

CHAPTER 1

INTRODUCTION

1.1 Introduction

Export Processing Zones (EPZs) are broadly defined as industrial estates specialising in manufacturing for export which create distinctive arrangements allowing firms that specialise in exports to qualify for a liberal regulatory framework such as duty-free imported inputs. In their modern form, EPZs have been in operation since 1958, when the Shannon Free Zone Industry was established in Ireland. South-East Asian countries were, however, the first to successfully implement EPZs in the 1960s. In 1970 there were fewer than 10 countries with EPZs. When Mauritius decided to create an EPZ in 1970, it was therefore something of a pioneer of a relatively untested concept, especially in Africa.

Despite the obstacles that Mauritius faced and the initial existence of an unpromising combination of sugar exports funding an inward-looking Import Substitution Strategy (ISI), the Mauritius EPZ became a model of successful EPZ implementation in the 1980s, for other countries south to emulate.

1.2 Importance of the study

As a result of the successes of EPZ which this thesis measures in terms of the ratio of manufacturing exports to GDP (x/GDP) and growth rates of GDP, a fairly large literature has emerged on Mauritius's EPZ, although many elements of the successful implementation and the economic impact of the EPZ remain unexplored.

This thesis seeks to add to the understanding of these issues, especially by analysing in depth how the EPZ contributed to the economic growth of Mauritius. The thesis also seeks to shed further light on why Mauritius succeeded where many others had failed. Many countries in Africa have tried to set up an EPZ, but, despite launching these EPZs later than Mauritius under arguably more favourable conditions, they have not been as successful as Mauritius. Examples of sub-Saharan countries that have adopted EPZs are Togo (1989), Namibia (1996), Kenya (1990) and Cameroon (1990).

South Africa established Industrial Development Zones (IDZs) only in 2002, which are similar to EPZs, and more than ten years after their implementation only two zones are fully operational. Although South Africa seems to offer more incentives and a much better infrastructure than Mauritius did during the 1970s, the IDZs have not experienced the exceptional take-off that was characteristic of the Mauritius EPZ. This may however be influenced by the less favourable international environment that now prevails.

This study will address more comprehensively than previous work, the question of why Mauritius was able to implement an EPZ as early as 1970 with subsequent great success. The thesis will add to development literature on the importance of EPZs and which trade theory best explains EPZ successes. It investigates whether EPZs on their own can guarantee economic success and, finally, whether the post-preference (post-Multi-Fibre Agreement) era will lead to a reversal of the gains the Mauritius EPZ generated in the past, as many have argued. The results of the analysis will provide an indication of whether Mauritius can adopt a strategy that will not only limit the negative impacts of preference removal, but also bring opportunities for a reorientation and revival of the sector.

1.3 Outline of chapters

To answer these questions, it must first be known how the EPZ was created. This thesis will thus start off in Chapter 2 with an in-depth analysis of the decision to create an EPZ in Mauritius and what made this creation successful compared to other countries that tried the same strategy. Chapter 2 will focus on the political economy factors that provided an environment conducive to the creation of an EPZ in Mauritius. It is noted that political economy has gained momentum amongst economists recently, as it helps to explain the interaction between political institutions and the economic system and strategy.

Mauritius has been recognised as a uniquely successful example of EPZ implementation. Several authors have discussed the Mauritius ‘miracle’ and the success of the EPZ. Many of them have touched on political economy factors behind the success of the EPZ, but no one explanation appears to be convincing on its own. Chapter 2 will add to existing literature by attempting to bring together previous studies into a convincing and integrated explanation. It will also be based on recent developments in the political economy literature which identify and pull together a number of factors. The political economy factors will be

identified that were present in Mauritius prior to and after independence and it be will ascertained whether our integrated approach could provide a framework to explain the uniquely successful creation of the Mauritian EPZ.

Chapter 3 will first give an overview of the impact of the EPZ on the main economic indicators of Mauritius and establish whether the EPZ was the main driver of Mauritian growth in the early 1980s. This chapter will then try to identify, from a trade theory perspective, the causal factors in the success of the EPZ in Mauritius. Existing literature on the Mauritius EPZ has not interrogated trade theories to see which ones could be used to explain the EPZ's success. This chapter will try to address this shortcoming by proceeding with an analysis to establish whether neoclassical or new trade theories best explain the Mauritius story.

For instance, if Mauritius followed the path predicted by the Hecksher-Ohlin (H-O) model, the country would have specialised in the production of those goods that use the factor of production in which the country had a comparative advantage (e.g. the sugarcane plantations, which make use of abundant agricultural labour, and perhaps the tourism sector, which had good potential for the country) and import those products in which it did not have a comparative edge, in this case manufactured goods from the USA and EU. Therefore, Mauritius would have continued with the sugar sector, in which it had a comparative advantage in terms of labour, rather than introduce the EPZ, which according to the H-O model would create a distortion and lead to inefficiency. It will become clear whether the H-O model in practical terms did fit the Mauritian reality in terms of employment in the EPZ, which would increase but only at the expense of a decrease in revenue and employment in the sugar sector, and also lead to a fall in the real economic growth as inefficiencies set in.

If the H-O model proves unable to explain the EPZ story in Mauritius, alternative trade theories will be tested to see whether they are better able to explain the EPZ story in Mauritius. In particular, 'new trade theories' will be tested, especially the one produced by Krugman and Venables, which incorporates the effects of transport costs and wages on the gains from trade.

The chapter will then proceed with an analysis of the factor(s) identified from the chosen theory, which could have been the determining factors for the success of EPZ in Mauritius.

Having identified the factors that contributed to the EPZ take-off in Mauritius and eventually the Mauritius 'miracle', the next chapter, Chapter 4, will use cross-country data covering 80 countries to examine whether from a broad perspective there is an association between EPZ implementation and success. The question is: does EPZ lead to success or vice versa (i.e. is it successful countries that implement EPZ)? There are a number of theories and models that are suggestive about the nature of the association and causal direction between EPZs and economic success, but the researcher has not come across any study that uses extensive cross-country analysis to uncover empirically whether there is such an association or not.

Through a series of empirical tests we will try to fill this gap by investigating the association between success and EPZ from different angles. First, the types of countries that decided to implement an EPZ will be analysed. To do this, the chapter uses probit estimations, which will provide an indication of the characteristics of EPZ countries five years prior to the implementation of the EPZ i.e. at period (t-5). From this estimation it will be clear whether the EPZ countries were already set to perform well with or without an EPZ.

Next, the Ordinary Least Square (OLS) estimates are examined to test the relationship between success and an EPZ and between success and other factors identified as the other exogenous (control) factors. Taking the other exogenous factors into consideration will bring the data set down from 80 to 38 countries, because of data availability issues. Whether there is selection bias in choosing the 38 countries from the list of the initial 80 countries will be tested.

The next step will be to question the potential endogeneity of EPZs and whether another factor or factors are biasing upwards the effect of EPZs on success in the OLS tests. It will also be investigated whether only certain exceptional countries with exceptional characteristics chose the EPZ, and whether EPZ made a difference in terms of the success measures.

Lastly, it will be investigated whether differences in the incentives offered by EPZs and the types of incentives could provide an explanation of which EPZs are successful and which are not. The results of the chapter will give a clear indication as to whether there is an association between EPZ and success, and if there is not, it might strengthen the argument that the EPZ's contribution to the success of Mauritius was exceptional.

