this implied that it lacked of the necessary power to protect the local industry, which somehow avoided the implementation of an Imports Substitution Industrialization (Leith, 2005). Nonetheless, the local manufacturing industry remained underdeveloped, mainly because of the high competitiveness of the neighboring industries and the appreciation of the Pula against the South African Rand (Taylor, 2002).

Besides fiscal revenues, Botswana's Trade Policy left two important outcomes. First, in 1975 an agreement that covered beef exports to Europe was achieved, allowing the entry to Europe of beef from Botswana at a favorable tariff. This agreement fostered beef exports to Europe, favoring must of the rural population, which were almost exclusively devoted to ranching, this included both large cattle owners and humble peasants. Second, as a member of the Customs Union, Botswana has the right to move its merchandise freely through the whole territory of the Union allowing it to access the coast, which in some degree helped to diminish the negative geographical condition of being landlocked (Leith, 2005).

By the mid 1980's diamonds already represented around a half of Botswana's exports (Curry, 1987). Other success of Botswana's Trade Policy was the agreement on the commercialization of these diamonds. The government and De Beers agreed for all the diamond production to be bought by the Central Selling Office (CSO), De Beers' distribution branch. This agreement favored the government since it took advantage of De Beers' large expertise in the diamond market, and also allowed it to obtain rents from the market power exerted the CSO (Ghemawat and Lenk, 1990; Leith, 2005).

C. Final Remarks on Botswana – The Fundamental Role of Institutions

Even though, Political Stability, Mining, and Trade Policy may be highlighted as the visible (proximate) causes of Botswana's economic success, underneath them, the institutional framework played a fundamental role in the design and implementation of a sound developmental strategy. Where do these good institutions come from? Botswana had the fortune of inheriting pre-colonial tribal institutions in which the definition and protection of property rights

were at core of the personal relations. These tribal institutions largely survived the British protectorate, and thus after independence the Mr Khama's government was a relentless defender of the market economy, and thus of the adequate definition and protection of private property. Protection of private property and the rule of law proved to be central for Botswana to be able to transform its riches in the ground into actual productive public goods (Acemoglu et al., 2003; Robinson, 2009).

The functioning of the government also exhibits an inheritance from Twsana's institutions, in its accountability and consensus-seeking decision process. Back in the pre-colonial times, each tribe had a *kgotla*, a sort of a local council where "public policies" were presented and debated. According to Samatar (1997) and Tiruneh (2004), the *kgotlas* constituted the highest consultation body in the country, and even though the Kgosi (king) had the power to impose policies at his own will, the existence of the *kgotlas* created the necessity to achieve popular acceptance before policy implementation; "whenever the king ignored the advice of the kgotla, he ran the risk of being assassinated, overthrown, or banished" (p. 19).

This institution proved to be important in two, almost contradictory, dimensions. First, it created a sense of pluralism and transparency which turned out to be highly significant for the establishment of a system of checks and balances (Carroll and Carroll, 1997). After independence the *kgotlas* were replaced with actual councils that acted as overseers of central government's policies. The government's seek for consensus became a convention; policies were usually debated among several ministries and widely presented to the public in order to obtain a more pluralistic, objective, and popular outcome (Samatar, 1997; Leith, 2005). This limited the possibilities for a rapacious behavior, and therefore allowed for a better allocation of the revenues from the mineral sector. Second, even though the *kgotlas* were supposed to be open to every male adult, they were largely controlled by the economic elites (i.e. large cattle owners) Tiruneh (2004), and this created a highly stratified society. However, the interests of the domestic elite and their future political capital (the peasants) were aligned due to its common economic activity. The protection of large-scale ranching also turned out to be the fundamental common ground between the local elites and the colonial rulers. This, together with the lack of British interest in an active management of the protectorate (Beaulier, 2003), largely insured the survival of the social interactions created by the

pre-colonial institutions (Good, 1992). In the end this stratification and interest alignment facilitated a smooth transition towards independence and explains why the BDP's dominance of the political scenario was strongly rooted on its rural popularity.

A final feature of the inherited institutions was the attitude towards saving. Victim of crude and long-lasting droughts, Twsana people learnt that during prosperous times a portion of the output must be saved for the less favorable times (Leith, 2005), similarly to what happens in countries with seasons (Zuleta, 2008). This attitude, together with the accountability exercised by the British government over the financial aid offered during the first years after independence, evolved into a long-term planning of fiscal expenditures. This helped to maintain the expenditure fixed and devoted to developmental projects. Furthermore, government savings during exports booms served as a macroeconomic stabilizer, as Hill (1991) points out, Botswana's government used unexpected revenues from mining booms to accumulate international reserves, instead of using it for additional non-productive public expenditure, minimizing the opportunities for rent-seeking. This policy helped to avoid the exchange rate appreciation, a typical symptom of the Dutch Disease, and thus it helped to protect the exporting sector. This stands in stark contrast to the experience of some large oil producers in Africa (e.g. Nigeria, Equatorial Guinea, and Angola).

However, as may be inferred from president Ian Khama's latest inauguration, *Diamonds are not forever*.[28] Botswana still has three serious –related–challenges for the future: *i)* diversify its diamond dependent economy; *ii)* reduce the high levels of unemployment, currently above the 17% according to World Bank; and *iii)* reduce economic inequality. As pointed out in the World Bank's country overview, despite the good track of democratic performance, economic inequality Botswana is among the highest in the world.[29] In spite of the efforts to promote other sectors beside the mineral one, diversification still remains incipient in Botswana (Good, 2005). As mineral exploitation is capital intensive, the capacity to generate employment, in particular for the growing urban working class, remains quite limited. The government has been trying to promote small-scale entrepreneurship through developmental banks. However,

28 The Economist, October 24, 2009.

29 http://www.worldbank.org/en/country/botswana/overview.

this policy has been far from successful, and as highlighted by Martin (2008) there is still a need for the redistribution of mineral riches among the whole population. At this point it seems like Botswana has profited from the short-run benefits of economic inequality on growth. However, if in the coming years this inequality is not effectively combated, the negative long-run effects of economic inequality would continue to act (e.g. low incentives for the accumulation of human capital), posing a serious drag on future economic performance (Halter, Oechslin, and Zweimüller, 2011).

IV. Singapore – The Lion City[30]

Singapore is one of the most highlighted cases of economic success during the second half of the last century. Regardless of its minuscule area, 710 km^2, and the complete absence of natural resources, Singapore managed to transform its economy into one of the most powerful and modern systems of the world. Geographically, Singapore took advantage of its position that, in addition to its size and the fact that it is an island, created a complete dependency on the rest of the world, proof of this is that even water must be imported.

Singapore experienced an amazing progress from a middle income economy to a rich one, according to Maddison's (2008) dataset, in 1970 Singapore's RGDP per capita ranked 39 of 140 with a value of $4,439 (1990 US dollars), by 1990 its RGDP per capita grew 220% reaching a value of $14,220 occupying the 18th place in the sample. At 2006 Singapore had the 5th largest RGDP per capita of the world.

Behind this impressive performance I identify three visible causes: *i)* the Political Stability; *ii)* the Economic Transformation; and *iii)* Openness. As in the case of Botswana, Singapore has a major ruling party the People's Action Party (PAP), which since independence has obtained the majority of the sits in the parliament (Haas, 1999). This situation, allowed the continuity of developmental and transforming policies, and strengthened investors' confidence since the PAP's regime demonstrated a full commitment with the protection of the property rights, and enhanced the private initiative. Again, stability of political institutions devoted to the enforcement of private property demonstrated

30 This is the translation of Singapura, the original (Malayan) name of the island.

to be central for the attraction of foreign capital. Singapore also experienced a notable Economic Transformation, from a raw labor intensive manufacturing economy with high unemployment rates in the mid 1960's, to a developed services center by the 1980's, with an intensive use of both physical and human capital. Its production path moved from manufactured merchandises with a low level of value-added, to the production of technological goods (e.g. microchips, electronics) and services, which off course involve a higher level of value-added. Finally as stated by Rumbaugh (1995), Singapore may be labeled as a free trade regime, not only because of the free flow of merchandise and services, but also because of the low level of restrictions on capital flows. Its open position toward trade both inwards and outwards is related to the fact that imports are necessary for this island without natural resources and scarce land, while exports are essential to develop the economic apparatus when domestic market is minute. On top of the low barriers to trade, and given that a remarkable portion of its development relayed on FDI, Singapore facilitated the free flow of capital. Hand in hand with its Economic Transformation its exporting path evolved from simple re-exports to exports of services and high-technology goods.

All three main causes are linked through the attraction of foreign capital. Political Stability and Openness set the proper environment for the arrival of international capitals. While Economic Transformation and rapid expansion of exports, would never be achieved in the absence of the financial muscle provided by the foreign investors. In the following I provide an outlook of the economic environment of the Singapore's Miracle, and then I will come back to explore the importance of each of these three visible causes.

A. Singapore's Economic Context

Along its prosperity process (See Figure 1 in Appendix 3 (A3)) Singapore achieved a more than satisfactory level of macroeconomic stability. Inflation always exhibited very low levels, with an average annual change in the CPI of 3.3% between 1961 and 1995, as shown by Figure 2 in A3. This demonstrates that the Monetary Authority of Singapore (MAS) so far succeeded in its main objective: maintaining a low and stable level of inflation. According to Barro (1996) this low level of inflation may have a positive impact on economic growth in the long-run.

During this prosperity and price stability period Singapore also experienced an important Economic Transformation. As van Elkan (1995) presents, during the 1970's and 1980's Singapore moved its production to activities with higher value-added levels, which implied the more intensive utilization of human and physical capital. As shown in Figure 3 in A3 from the mid 1970's the Services sector presented an increasing participation in Singapore's GDP. Moreover, this sector has had the largest participation in the economy, always above the 60% of the total production. In particular, Singapore emerged as an international financial center, due to the government policies toward the attraction of foreign capital, and the general favorable climate for investment. As a result, the supply of several financial and business services increased during the last stages of Singapore's development at the 1980s.

Capital inflows are at the core of Singapore's splendid economic performance and Economic Transformation. The Singaporean government was able to attract capital, and to use it for the rapid Economic Transformation and development of the country. As an outcome gross capital formation as GDP percentage rose steadily from 10% at the beginning of the 1960s to a peak level of 50% by the mid-1980s, and after the 1986 crisis it stabilized around 35% (See Figure 4 in A3).

The high level of investment allowed to transform the economic apparatus, providing the possibility to participate in more capital intensive activities with higher value-added. This capital-led industrialization brought Singapore's exports to a new level. Singapore's exports evolved from re-exports to exports of oil derivates and then to manufactures of a high technological value and services that embedded a large participation of human capital. According to the World Bank's WDI, between 1989 and 1999 High-technology exports as percentage of the total manufactured exports grew steadily from 36% to 60%. As result of this transformation, in addition to the export promotion policy, external balance on goods and services grew continuously from a 20% of the GDP deficit at the mid-1970s to a 20% surplus 20 years later (See Figure 5 in A3). Singapore's reliance on foreign trade is evident when total trade as percentage of GDP is explored. According to Heston et al. (2009) data, by 1965 total trade as percentage of the GDP was 210%, since then it rose rapidly and steadily, by 1980 it was 400% of the GDP then it reduced to 300% by the mid-1980s due to the slowdown of the world economy, and by the beginning of the 2000s it reached again its level of 1980 (See Figure 6 in A3).

Finally in relation to the population, Singapore experienced a favorable demographic transition, in which its WAP increased in relation to the rest of the population, as presented by the dependency index in Figure 7 in A3. Since the mid-1960s, the WAP grew steadily in relation to the rest of the population, causing a fall in the dependency index from 0.85 in 1965 beneath 0.4 at the beginning of the 1990s. This rapid and strong change in Singapore's demography arguably had a positive effect on economic growth through two main channels: on the one hand as the dependency index decreases average productivity of the labor input increases (Bloom and Williamson, 1998); on the other hand, during this kind of demographic transition the savings rate is expected to grow under the Life-Cycle Hypothesis; Husain (1995) finds empirical evidence that supports the positive impact of the demographic transition on the private saving rate in Singapore. In addition to this favorable change in the population structure, Singapore's development was also fostered by an improvement in its human capital, according to Barro and Lee (2000) data, by 1960 a 61% of the total population over 25 was unschooled, and by 1995 this percentage was reduced to 14%.

From this review of Singapore's macro-indicators we can derive the following conclusions about its economic context: *i)* monetary stability was achieved, in fact inflation has always been quite low; *ii)* very high levels of capital investment were accomplished, having an impact on Singapore's Economic Transformation and exports' composition; *iii)*; trade has a central role for Singapore's economy, and a positive external balance was achieved through the increase in the exports' value-added; *iv)* as in the case of Botswana, Singapore experienced a demographic transition favorable to foster economic growth and a rapid reduction in the percentage of unschooled population.

B. Singapore's Keys for the "Miracle"

1. Political Stability

Singapore is young nation, autonomous from the British rule since 1959 year in which Lee Kuan Yew, Singapore's renowned leader, was appointed as prime minister. Since that year and until now the People's Action Party (PAP), Mr Lee's party, dominated every parliamentary election. However, transition to independency was far more complex than in the case of Botswana. Complexity of Singapore's independence was rooted in the PAP's prerogative of merg-

ing Singapore with Malaysia. The rationale for this premise was to expand the domestic market and improve the access to resources. The merger had a large popular acceptance; in 1962 the referendum over Lee's proposal for the merger was supported by the majority of Singaporeans. In 1963 The Federation of Malaysia was officially established with Singapore as one of its states. Nonetheless, Singapore obtained very little political representation in the Federation and its economic development was not at the top of the agenda, as it was for the PAP. This feeling of marginalization of Singapore's priorities led to an increase in the political tensions between the Malayan government and Singaporeans leaders, and Singapore was finally expelled from the Federation in 1965 (Haas, 1999).

As political climate stabilized, and the PAP's dominance and position toward economic development strengthened, Singapore's regime gained credibility and confidence among foreign investors.[31] By the end of the 1960s, and due to the PAP's ability to guarantee the continuation of its policies in favor of the private initiative and of the protection of property rights, FDI inflows started to rise.

As stated by Neher (1999), the PAP's popular support was grounded in its role during independence from the British rule, and also in the government's capacity to maintain a successful developmental path which translated into economic prosperity for Singaporean population. As mentioned by this author, PAP's total dominance of the parliament was not judged by the common Singaporean, since the state demonstrated an impressive ability to satisfy Singaporeans' needs.

The PAP not only succeeded in improving the life standard of the common Singaporean, but more importantly for its consolidation as Singapore's single ruling party, it was able to generate a broad consensus around the idea that individual liberties, including the possibility to chose among different parties, are less important than common welfare and generalized economic prosperity.

This preponderance of common interest over individual needs, at the core of the party's and civil population beliefs, is grounded in Lee Kuan Yew's "Asian Values" ideology. Asian Values are defined as an alternative to what Mr Lee

31 All the seats of the 1968 parliamentary elections were won by the PAP, Haas (1999).

labeled as Western Values, which in his view were not suitable for Singapore's context: "The West is viewed as having too much democracy, resulting in chaos, licentiousness, and lack of respect for societal needs" (Neher 1999, p. 47). Mr Lee's Asian Values are of central importance for the maintenance of the PAP as Singapore's unique ruling party: "As such, the AV (Asian Values) project's ability to secure citizen's co-opepation in de-legitimizing ideological alternatives and preventing social fragmentation in the name of communitarianism makes it a social technology par excellence for the sustaining of one-party ideological dominance" (Sim 2001, p. 64). Mr Lee's capability to embed these values into a mixed society, and his direct association with the independence from the British rule and the separation from Malaysia to create an independent nation, elevated him to the quality of Singapore's father.[32] His leadership and his strong belief in the incorruptibility of the civil servant allowed him to stay in the charge of Prime Minister from 1959 to 1990. Mr Lee is recognized for his support for a meritocratic and transparent civil service, as well as for his commitment to the capitalistic development of the economy. It is impossible to unlink Mr Lee's role as Prime Minister and Singapore's development, as under his command the island achieved one of the highest rates of economic growth in the world.

Singapore is not exactly the best example of a democracy; in fact, its case is cited as a frustrating one by Chua (1994) since great economic performance was not accompanied by democratization. However, the constant improvement in Singaporeans' material welfare legitimized the PAP's hegemony and Mr Lee's extended service as Prime Minister. Moreover, popular acceptance of PAP's domination allowed the government to have a severe intervention in Singapore's economic system, leading it through several phases of development from a simple *entrepôt* to an active financial and business center, and to give continuity to its development plan.

Attracting overseas capital was absolutely important for the transformation of the economic apparatus thus, the Singaporean government intervention always had a positive impact on the protection of the foreign investors' interests. During all the phases of development the government has intervened in the labor market. During the first stages of development, in order to attract for-

32 According to Haas (1999) Singapore's multiethnic population has three main ethnic groups: Chinese (77%), Malays (15%) and Indians (6%).

eign investors to foster the industrialization process and to reduce the unemployment, labor costs were kept low and trade unions were heavily monitored. In 1968, the Employment Act and the Industrial Relations Act were introduced to limit the workers' bargaining power, and as consequence the firms did not have to deal with expensive labor and strong trade unions (Grice and Drakakis-Smith, 1985; Lam, 2000; van Elkan, 1995). This intervention proved to be successful not only to attract foreign investment to foster the industrialization process, but also to significantly reduce the unemployment rate.