Chapter 5 will look at what happened to the Mauritius EPZ with the creation of the World Trade Organisation after which the Multi-Fibre Agreement (MFA) was gradually phased out, culminating in the complete removal of all preferences in 2005. Existing reviews of the effects of MFA phase-out usually acknowledge net welfare losses for countries such as Mauritius, where performance indicators such as exports and employment should be adversely affected. To prevent any hasty conclusions, the chapter will consider two possible consequences of the removal of preferences. Many analysts predict that the removal of preferences will lead to total collapse of the manufacturing sector in Mauritius. Others argue that Mauritius had developed such resilience that it was able to withstand the counter-effects of preferences being taken away. An analysis of the two main performance indicators for Mauritius – namely, exports and employment for the period 2000-2010, will be undertaken and how different products have been affected in different ways will be studied. We will analyse whether those products that were under preferences prior to 2005 did in fact experience a sudden fall in performance indicators after the preferences had been removed. Next, a comparison of the exports of countries which had EPZs similar to Mauritius will be carried out to provide a list of countries that have or will become direct competitors to Mauritius in the more deregulated global trading environment.

The difference-in-difference (DID) estimation will then be used to compare the textile and apparel sectors in Mauritius with other sectors in order to obtain the real effects of the removal of the preferences. The estimation will compare changes of the product groups Textile/Yarn/Fabrics and Apparel (Nos 3 and 4) with the other sectors in the Mauritian manufacturing sector. The treatment group will be group 3+4, while the control group will be the other sectors taken together. The simplest way would be to compute the average treatment groups and control groups over the two time periods. One of the groups is exposed to a treatment (preferences) in the first period, but not in the second period. The

second group is not exposed to the treatment during either period. In the case where the same units within a group are observed in each time period, the average gain in the second (control) group is subtracted from the average gain in the first (treatment) group. This removes biases in the first period comparisons between the treatment and control group that could be the result of permanent differences between those groups, as well as biases from comparisons over time in the treatment group that could be the result of trends.

To confirm the DID results, a linear regression will be used to verify the average difference between the treatment and control groups across time (from 2001-2008). This method would be a way to eliminate fixed factors that might have an impact between treatment and control groups.

Chapter 6 will bring together the main findings of the previous chapters and provide answers to the main research sub-questions of the thesis. The chapter will also provide some recommendations on the way forward.

1.4 Literature review

This section first reviews the literature on the political economy perspective to explain the Mauritius EPZ. Existing literature on trade theories is then looked at, which will establish for the later analysis of which one theory best explains the success of the EPZ in Mauritius. Theories and models that are suggestive about the nature of the association between EPZs and economic success are then regarded. Finally, existing studies on the effects of the Multi-Fibre Agreement (MFA) phase-out are reviewed.

1.4.1 *Previous studies on the political economy of Mauritius*

Several authors have discussed the success of the Mauritius EPZ. Bowman (1991) argues that unlike many developing countries, political power in Mauritius is balanced by economic power. This plurality of power, he believes, is at the core of the success of democracy in Mauritius. Brautigam (1997) is explicit on the role of institutions to explain

Mauritius's success. She argues that democracy was achieved in Mauritius through the inclusion of the major social actors (ethnic groups) in the reform process. She also maintains that choices cannot be a function purely of such interests. The independent role of ideas and ideology has to be acknowledged. Subramanian and Roy (2001) highlight the importance of institutional quality in explaining Mauritius's relative success. Subramanian (2009) on his own goes further by critically evaluating four factors that have been advanced as explanations for Mauritius's growth success: the initial conditions, openness to trade, foreign direct investment and institutions. Subramanian (2009) also turns to ethnic diversity to explain the exceptional performance of Mauritius. Frankel (2010) recognises that Mauritius made the correct policy decisions, which he attributes both to the deliberate choices of individuals and to effective political institutions. All the above studies have explained through different approaches the success in creating the EPZ in Mauritius. The role of institutions and the inclusive political system are mentioned the most as factors providing the necessary conditions for the EPZ to be implemented successfully.

Many of the political economy factors behind the success of the EPZ have been uncovered, but no one explanation appears to be convincing on its own. The way forward would be to pull together all the above factors into a convincing integrated explanation. Such an explanation would be based on recent developments in the political economy literature, which identify and pull together a number of causal factors. The first of these studies that will be analysed is by Acemoglu and Robinson (2012). They argue that some countries are poor because they are governed by a narrow elite, whose rule is characterised by a concentration of political power and where the wealth created is shared only by those who are very close to those in power. Poor countries are poor because those who rule them choose deliberately – not by mistake or in ignorance – to create poverty. Differences between rich and poor countries come down to differences in economic and political institutions. Therefore, the choice of political and economic institutions will determine whether countries encourage or impede economic growth. The politics of institutions is therefore central to the quest for understanding the reasons behind the success or failure of nations.

Lin (2009) argues that while the importance of institutions is undeniable, the question of sudden and sustained growth periods in some countries remains unanswered. Lin (2009) sees continuous technological upgrading as the most important engine for a country's economic growth, and relates to this the notion that ideas are the most vital determinants of a country's growth. Lin (2009) also identifies the government as the most important institution in any country. He says that people have to understand the leadership and motivation of the political leaders who run the government. Qian (2001), on the other hand, explains the unprecedented economic growth of China through its institutional reform and how the transitional institutions of markets, firms and government worked in China. According to Qian (2001), there is a need to broaden our perspective on institutions. Qian (2001) analyses the successful reforms as well as the failure of Chinese institutional reforms. The most notable successful reform, which is similar to the Mauritius case, is market liberalisation through the 'dual-track' approach under which prices were liberalised at the margin, while quotas were maintained. We had two tracks: the plan track and market track.

Based on previous studies and recent literature, Chapter 2 will identify the political economy factors which facilitated the creation of the EPZ in Mauritius. It will provide a better understanding and insight on the first research sub-question of the thesis, which is: 'what are the political economy factors that created the enabling environment for the creation of the successful EPZ in Mauritius?'

1.4.2 *Trade theories that may best explain the Mauritius EPZ story*

Existing literature on the Mauritius EPZ has not specifically interrogated trade theories to see which one could be used to explain the success of EPZ in Mauritius. Madani (1999) points out that success will depend critically on the factor intensity of the two sectors. He assumes that when small underdeveloped countries have a comparative advantage in labour-intensive industries and protect their capital-intensive sectors, then an EPZ will reduce the country's welfare. Madani's assessment is based on the model developed by Hamada (1974) in his analysis of the economic implications of EPZs. Hamada states that an EPZ does not necessarily improve consumption possibilities in the developing country. He therefore concludes through the use of the H-O model that with the establishment of an

EPZ the potential consumption possibility for a country does not improve despite the introduction of more investment. On top of that, labour is taken away from the more productive sector (agriculture) to the capital-intensive sector (manufacturing).

New trade theory by Krugman and Venables was developed to explain the aspects of the real world that the H-O model failed to consider in explaining trade between nations. The World Trade Report (2008) asserts that in the 1980s, data set on trade at firm level became available and showed considerable differences among firms, which led to alternative trade theories which would attempt to produce new theoretical explanations for the shortcomings of the H-O model with its problematic assumptions, such as no transport costs, homogenous products, constant returns to scale and perfect competition.

The new trade theory assumed imperfect competition and increasing returns to scale, as well as intra-industry trade and rather than focusing on factor endowments only to explain trade, Krugman and Venables (1995) focus on geographical concentration of varieties, i.e. different countries producing different varieties and then trading them. The Krugman and Venables (1995) model most clearly incorporates the effects of transport costs and wages on the gains from trade.

In Chapter 3, an in depth analysis is firstly provided on the contribution of EPZ to the Mauritian economy at the time of its take-off. The chapter will then review the neoclassical and new trade theories to determine which one of them is more appropriate to explain the factors behind the success of EPZ in Mauritius.