However, as new "cheap labor" centers emerged in South East Asia, the Singaporean government had to change the developmental strategy in order to maintain its competitive advantage in the attraction of foreign capital. By the mid-1970s, the government decided to promote investment in activities that were more intensive in the use of technology (van Elkan, 1995). As a response to the increasing demand of skilled workers, that rose as a consequence of the emergence of these activities with higher value-added, the government also incentivized human capital investments. With this purpose it granted financial incentives to the firms that invested in workers' training, and the National Wages Council devised a new wage structure that rewarded investments in human capital (Grice and Drakakis-Smith, 1985).[33] This new phase in Singapore's development which lasted until the beginning of the 1990s, resulted highly successful and is clearly the best-known part of its economic success, as affirmed by Neher (1999) it was the outcome of a perfect match between human capital and foreign investment.

Besides intervening in the labor market to direct it in the same way of its developmental path, the Singaporean government made another major intervention in the economy by the creation of the Central Provident Fund (CPF), which is a mandatory pension scheme and described as "... the greatest element of government control over the economy" (Lingle and Wickman 1999, p. 68). The CPF was established in 1955, and started with mandatory contribution rates over the wage of 5% by the employees and 5% by the employers. These rates increased steadily between 1968 and 1984 reaching a maximum rate of 25% by both the employee and the employer. After the 1986 crisis the employers' rate was cut to 10%, then this rate was gradually increased and by

33 The NWC is in charge of producing the wage guidelines for the government intervention in the labor market.

the beginning of the 1990s it was over 18%. Contributions from both employers and employees amounted to 40% of the wage by then. The impact of this over private savings was huge, as savings through the CPF were a 50% of the total private savings by the mid-1980s (Husain, 1995). This program might explain why Singapore exhibits one of the highest savings rates in the world. For instance, according to the IMF data, during the 1980s Singapore had an average savings rate of around 40% of the GNP, against the 32% of Japan.

2. Economic Transformation

According to van Elkan (1995), Singapore's development could be separated into 4 phases, from its beginning dedicated to the *entrepôt* trade, to the vibrant business and financial services center of the 1990s. In the following I stick to her 4-phases timing of Singapore's development. These phases are: *i)* Import-Substitution Policies (1959-1965); *ii)* Export Orientation (1966-1973); *iii)* Industrial Restructuring (1973-1984); *iv)* Economic Diversification (1985-).

The first phase was characterized by the need to abate unemployment and to replace its declining *entrepôt* trade activities due to the emergence of direct trade routes between East and West. Besides the positive shock in the size of the local market derived from the merger with Malaysia, the industrialization process was directly supported by the government with the implementation of fiscal incentives to labor-intensive firms. These incentives were granted under the Pioneer Industries Ordinance and the Industrial Expansion Ordinance introduced in 1959. Along with the fiscal incentives, at the beginning of 1960s the government decided to raise the tariffs and impose quotas to imports in order to protect local industry and new investors from foreign competition. In order, to coordinate its industrial policy the Economic Development Board (EDB) was established in 1961 (van Elkan, 1995).

However, separation from Malaysia in 1965 and the withdrawal of British troops still emplaced in Singapore had a great impact over Singaporean economy, caused by the reduction of its local market. As a consequence, the import substitution strategy resulted insufficient to promote industry and to reduce the two digits levels of unemployment. Thus, in the mid-1960s a new phase in the development process started with the re-orientation of production to rest of the world: the phase of export oriented industrialization began. One of the most sounded policies followed to promote exports were the fiscal

incentives to exports introduced in 1967, these incentives consisted in providing 90% tax exemptions for export profits (Young, 1992).[34] "In principle, these (fiscal) incentives do not discriminate between domestic and foreign investors. In practice, because they are usually linked to sizable investments involving advanced technologies in new (targeted) industries, the overwhelming majority of participants are foreign" (Young 1992, p. 23). Thus, most of the firms devoted to produce only for the local market ceased to exist as tariff and quotas were removed; in the meantime, a large amount of foreign investment attracted by the new industrial policy arrived to Singapore.

Besides the "directed" fiscal incentives, a clear government position towards the labor market reinforced the strategy to attract the foreign investment necessary to promote the export oriented industrialization, and to drive this capital to labor-intensive activities in order to tackle the high unemployment rate. This stage of Singapore's development forced the government to commit with the provision of a "cheap" and stable labor force (Kuruvilla, 1996). Government intervention to drive foreign investment into labor-intensive activities was a natural reaction to the needs of the moment: by the mid-1960s Singapore had a high rate of unemployment, with a growing labor force as female participation increased, and there was an abundance of unskilled labor (Carling, 1995).

This stage of development generated positive results in two levels. First, the government succeeded in the attraction of foreign investment, by promoting Singapore as a country with a unique location, good infrastructure and low wages (van Elkan, 1995). "Foreign direct investment in manufacturing, which averaged less than S$30 million per annum during 1960-1965, and only S$73 million during 1966-1967, reached S$151 million in 1968, S$708 million in 1972" (Young, 1992, p. 23), which evidently had a major impact over Singapore's export activities. Second, the expansion of manufacturing in particular in electronics, ship repair, petroleum refining, and textiles absorbed much of the unemployment.[35] According to Young (1992) employment in the textile sector grew by more than 50% between 1971 and 1973. In this sense, the export oriented industrialization was so successful, that workers started to be

34 According to van Elkan (1995), this reduction was granted under the Economic Expansion Incentives Act, which reduced the corporate tax rate from 40 to 4 percent, for selected exporters.

35 These sectors were particularly favored by the new industrial policy (van Elkan, 1995).

scarce and wages began to rise. In fact, the government had to attract foreign workers to satisfy the demand; by 1970 nonresident workers accounted for an 11% of the labor force (van Elkan, 1995).

As wages increased in Singapore and new "cheap" labor centers appeared in South East Asia, the Singaporean government adopted a new turn in its developmental strategy. Given that unemployment was already abated, two new (interconnected) priorities seemed to appear in the developmental agenda.

First, the emergence of other South East Asian countries with low cost of labor, at the same time that Singapore experienced an increase of its wage and a shortage of raw labor, forced the government to steer its labor market strategy ("cheap" work force). Second, little technological advance was achieved in the preceding stages; thus, Singapore had to promote the presence of foreign investment directed to technology and human capital intensive activities, and take advantage of this by achieving a technological catch-up.

This stage could be considered as Singapore's transition from a low wage and low value added manufacturing center, to a technological business and financial services exporter. As described by van Elkan (1995), the government established tax incentives both to firms that were involved in high-technology activities, which were more –physical and human– capital intensive. The government promoted the investment in new technologies, as well as the participation of firms in the training of workers. Joint (public-private) training centers were established to meet the increasing demand of skilled workers.

According to Carling (1995) three labor market policies were introduced to match the industrial modernization: *i)* the NWC recommended an increase in wages above productivity, and the employers' contribution to the CPF was increased; as the relative cost of labor increased, firms had incentives to use capital instead of labor. "... average earnings in manufacturing rose by 81 per cent between 1978 and 1982, giving in turn an additional incentive for firms to substitute capital for labor, particularly in the fields of advanced technology" (Grice and Drakakis-Smith 1985, p. 56). *ii)* As described above, the government promoted an improvement in workers skills. The Skills Development Fund was established to finance training centers and on the job training. *iii)* The government announced that by 1984 demand of non-Malaysian unskilled foreign labor would be finished.

This resolute position towards the transformation of economic activity, the "second industrial revolution" as labeled by the government, had impressive results: Between 1980 and 1981 the value-added per worker increased by 85% (Grice and Drakakis-Smith, 1985); by 1980 Singapore did not produce any computer's component, three years later it was the largest exporter of disk drives in the world (Young, 1992).

After this rapid change in the economy, with a great impact on the labor supply, Singapore arrived to its final stage of development: a diversification of its economic activity. High levels of human capital allowed Singapore to participate in activities with even higher value-added, the business and financial services, without abandoning its participation in the high-tech industry.

In order to allocate foreign capital in correspondence to each country's characteristics, the Johor-Riau-Singapore growth triangle, a joint initiative with Malaysia and Indonesia was established in 1989. The idea behind this was that firms established their labor-intensive activities in places with lower wages (Malaysia and Indonesia) while human capital intensive activities, i.e. the headquarters, were established in Singapore. "The basic advantage is that Singapore contributes capital, transport and logistic facilities, whereas Indonesia and Malaysia contribute abundant and cheap labor and land." (Lingle and Wickman, 1999, p. 61). Again the fiscal incentives strategy was used, tax reliefs were emplaced to attract headquarters operations in Singapore.

This agreement also marked a general change Singapore's position towards foreign investment, since the government was no longer focused only in the inflows, but also started to intervene in the direction of the outflows. Local firms were incentivized to establish their operations abroad, outflows of direct investment grew from S$2.2 million in 1976 to S$14.2 million in 1989 (van Elkan, 1995). Nonetheless inflows of FDI continued to grow, according to Lingle and Wickman (1999), by 1994 it accounted for S$4.3 billion against the S$2.5 billion of 1985.

Since its independence Singapore experienced a considerable transformation of its economic activity. In particular the 1970s and 1980s witnessed one of the most rapid changes around the world. This transformation was clearly and very well directed by the government, with interventions in the labor market, and by providing fiscal incentives and protection to foreign investors. How-

ever, after the recession of the mid 1980s interventions in the labor market were reduced, as these seemed to have some distortive effects on labor allocation and might being responsible for the negative impact on inflation (Carling, 1995; Lam, 2000; Young, 1992).

3. Openness

As stated by Rumbaugh (1995) Singapore is an open regime, not only for its pro-free trade position and export-led development, but also for the low level of restrictions on the capital account, that allowed it to attract the necessary inflows of foreign capital to perform its industrial change. As economic transformation took place during the 1970s and 1980s, Singapore also transformed the nature of its exports allowing it to develop its trade from simple re-exporting to high value-added and technologically intensive exports.

This rapid transformation on its exporting path is reflected in the facts that: *i)* its external balance on goods and services increased steadily from a 20% deficit in 1970 to a 15% surplus by the mid-1990s (WDI); *ii)* according to the IMF data, in 1970 60% of Singapore's exports were related with oil refinement and 10% were Machinery and Equipment, while by 1993 the former represented only the 20% and the latter the 60% of total exports; and *iii)* between 1989 and 1999 high-technology exports grew from 36% to 60% of the total exports of manufactured goods (WDI).

On the imports side, high dependency on international production after separation from Malaysia, forced Singapore to have a very low level of tariffs on imports, for instance, by 1967 the effective rate of protection for the manufacturing sector was just 6%, and by the beginning of the 1990s 96% of imports entered to Singapore free of any restriction, which makes it a true free trade regime (Rumbaugh, 1995). The obvious cause of this pro-free trade behavior is the small size of Singapore's internal market and its lack of natural resources. On the one hand, it is impossible to produce domestically the necessary goods and services to satisfy the internal demand, nowadays potable water has to be imported from Malaysia, and as stated by Lingle and Wickman (1999) Singapore is self-sufficient just in egg and poultry production. On the other hand, internal demand is not sufficient to sustain a competitive modern economic apparatus, thus for economic transformation to succeed Singapore's had to find foreign demanders for its production. The dependency on international

trade was fostered by the sudden reduction of internal market that separation from Malaysia in 1965 caused.

Besides maintaining low tariffs on imports, and promoting exports as discussed above, in the search for external markets, Singapore has had a very active participation in bounding ties with the rest of the world. Despite its tense relations with Malaysia by the time of the separation, Singapore managed to enter as founding member of ASEAN in 1967; however, the interaction with the neighbors remained relatively marginal until 1989 when Lee Kwan Yew launched the Johor-Riau-Singapore growth triangle.[36] This cooperation agreement allowed Malaysia and Indonesia to take advantage of Singapore's capital, and permitted Singapore to access Malaysia's and Indonesia's cheap labor, while the triangle itself had a favorable position as a link between East and West. Moreover, Singapore was also founding member of APEC in 1982, and in 1992 it was designated to host the Secretariat of this organization (Haas, 1999; Rumbaugh, 1995). Economic transformation and foreign policy also had an impact on the trade regional pattern (See Table A3 in Appendix 1). Even though from 1970 most of Singapore's trade has always being done with ASEAN countries, during the 1980s trade with the United States and Japan grew in importance, due to the exports of high-technology goods to these countries. Nonetheless, by the beginning of the 1990s trade with ASEAN countries gain participation again as the rest of the South East Asian economies became richer and started to import high value-added Singaporean goods and services (Rumbaugh, 1995).

Singapore's impressive levels of trade are evident when trade as percentage of GDP is calculated. According to Heston et al. (2009) since 1965 Singapore's trade has always being more than 200% of the GDP, and by 1980 it reached the 400%, then it reduced to 300% during the mid-1980s due to the world economic downturn, during the 1990s this percentage grew again and by 2003 it reached its 1980 level (See Figure 6 in A3). These relative levels of trade are result even more striking when compared with the rest of the countries, since 1974 Singapore has had the largest level openness in Heston

36 The other founding members were: Indonesia, Malaysia, the Philippines, and Thailand. Currently it has other five members: Brunei, Burma, Cambodia, Laos and Vietnam.

et al. (2009) sample, with the exception of 1983 and 1986 when it was second behind Iraq.[37]

Regarding the capital inflows Singapore adopted an open position towards foreign investment, at the same time that it guaranteed the protection of foreign investors' interests, in order to attract the necessary capital for its economic transformation and export-led development. In addition to the directed fiscal incentives, that promoted industrialization and exports in certain sectors dominated by foreign investors, as described in the previous subsection, "the government issued a solemn promise that no foreign company, under any pretext, would be nationalized" (Lingle and Wickman 1999, p. 65). The abolishment of restrictions to capital movements that took place at the end of the 1970s, respect for foreigners' property, and the directed tax reliefs, had a major impact on Singapore's inflows of Foreign Direct Investment (See Figure 8 in A3). By 1972 net inflows of FDI accounted for 5.5% of the GDP, the average FDI between 1972 and 1979 was 6% of the GDP, for the 1980s this average grew to 10% and for the 1990s it rose to 11.5%. Hence Singapore's strategy to attract foreign capital proved to be successful, not only for the increase in FDI, but also because the Singaporean government interventions in the labor market and its directed fiscal incentives drive foreign resources to those sectors that needed to be developed (Grice and Drakakis-Smith, 1985, Lam 2000; Young, 1992).

C. Final Remarks on Singapore – The Emergence of Good Institutions

During the second half of the last century Singapore achieved one of the most impressive economic performances in the world. This city-state that declared its independence from British rule to merge with Malaysia and a couple of years later was expelled from the Malaysian Federation, represented a clear case of government planned development within a market system. Despite the lack of own resources and the small size of its internal market, Singapore managed to rapidly transform its economy as few countries had ever done. It took advantage of its favorable location, to become one of the most if not the most important business and financial center of South East Asia.

37 Since 1960, Singapore was never ranked under the third place in the level of openness according to Heston et al. (2009) sample.

The central pillar of Singapore's rapid development has been its Political Stability. Political Stability let the government to intervene in several aspects of Singaporeans life and in its economy, allowing it to promote Singapore's Economic Transformation and the export-led development. Nevertheless, government intervention and policy continuity would never be achieved if: *i)* Singaporeans did not internalize the fact that personal interests are less important than the societal benefit, belief that is at the core of Lee's Asian Values (Lingle and Wickman, 1999; Neher, l999; Sim 2001); and *ii)* the developmental strategy did not bring the material welfare that legitimized the PAP's hegemony (Chua, 1994).

Of course political stability or more specifically, the continuous ruling of a unique party is not necessarily good. In fact, the lack of political competition might be interpreted as vice rather than as a virtue. Nevertheless, the PAP's continuous hegemony came hand in hand with sound policies devoted to implement a development plan based on the structural transformation of the economy, while the Asian Values provided an ideological background and served to legitimize the uncontested rule of the PAP (Barr, 2000).

An outstanding feature of the Singaporean case is that the institutional framework that fostered the emergence of a developmental state, instead of a kleptocratic one, is actually the consequence of the PAP's early policies, its strong identity, and its ability to present itself as a good successor in power for the British; it is therefore not so clear, that one can trace the strong commitment of the Singaporean government with the protection of property rights and the fight against corruption back to some pre-colonial or colonial heritage. This does not mean that the British rule did not leave its footprint on important constitutions such as the parliamentary character of the government. In fact, one of the most significant inheritances of the colonial times was the emergence of the post-war control apparatus through which the British tried to keep the Singaporean and Malayan anti-imperialist movements in line (Tremewan, 1991). This system of repression started by minimizing the role of trade unions and labor activists, as a way to maintain labor costs down so that the colonies remained as a steady source of income, so much needed by the weakened post-war British Empire. While the British opted for a direct oppression strategy in Malaysia, the city-state nature of Singapore called for a differ-

ent (less visible) approach. The strategy here was to handle the power to a domestic party that could on the one hand, limit the rise of left wing parties, in a more legitimate way than the direct intervention of colonial forces; and on the other hand, stand by the capitalist interest of the British (Tremewan, 1991). This unique independence opportunity was seized by Mr Lee's PAP, and it explains the party's commitment to the enforcement of property rights, as well as its ability to "command" a free market economy.