1.4.3 Association between EPZs and economic success

There are a number of theories and models that are suggestive about the nature of the association between EPZs and economic success. For most neoclassical economists, EPZs can only be viewed as a second-best option. The best option will always be complete liberalisation. However, Cling (2001) has provided an overview of economists who take a different view from the majority and show that the creation of EPZs improves a country's wellbeing. New growth theorists tend to take a more positive view than neoclassical economists, as they stress the possible external effects of an EPZ on the host economy, such as learning effects, human capital development and demonstration effects. By

recognising the importance of these positive externalities, new growth theorists point to important gains for host countries that successfully implement EPZs (Johansson & Nilsson, 1997). Tyler (2009), using the endogenous growth framework of new growth economics, analyses the empirical effects of the adoption of an EPZ policy on the growth of countries. The analysis incorporates the use of EPZs in the empirical estimates of a growth equation and demonstrates a positive and significant relationship between the use of EPZs and economic growth. Radelet (1999) observes that success in manufactured exports has been nearly synonymous with rapid economic development. Although he is an advocate of EPZ leading to economic success, he also points to the general importance of the broader policies and underlying preconditions that are needed to encourage growth in manufactured exports. This suggests that countries that have successfully implemented the types of EPZs that led to increases in manufacturing exports were already performing well.

Using empirical analysis, Chapter 4 will demonstrate the direction of the association between EPZ and success and whether it is the adoption of EPZs that leads to success, or economic success leads to the adoption of EPZs, or if there are other contributing factors to success.

1.4.4 The effects of MFA phase-out and the Agreement on Textiles and Clothing

Francois and Spinanger's (2004) study points out that the MFA was a preference system, which helped other developing countries at the expense of India and China. The potential for Chinese and Indian exports after 2005 would therefore mean lost market share for most of the other suppliers in the developing world, who produced at a higher cost. UNCTAD (2005) suggests that the end of the MFA will change the location of Foreign Direct Investors and cause FDI to leave countries that previously enjoyed quota access and move to countries with lower wages or other production advantages. The World Bank (2009) suggests that the end of the MFA may mean a decrease in both exports and FDI in countries affected by this regime change. Wacziarg and Wallack (2004) examine the inter-sectoral employment effects for 25 liberalisation episodes in a set of developing and transition economies. At the 3-digit level the employment effects of trade liberalisation are pronounced. Wacziarg and Wallack (2004) also report that a liberalisation episode five

years in the past will reduce the two-year growth in manufacturing employment in a country by 4.02 percentage points. Revenga (1997) finds small employment effects for Mexico and small employment effects are found in other studies as well. Currie and Harrison (1997) provide evidence as to why such employment effects might be small. They analyse data from Morocco and find that the impact of trade on wages and employment depends on the degree of imperfections in the output market. For competitive markets in which profit margins are small, import penetration reduces employment. By contrast, for those markets with larger profit margins, virtually no change occurs in wages or employment. These results led the World Bank (2009) to conclude that, at least for these cases, increased trade exposure was positive.

Chapter 5 will start by noting that with the creation of the World Trade Organisation (WTO) and the complete removal of preferences, the future of the Mauritian EPZ, in particular the textiles and clothing sector (which constitutes the bulk of EPZ exports), seemed very uncertain. Most studies related to the removal of preferences on textiles and clothing generally reveal welfare losses for countries such as Mauritius. Chapter 5 will analyse the evolution of the Mauritian manufacturing sector and its various product groups during and after the removal of preferences to see whether there was actually a sudden fall in exports and employment (the two performance indicators), and whether that fall was specific to textile and clothing products once the preferences had been removed.

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CHAPTER 2

THE CREATION OF THE MAURITIUS EXPORT PROCESSING ZONE FROM A POLITICAL ECONOMY PERSPECTIVE

2.1 Introduction

Political economy broadly brings together economics, law and political science to explain how political institutions (especially, the state) operate in relation to the economic system and how these institutions affect the economic outcomes within a country. Political institutions create, enforce and apply laws in the country. Mainstream political economy approaches tend to assume that voters, politicians and bureaucrats take self-interested analyses of how competing interests strive for power and control over limited resources, and examines how public policy is created and implemented within this framework (Tullock 2008). According to Alesina (2007), in recent years political economy has gained popularity because it sheds light on complex processes such as economic reforms, the interaction of political institutions and economic outcomes, all of which are both political and economic phenomena.

In this chapter the adoption of an Export Processing Zone (EPZ) in Mauritius will be explained from a political economy perspective. The chapter will also seek to understand why the country successfully implemented the EPZ strategy. As a contribution to the existing literature on the Mauritius EPZ story, the chapter brings together a range of existing explanations to form an integrated political economy framework.

The chapter will show that the role of inclusive institutions, ideas, ethnic diversity, luck, leadership and the choice of a dual-track economic strategy make up a broad framework within which the creation of the EPZ in Mauritius can be explained, while the role of compromise-based politics is also of major importance.

At the time of independence in 1968, the Mauritius government inherited from the colonial power a poor country that relied on the sugar mono-crop and used an industrialisation strategy based on Import Substitution Industrialisation (ISI). This was not helping the economy to move forward on the growth path. This chapter analyses the gradual movement of Mauritius away from the ISI – while still retaining part of it – towards the establishment of an Export Processing Zone (EPZ) which would become the engine of economic development of Mauritius during the 1980s. The outline of the chapter is as follows: It starts with a review of previous studies on the political economy of Mauritius which outlines how different authors have explained the success of Mauritius. The next section defines the recent approaches to explaining the EPZ story, based principally on inclusive

institutions. To formulate the approach, recent studies on political economy which have examined the growth of developing nations from different perspectives – namely, those by Acemoglu and Robinson, and Lin and Qian – have been drawn from to explain the economic growth of nations.

Thereafter a brief factual overview is given of the history of Mauritius prior to independence, which will explore the recent history of the island to see how institutions emerged, and what kinds of institutions were created by the French and British colonisation of Mauritius. The overview will also consider why ethnic politics mattered when the Indians, Africans, Chinese, etc. came to Mauritius. It will also look at when and how the political elite emerged and what the ethnic considerations were at the time of independence.

This is followed by a descriptive analysis of the economic strategy of Mauritius prior to and after independence. Starting with the sugar mono-crop strategy, the colonial government attempted to diversify through the Import Substitution Industrialisation (ISI) strategy in 1964. At the time of independence, Mauritius chose to keep the ISI strategy, even though it was not providing the expected results, while at the same time moving the economy towards the EPZ.

The final section analyses the EPZ story in Mauritius from a political economy perspective. It draws on the factors that jointly provided the framework to explain the successful creation of the EPZ in Mauritius.

2.2 Previous studies on the political economy of Mauritius

Mauritius has been recognised as a uniquely successful example of EPZ implementation. Several authors have therefore discussed the Mauritius ‘miracle’ and the success of the EPZ. Their contributions to the debate on the Mauritius story are discussed next in chronological order, starting with the earliest publications.

During the early 1990s when Mauritius was reaping the full benefit of its ‘economic miracle’, academics started to show increasing interest in the Mauritius story. Bowman

(1991) is one of the first to explain the Mauritius miracle with a tentative attempt to look at it from a political economy perspective. He expresses the view that though the unique ethnic composition of Mauritius could be a causal factor behind Mauritius's success, ethnic diversity cannot provide the full explanation. He argues that it is necessary to look beyond ethnicity for the overall economic, social and political structures which tie society together into one coherent whole. These institutions determine how ethnicity will play out in policy decisions.

Bowman (1991) also argues that unlike many developing countries, political power in Mauritius was balanced by economic power. This plurality of power, he believes, is at the core of the success of democracy in Mauritius. A strong opposition and a lively press have also contributed to the deepening of democracy.

Brautigam (1997) focuses more explicitly on the role of institutions in her attempt to explain Mauritius's success. She argues that democracy was achieved in Mauritius through the inclusion of the major social actors (ethnic groups) in the reform process. As a consequence, successive governments were able and willing to compensate losers, reward cooperation and maintain reform coalitions. She argues that it is critical to understand why and how particular institutions were chosen, and why political actors in Mauritius agreed to abide by the rules they crafted when similar rules in so many African countries have been suspended. While she agrees that economic interests played a role, she maintains that choices cannot purely be a function of such interests. The independent role of ideas and ideology has to be acknowledged. Shared ideologies can shape peoples' perception of their interests, increase trust and cooperation (social capital), and facilitate difficult economic policy reforms.

Subramanian and Roy (2001) suggest that the success of the EPZ can, on the surface, be explained by the financial incentives provided to EPZ firms by the Mauritian government. However, a deeper analysis of the political economy factors behind the implementation of this EPZ leads the authors to draw on the 'idea' concept introduced by Romer (1992). Romer argues that initially Mauritius successfully imported ideas from foreigners, which led them to choose and structure the EPZ in a certain way. The EPZ then made investment attractive to foreigners, who in turn brought new productivity-enhancing 'ideas' into

Mauritius. Subramanian and Roy question this argument by pointing out that the introduction of EPZs was not unique to Mauritius. EPZ facilities were also set up in other African countries, including Senegal, Madagascar and Cameroon. These countries were not nearly as successful as Mauritius. Therefore, to explain the success of Mauritius we need to go beyond the mere importing of ideas.

Subramanian and Roy highlight the importance of institutional quality in explaining Mauritius's relative success. Mauritius ranks well above the average African country with respect to all indices of institutional quality, political as well as economic. They argue that EPZs have failed in most countries because institutions and governance have not been able to manage the corruption and inefficiency that tend to undermine the performance of EPZs in other countries. They maintain that the well-paid Mauritian civil service, which emerged from the political bargain between the political and economic elites at independence, is the key to explaining the low levels of corruption and inefficiency in Mauritius's EPZ programme.

Subramanian (2009) takes it further by critically evaluating the four factors that have been advanced as explanations for Mauritius's growth success: the initial conditions, openness to trade, foreign direct investment and institutions.

He argues that the excellent performance of Mauritius during the 1980s cannot be attributed to favourable initial conditions, as Mauritius was far worse off on almost all indicators except human capital than the average African economy back in 1968.

With regard to the openness strategy, Subramanian (2009) highlights the 'heterodox opening' strategy, which segmented the export and import sectors. Mauritius ensured that the returns from exports were high and prevented the restrictive trade regime prevailing in the rest of the economy from spilling over to this sector. The high returns of the export sector ensured that domestic resources were not diverted to the inefficient domestic sector. The institutional mechanism for achieving the so-called segregation of the export sector from the importing sector was the creation of the EPZ with a lot of policy instruments as incentives – for example, duty-free access, tax incentives and flexible labour market conditions. Mauritius thus managed to maintain a balance of incentives between the export- and import-competing sectors. This was achieved through a high level of intervention in

both imports and exports. On the one hand, imports were restricted through high trade barriers to protect domestic producers practising Import Substitution Industrialisation (ISI). On the other, extensive support was provided to exporters by means of the EPZ to offset the inefficiencies associated with import substitution.

In his paper Subramanian (2009) further questions Romer's arguments about importing ideas, by adding that the Mauritius EPZ sector – unlike many other countries – had a substantial local presence. So it was not merely foreign ideas that provided the basis for the success of the Mauritian EPZ.

He again stresses that these factors are proximate rather than underlying causes of Mauritian growth success. The favourable trade environment and the creation of an EPZ were not unique to Mauritius.

It seems that strong institutions may provide a good explanation for the success of the Mauritian EPZ. Since independence, Mauritius has been a democracy with strong participatory institutions. However, econometric tests undertaken by Subramanian (2009) reveal that even if institutions are included, there is still a significant unexplained component of Mauritian growth.

To account for this gap, Subramanian (2009) turns to diversity to explain the exceptional performance of Mauritius. Diversity had three important benefits, he argues: it was a movement of communities or diaspora that turned out to have important linkages with the rest of the world, thus creating positive externalities for the country; it forced the need for economic balance between groups. This explains, for example, the preservation of the sugar industry, which remained under the control of the white community. It also forced the need for participatory political institutions that were important in maintaining stability, law and order, the rule of law and mediating conflict.

Fowler (2009) notes that countries that have pursued two-track gradualist reform paths have successfully proved that there is no uniform way of approaching growth. The preferences that Mauritius gained from trade agreements with the EU and USA led to large profits. These were partially reinvested in tourism, manufacturing and basic infrastructure. However, Fowler notes that there was a clear disincentive against diversification within the

market. The government of Mauritius then intervened and offered as many incentives as possible to attract businesses to the EPZ.

Frankel (2010) recognises that Mauritius made many good policy decisions that contributed to the country's success – namely, the establishment of the EPZ, diplomacy regarding trade preferences from Britain, Europe and the USA, spending on education and later free education and facilitation of business. He attributes these policies both to the deliberate choices of individuals and to effective political institutions – namely an appropriate parliamentary system, no expropriation of the elites at the time of independence, no single elite group dominating others, no army, and a vigorous opposition and media. However, he argues that any country can in principle adopt effective institutions and strong policies at any time. What was unique about Mauritius, the Seychelles and Cape Verde, for that matter, was that they did not have any indigenous populations. Everyone came from somewhere else.

How does that make them different from other countries? Frankel (2010) provides two plausible angles: migrants' self-select for vigour and initiative, and they pass these traits on to their descendants; or most countries have nativist factions, children of the soil who resent newcomers regardless of their merits – or perhaps because of their merits. Thus, if everyone came from somewhere else, nobody could claim special privileges. This creates a unique combination of ethnicities and as a result the Franco-Mauritians were willing to trade off their past dominance of political power for guarantees under a post-independence system that they would keep their sugar plantations. Indo-Mauritians now had the political power and the Sino-Mauritian community developed businesses through their links with their country of origin.

The role of institutions and the importance of inclusive political power emerge as the dominant explanations for the establishment and successful implementation of the Mauritian EPZ. The 'heterodox opening' (dual-track approach) with intervention in both exports and imports was clearly important as it allowed the state to balance the vested interests of economic power with those of political power.

As a result, the Franco-Mauritians would retain their economic power in the form of sugar plantations and the ISI businesses, while the Indo-Mauritian community would benefit

from jobs in the civil service as part of the transfer of rents from the sugar plantations to the government. Furthermore, part of the sugar plantations owned by Franco-Mauritians would be sold to the Indo-Mauritian community when the Franco-Mauritians community decided to move towards the ISI and EPZ. As for the Sino-Mauritian and Creole populations, they would become the owners of the first EPZ companies, and many of their employees would be the poor members of their respective communities, which helped to address the unemployment problem in the country.

Had the government chosen to go the route of nationalisation, most of the Franco-Mauritians would have left the country. Similarly, if a policy of complete liberalisation was adopted and the ISI abandoned, the Franco-Mauritian elites – who had the economic means to adjust and cope with liberalisation – would have benefited, but this would have been at the expense of the new bourgeoisie that was just developing in the Indo-Mauritian community as a result of the ISI. The interests of the new bourgeoisie, which was the political support base of the Labour Party, would have been jeopardised. Finally, if the status quo was maintained with the reinforcement of the sugar plantation industry, it would have brought in all the elements, making for political instability in the young and fragile nation. Frustration from within the broad Indian community would possibly have led to Mauritius becoming a failed state, like so many African countries that achieved independence at around the same time. Therefore, the careful use of a strategy to protect vested interests while at the same time broadening the base for the creation of larger elite, together with other factors, provided the necessary conditions that were important for the successful creation of the EPZ.

Many of the political economy factors behind the success of the EPZ have been uncovered, but no one explanation appears to be convincing on its own. The way forward must be to pull together all of these strands towards an integrated framework. Such an explanation must, furthermore, be based on recent developments in the political economy discourse which identifies and brings together a number of factors. The factors that played a role were: inclusive institutions and the protection of vested interests, ideas, ethnic diversity, luck, the leadership role of the political elite and the choice of dual-track economic strategy. All these factors considered together, even though some may be seen as more important

than others, will explain the choice of the EPZ for Mauritius and its successful implementation.