However, issues such as the all-out fight against corruption, championed by the mighty anti-corruption agency (Quah, 2001, 1995), and the strong commitment with the protection of property rights is an important part of the PAP's legacy. Moreover, the lack of any natural resources and of any significant means of production at the time of independence deterred the rise of a kleptocratic state; in other words, as there were no significant sources of taxation the emergence of a parasitic elite in the first place was less likely. Nevertheless, this does not fully explain why the state continuously opted for the promotion of efficiency as the economy developed (Hamilton-Hart, 2000). This author emphasizes that both the design of the governmental apparatus as well as some informal institutions framed the constant pursue for efficiency. For instance, "performance-based measures of success are the norm in the public sector and efficiency and effectiveness serve as legitimating mechanisms for the government – possibly because of the lack of any other, such as a traditional ruling class" (p. 13). As to the informal institutions, a (professional or academic) merit-based access to the inner circle of the government played a fundamental role in maintaining the political elite composed of the most able individuals (Hamilton-Hart, 2000).

Singapore also benefited from the "accidental" fact that after separation from Malaysia it could never pursue a protectionist policy, forcing it to compete with the rest of the world, and to rely on foreign investment to rapidly industrialize its economy. In other words, Singapore developed a "defense mechanism" against its unfavorable initial conditions based on the attraction of investment, accumulation of human capital, and the openness to international trade; this "defense mechanism" resulted to be a highly successful collection of development instruments.

V. Conclusions

Initially one would think that Botswana and Singapore had no common features on its "Miracles". Botswana had a development centered on the prosperity of one single sector (mining), while Singapore achieved its rapid development by diversifying its economy. Botswana evolved from a poor economy to a middle income economy, which implies that it is still at an early stage of development, with the unresolved tasks of diversify its industry and of allowing that economic prosperity reach the less favored individuals; on the other hand Singapore is a rich-highly diversified economy, where individuals had experienced a rapid improvement in its material welfare, and the economy is devoted to the production of high value-added goods and services. In sum, if we want to think in development as a gradual process, Singapore is various stages ahead of Botswana.

However, when one looks into the details of each of these "miracles" some common features arise:

- Before independence both countries were under British rule. They are both very young nations, Botswana became independent in 1966. Singapore obtained its full autonomy after separating from Malaysia in 1965.
- Both countries have a parliamentary political system with a single ruling political party, which has been in the power since independence. In fact, these ruling parties leaded their respective independency movement, the BDP in Botswana and the PAP in Singapore. Moreover, since independence both countries were under the prolonged rule of their most prominent statesmen, and founder leaders of the ruling parties. In the case of Botswana Seretse Khama governed from 1966 to 1980; Lee Kuan Yew was Singapore's prime minister from 1959 to 1990. Both leaders played a significant role in the development of their countries, by promoting a meritocratic civil service. They also gave preponderance to social welfare above the individual interest, and acted as bounding links between the common citizens and the ruling parties.

  Even though, Botswana's and Singapore's political systems do not really fit into the western paradigm of a (full) Democracy (e.g. none of Held's (1996) models of democracy seems to describe neither Botswana's nor Singapore's system) in neither case the hegemony of one party, and moreover of one

individual, has led to the emergence of predatory institutions. On the contrary, in both countries good institutions, in the sense of Acemoglu et al. (2002), were inherited or developed: protection of property rights, law enforcement, and a meritocratic civil service are common characteristics of the BDP's and the PAP's rule. In the case of Botswana these institutions are likely to be strongly linked to their pre-colonial heritage; in particular, the existence of the *kgotlas* seems to be a major determinant of the good institutional quality in this country. As to Singapore, the PAP modeled itself as a reasonable heir of the British in the political arena; this meant that, first the PAP inherited the control apparatus established in the post-war by the British, and second the PAP strongly committed to the protection of private property and investors' interests.

Gwartney et al. (2009) Economic Freedom Index presents a good piece of evidence of the quality of the institutions in terms of the protection of property rights is (see Table A1 in Appendix 1). In the area of "Legal Structure and Protection of Property Rights", Botswana obtained a rate similar to that of the Nontropical countries mean, well above the mean of the Tropical and it always was the highest-ranked African country; Singapore has always had a very high rate, being the highest-ranked Tropical country.

- Botswana and Singapore heavily relied on FDI to achieve their economic transformation, the former to develop an industrialized mining sector and the latter to diversify and foster its exports. Both succeeded in the attraction of foreign capital, precisely because both governments guaranteed the protection of the investors' interests, among other attractive factors such as the fiscal incentives. Also, both countries achieved very large levels of gross capital formation.

- Botswana and Singapore have had a "forced" pro-trade policy that allowed them to avoid the negative effects of the import substitution policy. In the case of Botswana the "obligation" was born in its early SACU membership, where external tariffs were fixed by South Africa and there was no protection for within the SACU trade. For Singapore, open trade came as a solution to its lack of resources to satisfy the consumers' demand and to the small size of the domestic market that would impede the progress of any competitive industry.

  In this regard both countries were very well ranked in Gwartney et al. (2009) Economic Freedom Index (see Table A1 in Appendix 1) in the area

of "Freedom to Trade Internationally". For each year Singapore was always ranked second in the sample, behind Hong Kong; and Botswana was in the top 5 within the Tropical countries and the highest ranked African country.

- Small and docile populations favored Political Stability and government intervention in Economic Transformation and law enforcement. Docility is embedded in the national culture. In the case of Batswana it is rooted in the client-patron relations inherited from the Twsana ancient institutions; for Singaporeans, confidence in the government and legitimacy of its extended rule lies on the "social above individual interest" principle of the Asian Values, and it is also rooted in the control apparatus inherited from the British rule.
- Besides these positive features, both countries experienced a favorable progress in the economic determinants of growth identified by the empirical literature. Table A2 in Appendix 1 presents the evolution of the main determinants for the 1960s, 1970s and 1980s. Even though, these variables do not account for the whole economic development of Botswana and Singapore, they surely had a positive impact on these countries' economic achievements.

Though some of these features such as the position towards FDI and trade (i.e. the proximate causes) might be replicated, others like the political systems, population size, and more fundamentally the institutional framework (i.e. the fundamental cause) make of each of these two cases a unique event; that is why I labeled them as "Miracles". Botswana is rather exceptional in the African context because it managed to avoid being yet another illustration of the resource curse; even though it had a perfect ingredient to be one, its large allocation of diamonds. The quality of its institutions, above those of most of the developing countries, played a central role in evading the disaster (very much in the spirit of Mehlum et al., 2006). In the case of Singapore, its uniqueness is characterized by its city-state structure and by its incredibly rapid economic transformation; from its dark prospects in the mid-1960s it grew itself into a world leading economy by the 1990s.

References

1. ACEMOGLU, D., JOHNSON, S., AND ROBINSON, J. (2001). "The colonial origins of comparative development: An empirical investigation", *American Economic Review*, 91(5):1369-1401.

2. ACEMOGLU, D., JOHNSON, S., AND ROBINSON, J. (2002). "Reversal of fortune: geography and institutions in the making of the modern world income distribution", *Quarterly Journal of Economics*, 117(4):1231-1294.

3. ACEMOGLU, D., JOHNSON, S., AND ROBINSON, J. (2003). "An African success story: Botswana", In D. Rodrick (Ed.), *Analytic Development Narratives* (pp. 80-119). Princeton: Princeton University Press.

4. ACEMOGLU, D., JOHNSON, S., AND ROBINSON, J. (2005a). "Institutions as the fundamental cause of long-run growth", In P. Aghion and S. Durlauf (Eds.), *Handbook of Economic Growth* (pp. 385-472). Amsterdam: Elsevier.

5. ACEMOGLU, D., JOHNSON, S., AND ROBINSON, J. (2005b). "The rise of Europe: Atlantic trade, institutional change, and economic growth", *American Economic Review*, 95(3):546-579.

6. ALESINA, A., DEVLEESCHAUWER, A., EASTERLY, W., KURLAT, S., AND WACZIARG, R. (2003). "Fractionalization", *Journal of Economic Growth*, 8:155-194.

7. ANONYMOUS. (2009, October). Diamonds are not forever; Botswana's impatient president. *The Economist*, 393(8654):58.

8. BANERJEE, A., AND DUFLO, E. (2003). "Inequality and growth: What can the data say?", *Journal of Economic Growth*, 8(3):267-299.

9. BARR, M. (2000). "Lee Kuan Yew and the "Asian values" debate", *Asian Studies Review*, 24(3):309-334.

10. BARRO, R. (1989). Economic growth in a cross section of countries (Working Paper Series 3120). NBER.

11. BARRO, R. (1996). Determinants of economic growth: A cross-country empirical study (Working Paper Series 5698). NBER

12. BARRO, R., AND LEE, J. (1994). "Sources of economic growth", *Public Policy*, 40:1-46.

13. BARRO, R., AND LEE, J. (2000). International Data on Educational Attainment: Updates and Implications (Working Papers 42). Harvard University, Center for International Development. Data retrieved from: http://dvn.iq.harvard.edu/dvn/dv/cid.

14. BEAULIER, S. (2003). "Explaining Botswana's Success: The critical role of Post-Colonial Policy", *Cato Journal*, 23(2):227-240.

15. BECK, T., CLARKE, G., GROFF, A., KEEFER, P., AND WALSH, P. (2001). "New tools and new tests in comparative political economy: The database of political institutions", *World Bank Economic Review*, 15:165-176.