2.3 Recent approaches to understanding EPZs

What is being argued in this part of the chapter is the need for a theoretical framework within which we will evaluate the impact of each of the causal factors identified in the creation of the EPZ in Mauritius. The previous section has identified some of the factors, but has not provided a theoretical framework within which these factors can be integrated.

After an individual analysis of each causal factor, a framework will be proposed which will show that the different factors in their combination has created the conditions and enabling environment for the EPZ in Mauritius. In this way a more comprehensive political economy explanation for the EPZ successes achieved in Mauritius will be provided.

The theoretical framework through which the factors will be analysed will be drawn from recent studies on political economy, where the authors explain the economic growth of nations from different perspectives.

The first of these studies that sets the framework for a theory on inclusive institutions and protection of interests was developed by Acemoglu and Robinson (2012). They argue that some countries are poor because they are governed by a narrow elite whose rules are characterised by a concentration of political power and where the wealth created is shared only by those who are very close to those in power. Poor countries are poor because those who rule choose deliberately, not by mistake or in ignorance, to create poverty. Differences between rich and poor countries come down to differences in economic and political institutions, the rules and regulations by which the economy operates, and the incentives for motivating the population to work.

The authors outline the contrasting examples of economic institutions of South and North Korea, and the United States and Latin America. South Korea and the USA have inclusive economic institutions that encourage economic activity, productivity and economic prosperity. Protection of private property is central to attracting investors and business activities. Also included in the concept of inclusive economic institutions is the rule of law, which includes the role of the state in imposing order, preventing corruption and enforcing

contracts between private parties as well as the restrictions the law places on the power of the state. Through a comparative study of different countries, the theory developed by Acemoglu and Robinson (2012) demonstrates that successful countries which have inclusive economic institutions create inclusive markets. This in turn gives the population the freedom to pursue activities they are best suited for but also provides a level playing field, giving everyone an equal opportunity. On the other hand, countries that choose the path of extractive economic institutions would force people to work in specific sectors regardless of their skills and there is also a lack of property rights for all but the narrow elite.

The second important component of the theory is that the type of political institutions that countries choose will determine whether they will remain poor. These institutions can either be extractive or inclusive. If the distribution of power is narrow and unconstrained, then the political institutions are absolutist or extractive – where those who are in power would be able to set up economic institutions to enrich themselves and increase their power at the expense of the rest of the population. In contrast to this, we have inclusive political institutions that distribute power broadly in society and subject it to constraints. Instead of being vested in a single individual or narrow group, political power is controlled by a broad coalition of many groups. But for it to work, the power of the State needs to be sufficiently centralised and strong.

Therefore, the choice of political and economic institutions will determine whether countries encourage or impede economic growth. The politics of institutions is central to the quest for understanding the reasons behind the success or failure of nations. Inclusive political institutions in support of inclusive economic institutions lead to sustained prosperity.

A very important issue behind the success of inclusive institutions is embracing what Schumpeter called ‘creative destruction’ through technological innovation. Innovation makes societies prosperous, but at the same time it leads to replacement of the old with the new and the destruction of economic privileges and political power of certain elites. Therefore, for sustained economic growth we need new technologies and methods of doing things, which will come from newcomers, i.e. a new ‘breed’ of entrepreneurs or innovators

who come from outside the existing elites. This new ‘breed’ will bring in innovative ideas and technologies that will benefit the broader society instead of only a limited few. Inevitably the privileges of some existing elites will be lost, as the newcomers enlarge the base of those benefiting from the innovations. And if all this is carried out within the framework of ‘inclusive institutions’, we will have new ideas coming from different quarters within the society, which will lead to a broadening of elites and the economy. Of course, one should naturally expect resistance from conservative elites whose power and privileges are threatened.

Acemoglu and Robinson (2012) also analyse the role of the media in the development of inclusive institutions. According to them, the media can help in the empowerment of societies by giving information about whether there are economic and political abuses by those in power. The media plays an important role in informing the public and coordinating their demands against forces that are trying to undermine or hamper the creation of inclusive institutions. However, this will only be translated into meaningful changes when the broader section of the society is mobilised to carry through political changes, but does so not for sectarian reasons or to take control of extractive institutions, but rather to transform extractive institutions into inclusive ones.

Lin (2009) argues that while the importance of institutions is undeniable, the question of sudden and sustained growth in some countries remains unanswered. Taking the examples of Europe in the late nineteenth century and Japan, and the Asian tigers after the Second World War – which all succeeded in achieving rapid growth during their transition periods – he discusses the reason behind the fact that although these countries have succeeded, most other developing and transitional countries have failed to fully exploit such potential.

While summarising the literature of what previous economists have proposed as the fundamental determinants of economic performance – namely: luck, geography, history, institutions and culture - Lin (2009) sees continuous technological upgrading as the most important engine for a country’s economic growth. Related to this is the notion that ideas are the most vital determinants of a country’s growth. Lin’s (2009) perspective is in line with the new growth theory advocated by Romer, which stresses that with the right ideas a developing country will be able to exploit the advantages of backwardness and achieve

growth. However, Lin (2009) modifies this argument by pointing out that, globally, dominant ideas which are derived from development successes in advanced countries are not applicable to developing nations. Successful governments facilitated the adoption of industries and technologies suited to their comparative advantage and determined by their endowment structure at every phase of their development strategies, rather than focusing on the dominant social thinking based on a strategy of modernisation through heavy industry.

Lin (2009) also identifies the government as the most important institution in any country. If the government makes good use of its powers, it can gradually reform the country by providing better incentives for workers and businesses, improve the macro-economic variables and provide better resource allocation for the country. The policies adopted by the government are therefore key to the success or failure of the economy's development strategy. In the same vein, Lin (2009) posits that we have to understand the leadership and motivation of the political leaders who run the government. The political leaders' motivations are not necessarily selfish, especially not those leaders who fought for their nation's independence.

Through a detailed account of the success of the East Asian economies, Lin (2009) highlights that the success involved an element of luck and that resource availability and a long-established civilisation are not necessarily conditions for economic success. It is possible for a nation to take a new turn if it is fortunate to have the right leadership at the right time. The success or failure of economic policies in a country, however, need not be a matter of destiny, if its political leaders know what policies are right for the nation.

Qian (2001), on the other hand, explains the unprecedented economic growth of China on the basis of its institutional reforms and how the transitional institutions of markets, firms and government worked in China. The study demonstrates that China, despite the absence of many conventional institutions such as the rule of law and secure property rights, has managed to grow at an impressive rate. According to Qian (2001), there is a need to broaden our perspective on institutions. The Chinese case shows that during the transition period, economic growth does not require perfect institutions, but even imperfect and sensible institutions can bring the required growth. The argument put forward by Qian

(2001) is that institutional developments need to fit into the initial conditions and be made compatible with the interest of the ruling power. This is in contrast with most African countries' institutions, which were imported and thus at odds with the political culture and the population, and incompatible with the ambitions of the political leadership. To illustrate the gradual manner in which the reforms were introduced in China, Qian (2001) indicates that China's reform succeeded without complete liberalisation, without privatisation and without democratisation.

Qian (2001) analyses the successful reforms and failure of the Chinese institutional reforms. The most notable successful reform, which is similar to the Mauritius case, is market liberalisation through the 'dual-track' approach under which prices were liberalised at the margin while quotas were maintained. There were two tracks: the plan track and the market track. Under the plan track, economic agents are assigned rights to and obligations for fixed quantities of goods at fixed prices as specified in the pre-existing plan, but at the same time a market track is introduced according to which economic agents participate in the market at free market prices, provided they fulfil their obligations under the plan track. This meant that planned quantities continue to be delivered at plan prices, but additional quantity above that is sold at market prices. The two-track approach provided for economic efficiency, while at the same time keeping the quotas, which was compatible with the interests of the ruling group. In this case the prevailing conditions and the role of existing institutions play an important role in the implementation of the reforms.

2.4 Integrating these insights into a comprehensive political economy approach for Mauritius

Based on the above theories, it is argued first of all that institutions played a significant role in the choice and implementation of the EPZ in Mauritius. The role of democracy in restraining the power of elites, the constitution, the protection of private property, social welfare, government policies towards macroeconomic stability and measures to attract private entrepreneurs and investors all worked together towards making Mauritius function in an inclusive political and economic institutional framework. With this framework in place, Mauritius was able to avoid political instability, contrary to the prophecy of doom for Mauritius from renowned Noble Laureate James Meade. The role of the press and the

strong opposition also helped to maintain a vibrant, stable democracy, which gave investors the confidence to choose the Mauritian EPZ.

Furthermore, with the creation of the EPZ Mauritius did not experience the big bang process of creative destruction that Acemoglu and Robinson (2012) assume as being part of inclusive institutions. The movement towards the EPZ was gradual, as the government moved slowly towards the new sector and was wise enough to keep the old elites happy by maintaining the ISI and sugar plantation.

Next, Lin's (2009) view on the vital importance of ideas will be applied to the creation of the EPZ in Mauritius. The idea of creating an EPZ in Mauritius came from Prof. Lim Fat, whose successive visits to Taiwan generated the idea that the concept could also be adapted for Mauritius. This idea was supported by the government, although a movement towards EPZ was not the dominant social view at the time. The easiest route would have been nationalisation and not some kind of privatisation. With Lim Fat's idea and the government's role as a facilitator, the EPZ was successfully implemented in Mauritius.

Using Lin's (2009) perspective on the leadership role of government, it will be noted that the newly independent government of Mauritius showed good leadership in its decision to affiliate itself to the Organisation of African Unity, which would later give Mauritius access to export its EPZ products duty-free and quota-free to the European market through the ACP/EU Agreement.

The luck factor will also be introduced, since Mauritius was lucky enough to have a unity government barely one year after independence. The political leaders were also ideologically inclined towards Fabian socialism, which favoured a strong partnership between the private and public sectors. This ideological inclination at such a time helped in the quick decision to implement the EPZ successfully, especially if it is taken into consideration that the trend among newly independent nations during the early 1970s was towards nationalisation.

Finally, Qian (2001) highlights the importance of the dual-track approach, keeping Import Substitution Industrialisation (ISI), while simultaneously implementing the EPZ. This

strategy kept the ruling elite satisfied, while also diversifying the economy towards a new engine of growth.

All of the factors mentioned provided the enabling environment to produce the successful launch and implementation of the Mauritius EPZ. What distinguishes this approach from other studies is that although these factors are recognised as important in the implementation of the EPZ in Mauritius, it is shown that compromise-based politics underpinned all these factors

2.5 History of Mauritius prior to independence

To understand the complexity of the Mauritian society at the time of independence and the functioning political and institutional structure, one needs to go back to the history of the country. With this perspective as the background, a better position will be gained to analyse the political and economic strategies put forward by the political elite at the time of independence.

According to Selvon (2001), the Portuguese discovered Mauritius around the year 1500. The island was uninhabited and rich in ambergris, ebony and ivory. The Portuguese did not show any real interest in settling on the island because they did not find the resources they were looking for, namely, precious stones, precious metals, spices or silk. They did, however, use Mauritius for occasional stop-overs on their way to the East.

The Dutch were next to occupy the island from 1598. They named it Mauritius after the President of the Dutch Republic, Prince Maurice of Nassau. They found Mauritius a safe, uninhabited island, useful for Dutch ships going to and from the Far East around the Cape of Good Hope. The Dutch formally colonised the island in 1638. However, they did not occupy the island with the intention of developing the country. They had a more extractive strategy in mind, aimed at depleting the ebony forests and ambergris. When these were considerably depleted, they destroyed their plantations and buildings and left the island in 1658, concluding that Mauritius did not yield sufficient profits. They also estimated that no other colonial power would be interested in the island. The only people who remained

were runaway slaves. The Dutch then came back in 1664, but finally abandoned the island completely in 1710.

The French took possession of Mauritius in 1715, but only began to settle there in 1721 after renaming it 'Isle de France'. The French came with a slightly more inclusive approach, as they quickly started building the first religious institutions on the island. Slaves from Madagascar were sent to the island, as were a number of Indians. During the French period, especially when Mahe de Labourdonnais was governor of the island from 1735 to 1740, Mauritius became a stable and promising colony. He created several businesses and started sugar production on a commercial basis. He also initiated the refining of sugar with machines imported from France. He built the first major non-religious institutions on the island – namely, the city of Port Louis and the Government House. He encouraged workers to become entrepreneurs and turned Port Louis into one of the most important harbours in the Indian Ocean. After him, other French governors put in place the judicial system, i.e. the Code Napoleon (which remains in Mauritian law today). They also created the police force and established the first school in Mauritius.

Selvon (2001) notes that towards the end of French rule the white colonisers were divided socially into capitalists, 'negotiants' (traders and businessmen), urban artisans and rural cultivators. These French descendants were faring rather well and independently of France, and a clear Mauritian identity was being expressed to protect their interests. The coloured population also began to develop a sense of Mauritian identity.

In 1810, after the battle of Grand Port, the British took possession of the island and renamed it Mauritius. It remained a British colony until independence in 1968. Apart from some of the French settlers who returned to France, a number of the affluent colonists remained. They had also refrained from actively defending the country against the British invasion. The British on their side offered generous terms of capitulation to the white French colonists, by offering to respect the country's laws and customs. The use of the French language was to continue and the Catholic religion would remain. In addition, the slavery system was maintained for a while and discrimination against coloureds continued. In response, coloureds developed a sense of opposition to the white colonists.

The significant feature of the transition from French to British colonial rule was the peaceful transfer of power, whereby the institutions created by the French would be preserved and even reinforced, and where the interests of the white French colonisers would be maintained. This led to a healthy relationship between the old and new elites.

The first British governor was Farquhar, who believed in free trade and the expansion of agricultural activities. He created the first Colonial Bank in 1813. Farquhar provided fiscal incentives and the modernisation of techniques and equipment for agriculture. He abolished duties on importation of agricultural machinery and during his reign, carts which were previously pulled by slaves were now dragged by mules, asses and bullocks. There was increasing use of machinery to replace human labour. He also improved the road networks on the island. Even after his departure to Britain in 1823, he continued to promote the interests of the Mauritius sugar industry. He lobbied for the reduction of duty on Mauritian sugar imports to Britain, which resulted in the Mauritian duty set at the same level as West Indian duties. This gave a boost to the Mauritian sugar industry. Following this development, the plantation community moved readily towards sugar plantation, cutting down forests and uprooting other crops to replace them with sugar.

As a result of this, the country needed new sources of labour. It turned to India and China for cheap labour as early as 1825. By the time slavery was abolished in 1835, many of the plantation slaves had left the sugar estates. Teelock (2001) notes that once slaves were freed, they refused to work on sugar plantations for the low wages on offer. Planters were able to deal with this by turning to indentured labourers from India. Approximately 453,000 labourers were recruited from India and they came in two phases – from 1834 to 1838, and from 1843 to 1880.

Not all Asians were confined to working on the sugar plantations, however. Some became small planters, while others made up a growing urban bourgeoisie. In contrast to the elite among the free population (coloured and ex-slaves) who had arisen to positions in the civil service through education, the Asian urban bourgeoisie – made up of Indians and Chinese – had a distinctly commercial character. There was also an Asian rural bourgeoisie. The rural bourgeoisie tended to follow the path that free people had followed earlier, namely education as a ladder to social and economic advancement. The Asian rural bourgeoisie

who acquired Western-style education rose up the social ladder much faster and emerged as political leaders.