16. BLOOM, D., AND WILLIAMSON, J., (1998). "Demographic transitions and economic miracles in emerging Asia", *World Bank Economic Review*, 12(3):415-455.

17. BOSCHINI, A., PETTERSON, J., AND ROINE, J. (2007). "Resource curse or not: A question of appropriability", *Scandinavian Journal of Economics*, 109(3):593-617.

18. BRUNNSCHWEILER, C., AND BULTE, E. (2008). "The resource curse revisited and revised: A tale of paradoxes and red herrings", *Journal of environmental economics and managemen*t, 55(3):248-264.

19. CARLING, R. (1995). "Labor Market Policies", in K. Bercuson (Ed.), *Singapore a case study in rapid development* (pp. 29-33). Washington, D. C.: International Monetary Fund.

20. CARROLL, B., AND CARROLL, T. (1997). "State and ethnicity in Botswana and Mauritius: A democratic route to development?", *Journal of Development Studies*, 33(4):464-486.

21. Center for International Development (CID) at Harvard University. http://www.cid.harvard.edu/ciddata/ciddata.html.

22. CHUA, B-H. (1994). "Arrested development: Democratisation in Singapore", *Third World Quarterly*, 15(4):655-688.

23. CURRY, R. (1987). "Botswana's macroeconomic management of its Mineral-Based growth: It used mining revenues for development and services but must now broaden the beneficiaries", *American Journal of Economics and Sociology*, 46(4):473-488.

24. EASTERLY, W., KREMER, M., PRITCHETT, L., AND SUMMERS, L. (1993). "Good policy or good luck? Country growth performance and temporary shocks", *Journal of Monetary Economics*, 32,459-483.

25. ELKAN, R. VAN (1995). "Singapore's development strategy", in K. Bercuson (Ed.), *Singapore a case study in rapid development* (pp. 11-19). Washington, D. C.: International Monetary Fund.

26. FAWCUS, P., AND TILBUY, A. (2000). *Botswana: The road to independence.* Gaborone: Botswana Society and Pula Press.

27. FEAGIN, J., ORUM, A., S., AND JOBERG, G. (Eds.) (1991). *A case for case study.* Chapel Hill, NC: University of North Carolina Press.

28. GALLUP, J., SACHS, J., AND MELLINGER, A. (1999). Geography and economic growth (Working Papers 1). Harvard University, Center for International Development.

29. GALLUP, J., SACHS, J., AND MELLINGER, A. (2000). "Climate, coastal proximity, and development", in G. Clark, M. Feldman, and M. Gertler (Eds.), *Oxford Handbook of Economic Geography* (pp. 169-195). Oxford, UK: Oxford University Press.

30. GARRISON, C., AND LEE, F-Y. (1995). "The effect of macroeconomic variables on economic growth rates: A cross-country study", *Journal of Macroeconomics*, 17(2):303-317.

31. GHEMAWAT, P., AND LENK. T (1990). "De beers consolidated mines Ltd. A", *Harvard Business School*, Case 9:391-076.

32. GOOD, K. (1992). "Interpreting the exceptionality of Botswana", *Journal of Modern African Studies*, 30(1):69-95.

33. GOOD, K. (2005). "Resource dependency and its consequences: The costs of Botswana's shining gems", *Journal of Contemporary African Studies*, 23(1):27-50.

34. GRICE, K., AND DRAKAKIS-SMITH, D. (1985). "The role of the state in shaping development: Two decades of growth in Singapore", *Transactions of the Institute of British Geographers, New Series*, 10(3):347-359.

35. GUPTA, D., MADHAVAN, M., AND BLEE, A. (1998). "Democracy, economic Growth and political instability: An integrated perspective", *Journal of Socio-Economics*, 27(5):587-611.

36. GWARTNEY, J., LAWSON, R., GRUBEL, H., DE HAAN, J., STURM, J-E., AND ZANBERG, E. (2009). *Economic freedom of the world: 2009 Annual Report*. Data retrieved from: http://www.freetheworld.com/release.html.

37. GYLFASON, T. (2001). "Natural resources, education, and economic development", *European Economic Review*, 45:847-859.

38. GYLFASON, T., AND ZOEGA, G. (2002). Inequality and economic growth: Do natural resources matter? (Working Paper Series 712). CESifo.

39. HAAS, M. (1999). "A political history", In M. Haas (Ed.), *The Singapore Puzzle* (pp. 15-38). Westport: Greenwood Publishing Group.

40. HALL, R., AND JONES, C. (1999). "Why do some countries produce so much more output per worker than others?", *Quarterly Journal of Economics*, 114(1):83-116.

41. HALTER, D., OECHSLIN, M., AND ZWEIMÜLLER, J. (2011). Inequality and growth: The neglected time dimension (Working Papers 507). University of Zurich, Institute for empirical research in economics.

42. HAMILTON-HART, N. (2000). "The Singapore state revisited", *The Pacific Review*, 13(2):195-216.

43. HELD, D. (1996). *Models of democracy.* Cambridge, UK: Polity Press.

44. HENISZ, W. (2000). "The institutional environment for economic growth", *Economics and Politics*, 12(1):1-31.

45. HESTON, A., SUMMERS R., AND ATEN, B. (2009). Penn World Table Version 6.3, *Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania*. Data retrieved form: http://pwt.econ.upenn.edu/php_site/pwt_index.php.

46. HILL, C. (1991). "Managing commodity booms in Botswana", *World Development*, 19(9):1185-1196.

47. HUSAIN, A. (1995). "Determinants of private saving in Singapore", in K. Bercuson (Ed.), *Singapore a case study in rapid development* (pp. 34-39). Washington, D. C.: International Monetary Fund.

48. KURUVILLA, S. (1996). "Linkages between industrialization strategies and industrial relations/human resource policies: Singapore, Malaysia, the Philippines, and India", *Industrial and Labor Relations Review*, 49(4):635-657.

49. LAM, N. (2000). "Government intervention in the economy: A comparative analysis of Singapore and Hong Kong", *Public Administration and Development*, 20:397-421.

50. LEITH, J. (2005). *Why Botswana prospered*. Montreal: McGill-Queen's University Press.

51. LINGLE, C., AND WICKMAN, K. (1999). "Political economy", in M. Haas (Ed.), *The Singapore puzzle* (pp. 15-38). Westport: Greenwood Publishing Group.

52. MADDISON, A. (2008). Historical statistics on world economy, 1-2006AD. http://www.ggdc.net/maddison/.

53. MARSHALL, M., AND JAGGERS, K. (2008). "Polity IV Project: Political regime charac-teristics and transitions", *Electronic resource*, 1800-2008.

54. MARTIN, P. (2008). "A closer look at Botswana's development: The role of institutions", *Paterson Review*, 9:35-54.

55. MEHLUM, H., MOENE, K., AND TORVIK, R. (2006). "Institutions and the resource curse", *Economic Journal*, 116:1-20.

56. MIKESELL, R. (1997). "Explaining the resource curse, with special reference to mineral-exporting countries", *Resource Policy*, 23(4):191-199.

57. MODISE, M. (2000). "Management of mineral revenues: The Botswana experience", Workshop on growth and diversification in mineral economies. Cape Town, South Africa: UNCTAD.

58. NEHER, C. (1999). "The case for Singapore", in M. Haas (Ed.), *The Singapore puzzle* (pp. 39-54). Westport: Greenwood Publishing Group.

59. NORTH, D. (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.

60. PLOEG, F. VAN DER (2011). "Natural resources: Curse or blessing?", *Journal of Economic Literature*, 49(2):366-420.

61. PLOEG, F. VAN DER, AND POELHEKKE, S. (2010). "The pungent smell of "red herrings": Subsoil assets, rents, volatility and the resource curse", *Journal of Environmental Economics and Management*, 60(1):44-55.

62. QUAH, J. (1995). "Controlling corruption in city-states: A comparative study of Hong Kong and Singapore", *Crime, Law & Social Change*, 22:391-414.

63. QUAH, J. (2001). "Combating corruption in Singapore: what can be learned?", *Journal of Contingencies and Crisis Management*, 9(1):29-35.

64. ROBINSON, J. (2009). Botswana as a role model for country success (Research Papers 2009/40). UNU-WIDER.

65. RODRIK, D., SUBRAMANIAN, A., AND TREBBI, F. (2004). "Institutions rule: The primacy of institutions over geography and integration in economic development", *Journal of Economic Growth*, 9:131-165.

66. ROMER, P. (1986). "Increasing returns and long-run growth", *Journal of Political Economy,* 94:1002-1037.

67. ROMER, P. (1990). "Endogenous technological change", *Journal of Political Economy,* 98(5):71-102.

68. RUMBAUGH, T. (1995). "Singapore's experience as an open economy", in K. Bercuson (Ed.), *Singapore a case study in rapid development* (pp. 34-39). Washington, D. C.: International Monetary Fund.