At the end of the 19th century there was a movement to reform the constitution to extend the electoral vote. This movement was driven by the coloured population, who had over the years been using their position of social equity to become educated, claimed inheritance property from whites and entered the top ranks of government service.

The political consciousness of Indo-Mauritians only really awakened at the beginning of the 20th century. The visit of Mahatma Gandhi to Mauritius in 1901 is viewed as the catalyst to the awakening of Indo-Mauritian political consciousness. He sent Indian lawyer Manilall Doctor to raise the social consciousness of the Indian community. Manilall Doctor left in 1911 after having successfully sown the seeds of opposition and Mauritians began to take up the cause of indentured labourers.

The movement for independence for Mauritius needs to be placed in the international context which had begun to impinge on most African and Asian countries in the late 19th century. This was increased with the economic crisis that occurred in British colonial territories, while World War II gave further impetus to the movement, as Britain was no longer able to maintain a vast empire (Teelock, 2001).

The colonial power ranked Mauritius as a complicated territory which needed a complex central government because of its small size and the diverse ethnic composition of its population. The kind of political system that the British were thinking for Mauritius would have to take into consideration the issue of adequate representation of minorities in a system of democratic elections based on universal suffrage.

Mauritian historians have followed three different approaches to the issue of the struggle for independence. The first is an ethnically-based approach, according to which all Hindus, who represented the majority of the voting population, were associated with the Labour Party and would fight for independence, while the Parti Mauricien (later PMSD) representing the Creoles (Afro-Mauritians), coloured and whites were against independence and in favour of some kind of association with the British. Ethnic politics

was very much present during the 1960s in Mauritius, which culminated in racial riots in 1967, just one year before independence.

The second approach is the class-based approach, seeing the movement for independence as a class struggle between the plantation owners represented by the PMSD and the emerging Indo-Mauritian bourgeoisie represented by the Labour Party.

The third approach was that Mauritius was becoming increasingly expensive to maintain as a colony, especially if we take into consideration the fact that the British Empire was faced with a severe economic crisis. Thus, granting independence was the most economically profitable option for the British.

As regards the political structure of Mauritius prior to independence, Selvon (2001) gives a clear summary of the political currents prevailing in Mauritius at that time, which consisted of three main tendencies:

(i) The socialist current represented by the Labour Party, which consisted in 1948 of a programme of nationalisation of sugar estates and a radical Gandhian approach to socio-economic and cultural development. The approach of the Labour Party changed, however, as the country got nearer to independence. It became more conciliatory with British traditions, scrapped the nationalisation programme and opted for a mixed economy with free enterprises, plus a substantial welfare state and universal suffrage.

(ii) The oligarchic current, which wanted to stop the constitutional evolution to self-government and independence. They finally accepted independence in 1968 without creating much of a problem and were very cooperative after independence. This group was essentially composed of whites and supported by rich sugar barons and various politicians from a liberal background. Selvon (2001) notes that the oligarchs were led by two Franco-Mauritian leaders – namely, Fernand Leclezio and Maurice Martin. The oligarchic faction would be completely wiped off the political landscape after the 1948 elections. It adapted by means of pragmatic arrangements with the PMSD and Labour Party and eventually helped them to form coalition governments after independence, and well into the 1980s. The new Indo-Mauritian bourgeoisie ended up cohabiting very well with the white sugar planters.

(iii) The centrist-elitist liberal current from which the founder of the Labour Party, Dr Curé, broke away to start defending Indian immigrants and subsequently form the Labour Party in 1936. The centrists were the first to challenge the oligarchs on their own ground since the beginning of the parliamentary system in 1886.

Eventually Mauritius would experience its first real two-party system in 1952 with the creation of the Ralliement Mauricien, which provided the Labour Party with its first serious political adversary after the fall of the oligarchs had left a vacuum in Mauritian politics.

At the time of independence the British left Mauritius with a vibrant democracy, a strong opposition and, more importantly, a fully developed Westminster-style system of parliament. In addition, the dominant Labour Party had over the years undergone reforms which ensured it would not adopt radical nationalistic tendencies. Therefore, the legacies of British rule provided the country with a political and economic system which encouraged the development of inclusive institutions on the island.

Acemoglu and Robinson (2012) attribute the economic successes largely to the evolution of historical institutions. It should be noted that Mauritius achieved political centralisation under the Labour Party, and later on through the unity government. They had a constitution at the time of independence, which made provision for the protection of private property, good governance and the rule of law, as well as a Westminster-style parliament where all members of the community would be represented. These institutions have functioned well since the beginning of their independence to this day. The orientation of the economy was also towards a mixed economy, with free enterprise constituting a significant portion of economic activity. Thus, at the time of independence Mauritius had a history of inclusive economic and political institutions, and all the necessary conditions were in place for this to continue.

2.6 Descriptive analysis of the economic strategy adopted by Mauritius prior to and after independence

2.6.1 *Diversification through import substitution*

In the early 1960s when the Mauritian economy was still heavily dependent on the revenues generated by sugar exports, the government appointed a Royal Commission headed by

Prof. J.E. Meade to assess the state of the economy. The commission's report stressed that Mauritius needed an economic diversification strategy if it wanted to avoid social and political unrest and, ultimately, economic bankruptcy. The commission also took note of important barriers to economic development (YeungLamKo, 1998). The commission pointed out the absence of mineral resources, the smallness of the domestic market and the remoteness of the island from sources of raw materials and from foreign markets. Finally, apart from the sugar industry, the rest of the Mauritian economy suffered from a shortage of management and technical skills, as well as capital for investment purposes (World Bank, 1978). Despite this, the Meade Report (1961) advised Mauritius to industrialise in order to be able to cope with the pressing population and unemployment problems. The government duly adopted an Import Substituting Industrialisation (ISI) strategy (YeungLamKo, 1998).

To encourage manufacturing activities, legislation was passed in 1964 which provided a host of fiscal and other incentives for setting up ISI industries. Companies or industries set up within the ISI legal framework were issued with 'Development Certificates' and were known as DC companies. They were protected from external competition in the traditional sense through protective tariffs and import quotas.

YeungLamKo (1998) gives some of the following fiscal and financial advantages that were given to companies which were awarded Development Certificates (DCs):

- (i) protective import duties for infant industries
- (ii) suspension of import duties on materials and equipment not locally available
- (iii) import quota protection of up to 80% of the market
- (iv) long-term loans at favourable rates from the Development Bank of Mauritius for up to 50% of long-term capital employed
- (v) free repatriation of profits.

Although the DC strategy led to the establishment of some industrial undertakings, it did not lead to the reduction of unemployment. In fact, Hein (1989) states that between 1964

and 1968 only 1,200 jobs were created in DC industries and the labour force was growing at a faster rate than jobs were being created.

When Mauritius gained independence from the British in 1968, the prospects of economic growth and development looked bleak. Commission leader and Nobel Prize winning economist James Meade was pessimistic about Mauritius's future prospects. The country faced high levels of poverty, low economic growth and rapid population growth. Meade reported that *'heavy population pressure must inevitably reduce real income per head below what it might otherwise be. That surely is bad enough in a community that is full of political conflict ... In the absence of other remedies, it must lead either to unemployment (exacerbating the scramble for jobs between Indians and Creoles) or to even greater inequalities (stocking up still more the envy felt by the Indian and Creole underdog for the Franco-Mauritian top dog). The outlook for peaceful development is poor.'*

Real GDP growth rates for the economy were erratic and never exceeded 5% during the period 1964-1970. This erratic growth is attributed principally to the fact that GDP growth depended heavily on the price of sugar on the world market, while adverse or favourable weather conditions affected the production of sugar each year. The real average GDP growth rate was at an alarming -1.07%. Negative real growth rates were recorded for three years during that seven-year period, as shown in Table 2.1.