69. SACHS, J. (2003). Institutions don't rule: Direct effects of geography on per capita income (Working Paper Series 9490). NBER.

70. SACHS, J., AND MALANEY, P. (2000). "The economic and social burden of Malaria", *Nature*, 415:680-685.

71. SACHS, J., AND WARNER, A. (1995a). Economic convergence and economic policies (Network Studies and Analyses 35). CASE.

72. SACHS, J., AND WARNER, A. (1995b). Natural resource abundance and economic growth (Working Paper Series 5398). NBER.

73. SACHS, J., AND WARNER, A. (1999). "The big push, natural resource booms and growth", *Journal of Development Economics,* 59:43-76.

74. SACHS, J., AND WARNER, A. (2001). "Natural resources and economic development. The curse of natural resources", *European Economic Review*, 45:827-838.

75. SALA-I-MARTIN, X., DOPPELHOFER, G., AND MILLER, R. (2004). "Determinants of long-term growth: A bayesian averaging of classical estimates (BACE) approach", *American Economic Review,* 94(4):813-835.

76. SAMATAR, I. (1997). "Leadership and ethnicity in the making of African state models: Botswana versus Somalia", *Third World Quarterly*, 18(4):687-707.

77. SAMBANIS, N. (2004). "Using case studies to expand economic models of civil war", *Perspectives on Politics,* 2(2):259-279.

78. SEN, A. (1988). "The concept of development", in H. Chenery and T. N. Srinivasan (Eds.), *Handbook of Development Economics I* (pp. 9-26). Elsevier Science Publishers B.V.

79. SIM, S-F. (2001). "Asian values, authoritarianism and capitalism in Singapore", *The Public*, 8(2):45-66.

80. TALEB, N. N. (2008). *El cisne negro/ The black swan: El impacto de lo altamente improbable*. Barcelona: Paidós.

81. TAYLOR, I. (2002). "Botswana's developmental state and the politics of legitimacy". *Mimeo.*

82. TIRUNEH, G. (2004). "Democratic development in Botswana and Tunisia: A comparative analysis", *Journal of Contemporary African Studies*, 22(1):13-28.

83. TREMEWAN, C. (1991). The political economy of social control in Singapore. *Doctoral Thesis, University of Canterbury*. Retrived from: http://ir.canterbury.ac.nz/handle/10092/4612.

84. TSIE, B. (1996). "The political context of Botswana's development performance", *Journal of Southern African Studies,* 22(4):599-616.

85. UNDP. (2005). *Botswana human development report: Harnessing science and technology for human development*. Gaborone: UNDP.

86. WORLD BANK (n. d.). *World Development Indicators*.

87. YIN, R. (2003a). *Applications of case study research*. Thousand Oaks, CA: Sage.

88. YIN, R. (2003b). *Case study research. Designs and methods*. Thousand Oaks, CA: Sage.

89. YOUNG, A. (1992). "A tale of two cities: Factor accumulation and technical change in Hong Kong and Singapore", *NBER Macroeconomics Annual*, 7:13-54.

90. ZULETA, H. (2008). Seasons, savings and GDP (Documentos de Trabajo 32). Universidad del Rosario, Facultad de Economía.

Appendix 1

Table A1. Economic Freedom Index

Area		1980	1985	1990	1995
Legal Structure and Security of Property Rights	Botswana		6.75	6.71	6.79
	Singapore	9.48	8.45	8.45	8.31
	Rest of Tropical[a]	4.11	3.95	4.13	4.57
	Nontropical	6.64	6.75	7.08	6.77
	Rest of Africa[b]		3.99	4.02	4.39
Freedom to Trade Internationally	Botswana	7.11	7.07	7.33	6.77
	Singapore	9.29	9.70	9.70	9.68
	Rest of Tropical[a]	4.76	4.69	5.31	6.18
	Nontropical	6.22	6.12	6.41	7.02
	Rest of Africa[b]	4.44	4.44	4.78	5.58

[a] Excluding Botswana and Singapore. [b] Excluding Botswana. Both areas are graded from 0 to 10, being 10 the maximum level of freedom and 0 the minimum.

Source: Gwartney et al. (2009). Author's calculations.

Table A2. Economic Determinants of Growth

Variable	Measure	Sign	Source	Botswana			Singapore		
				1960s	1970s	1980s	1960s	1970s	1980s
Government size	G/GDP	(-)	WDI	22.63%	18.43%	24.34%	10.32%	11.05%	11.22%
Investment	I/GDP	(+)	WDI	17.38%	42.54%	29.96%	21.50%	40.49%	42.55%
Education	% of unschooled > 25 years	(+)	BL	72.10%	69.10%	52.40%	57.50%	44.20%	39.50%
Inflation	CPI variation	(-)	WDI		11.53%	10.81%		5.91%	2.79%
Openness	(X+M)/GDP	(+)	PT	76.1%	106.7%	120%	287.8%	301.3%	360%
Dependency Index	Rest of pop/WAP	(-)	WDI	1.05	1	0.95	0.83	0.6	0.42

WDI: World Development Indicators; BL: Barro and Lee (2000); PT: Heston et al. (2009).

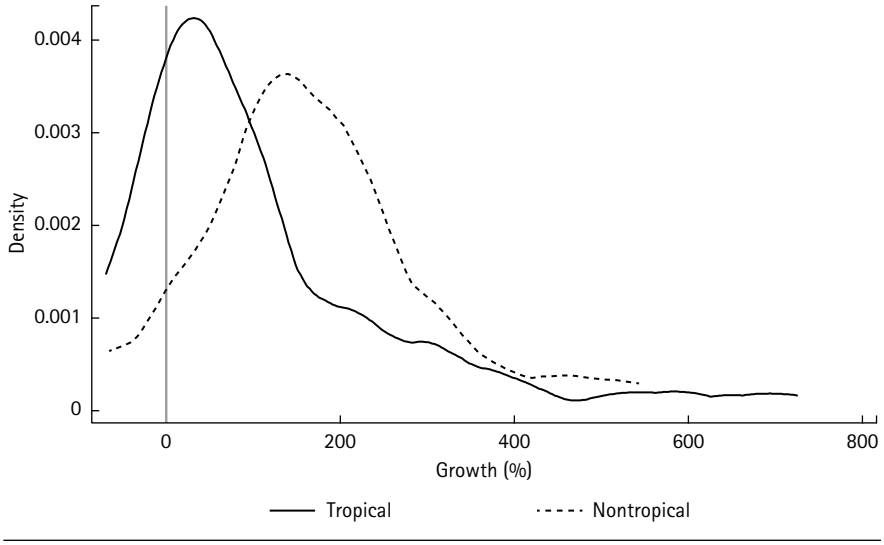
Source: Author's calculations.

Table A3. Singapore's Regional Trade Pattern (% of Total Trade)

	1970	1975	1980	1985	1990
ASEAN	26.45	18.71	25.16	23.23	21.29
U.S.	10.32	14.84	12.90	16.77	18.06
Japan	14.84	13.55	12.90	12.90	14.84

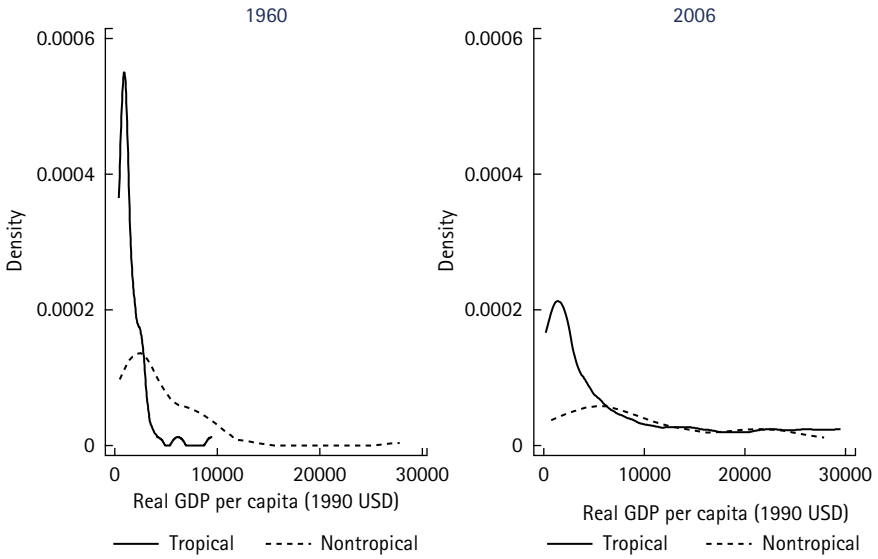
Source: Rumbaugh (1995) – IMF.

Figure 1. Real GDP per capita Growth (1960-2006)



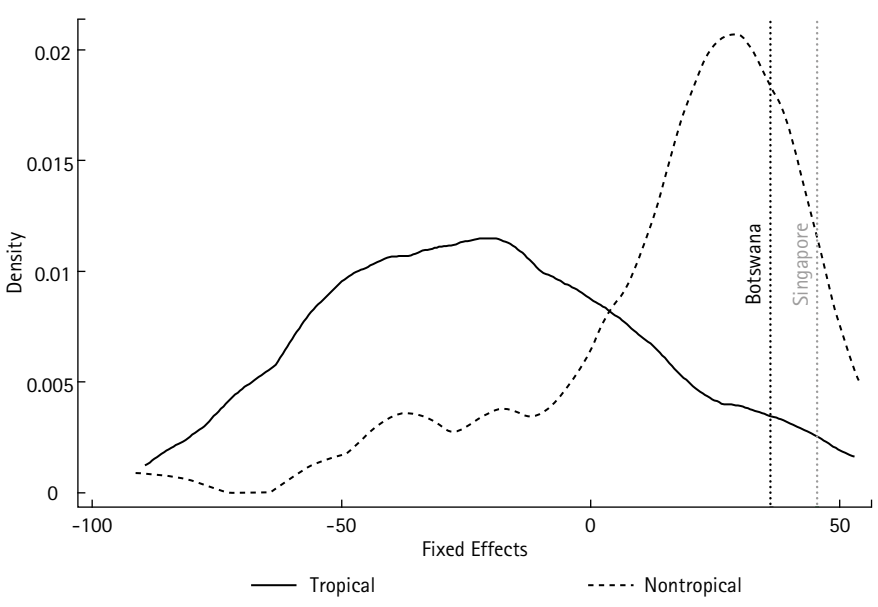
Source: Maddison (2008). Author's calculations.

Figure 2. Real GDP per capita



Source: Maddison (2008). Author's calculations.

Figure 3. Fixed Effects



Source: Author's calculations.

Appendix 2. Figures Botswana

Figure 1. RGDP annual growth (%)-Botswana

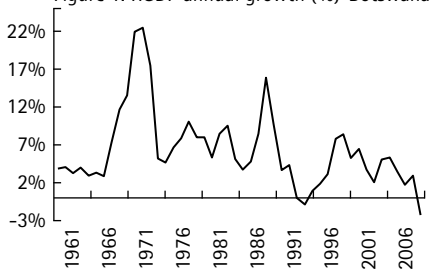


Figure 2. Inflation CPI (%)-Botswana

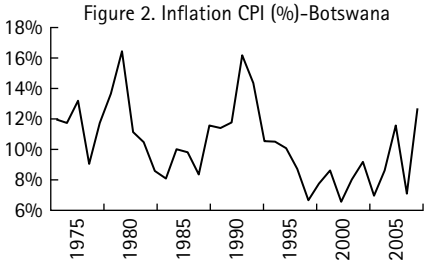


Figure 3. Economic Structure (% GDP)-Botswana

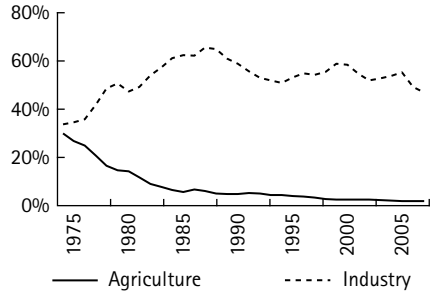


Figure 4 . Gross Capital Formation (% GDP)-Botswana

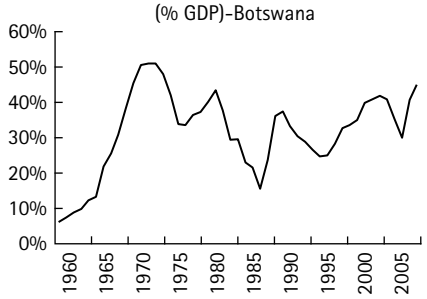


Figure 5. Exports and Imports (% GDP)-Botswana

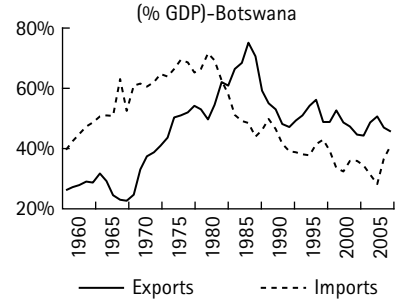


Figure 6. External Balance and Trade (% GDP)-Botswana

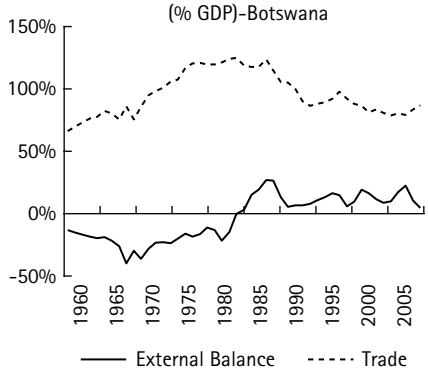
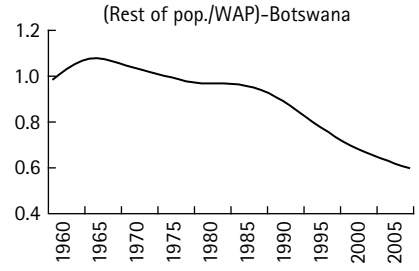


Figure 7. Dependency (Rest of pop./WAP)-Botswana



Source: WDI-World Bank.

Appendix 3. Figures Singapore

Figure 1. RGDP annual growth (%)-Singapore

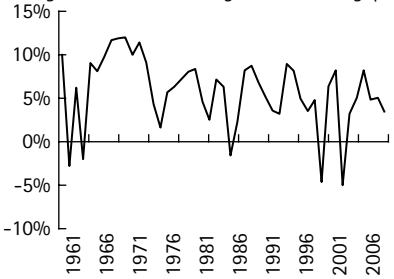


Figure 2. Inflation CPI (%)-Singapore

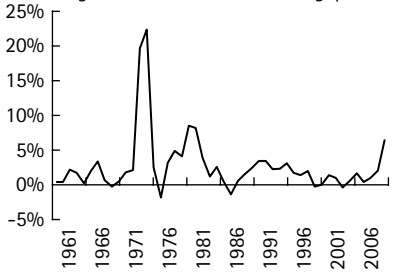


Figure 3. Economic Structure (% GDP)-Singapore

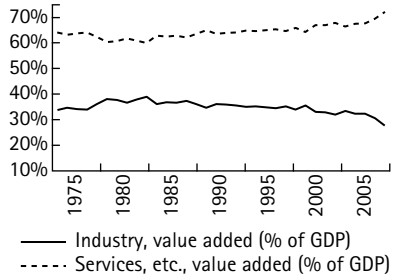


Figure 4. Gross Capital Formation (% GDP)-Singapore

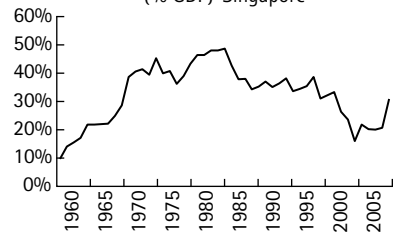


Figure 5. External Balance (% GDP)-Singapore

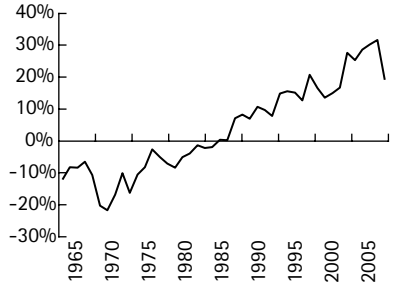
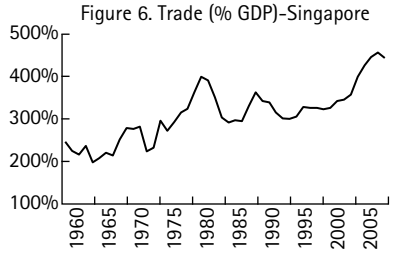


Figure 6. Trade (% GDP)-Singapore



Source: Heston et al. (2009).

Figure 7. Dependency Index (Restof pop./WAP)-Singapore

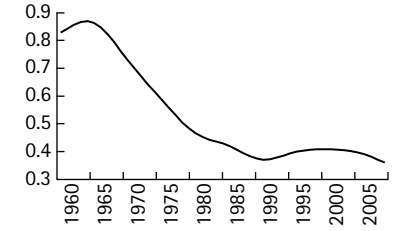
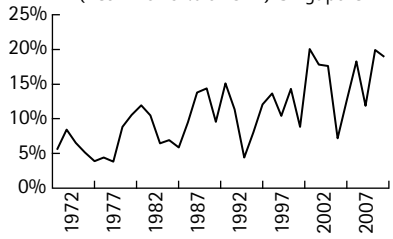


Figure 8. Foreign Direct Investment (net inflows % of GDP)-Singapore



Source: WDI-World Bank.