Table 2.1 Real GDP growth and sugar prices, production and exports

Year	Real GDP growth rate (%)	World raw sugar price (cents per pound USD)	Sugar production in Mauritius (000 tons)	Sugar exports from Mauritius (000 tons)
1963	-	8.50	-	
1964	-9.44	5.87	-	
1965	4.41	2.12	664	578
1966	-4.45	1.86	562	571
1967	4.33	1.99	638	531
1968	-8.15	1.98	597	578
1969	4.93	3.37	669	592

1970	0.85	3.75	576	582
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Sources: (i) *Mauritius, National Accounts*
(ii) *Bowman (1991) p. 107*
(iii) Online ([http://www.ers.usda.gov/Briefing/Sugar/Data/Table 03.xls](http://www.ers.usda.gov/Briefing/Sugar/Data/Table%2003.xls))

The continued importance of the sugar sector during this period is proof that the ISI strategy was not generating the expected results. This failure of the ISI experience pushed the newly independent government to explore the possibility of implementing export-oriented policies. They could see that such policies had been successfully implemented by other island economies, such as Hong Kong, Singapore and Taiwan.

The ISI strategy was based on the idea that infant industries needed protection from foreign competition before they could mature. The popularity of this policy was strengthened by the shift after World War II to ‘much greater reliance on the State, propelled by the emergence in the west of both the welfare state and Keynesian interventionism’ (Yergin, 2002).

The main advantages that ISI strategy was supposed to bring were increases in domestic employment, more resilience in the face of a global economic environment prone to shocks (such as recessions and depressions) and reducing the disadvantages of being distant from major markets. However, if not properly applied, the ISI strategy could create inefficient and obsolete industries and a focus on industrial development may leave out poorer local communities stuck in rural-based traditional economies.

The main reasons for the failure of the strategy were those that had largely been identified by the Royal Commission. They included ‘the lack of capital, shortage of skilled workers and lack of enterprise and risk-taking regarding new industrial activities’ (YeungLamKo, 1998).

Therefore, at independence the new government was faced with clear options for the country’s industrialisation as a way to get out of poverty. It could either continue with the ISI strategy – which was not bringing the expected results – or it could move towards an

export-orientation strategy. Alternatively, it could find a compromise and apply both strategies at once.

2.6.2 *The move of Mauritius towards export orientation*

At the time that the Mauritian government was grappling with these policy choices, evidence was emerging about successful export-orientated industrialisation (EOI) strategies adopted by some countries. The business community in Mauritius was becoming increasingly aware of this knowledge and newspapers in Mauritius were increasingly mentioning the successful export industries in Puerto Rico and Taiwan (Hein, 1989). Edouard Lim Fat, professor in Engineering at the University of Mauritius, who came from an industrialist family with close ties to the Parti Mauricien, visited Taiwan on a fact-finding mission to get first-hand experience of the Export Processing Zone (EPZ) that had been launched there. The EPZ created distinctive arrangements where firms specialising in exports would qualify for duty-free imported inputs regardless of their location on the island (the background on the EPZ concept is provided in the Annexure at the end of this chapter). Prof. Lim Fat was impressed by what he had found in the Taiwanese Kaohsiung Export Processing Zone (KEPZ). Moreover, Taiwan was a most interesting case for Mauritius because the islands shared many similarities, such as an important agricultural sector, relative smallness of the domestic market, and no indigenous raw materials.

When he returned, Lim Fat (1969) argued that the benefits of introducing an EPZ in Mauritius similar to the KEPZ would be significant. Some of the benefits of an EPZ that he highlighted were:

- (i) a source of income
- (ii) solution to the unemployment problem
- (iii) development of skills in labour and management and the availability of a trained pool of labour
- (iv) introduction of foreign know-how
- (v) development of supporting industries outside the zone

- (vi) increased economic activity
- (vii) improved balance of payment.

Enterprises were thought to be keen to join the EPZ because they would have better access to capital, exemption from certain taxes, speedy setting up of operations, eased foreign exchange controls, guarantee of freedom from nationalisation, and liberal industrial and labour regulations.

Therefore Lim Fat (1969) concluded that, considering the success of the KEPZ and of the similarity in social and economic backgrounds between Mauritius and Taiwan, a similar experiment should be launched in Mauritius.

The government of Mauritius agreed. The EPZ Act was passed in 1970, creating distinctive arrangements where firms specialising in exports would qualify for duty-free imported inputs regardless of their location on the island. The idea, as mentioned before, initially came from Taiwan, but many of the details of the scheme were adapted from Hong Kong and Singapore (World Bank, 1992). The EPZ Act was adopted with the objective of attracting, promoting and increasing the manufacture of export products through the EPZ.

Mauritius therefore gradually turned to an export-led strategy, which began with the setting up of the EPZ in 1970. The government had not, however, totally given up on ISI, and firms that qualified as DC firms continued to receive protection.

ISI protection covered a wide range of manufactured products – ranging from beer, margarine, soap, paint, canned food, glasses, plastic pipes, biscuits and garments to name only a few. Firms that fell under the EPZ scheme, by contrast, were more concentrated within the textiles and clothing sector. By the mid-1980s textiles and clothing constituted as much as 80% of investment and exports and 90% of employment in the EPZ sector (Fowdar, 1991).

The contribution of the EPZ manufacturing sector to GDP increased gradually during the early stages of its setting up. The agricultural sector, however, continued to remain the major contributor to the economic growth of Mauritius throughout the 1970s.

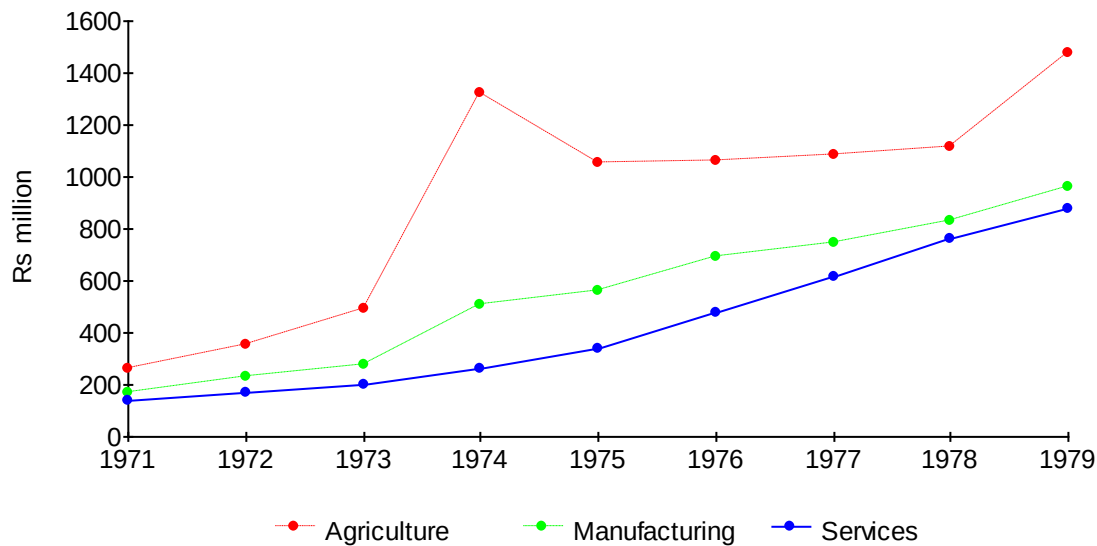


Figure 2.1 Share of Industries (Rsm) 1971-1979

Source: Adapted from CSO Mauritius figures

Figure 2.1 shows that the agricultural sector experienced a small decline from 1974-1977. This was principally due to the fact that other sectors (manufacturing and services) were also starting, though timidly, to work their way to becoming important pillars of the economy. This trend was confirmed in 1983 when the EPZ surpassed agriculture and became the main engine of economic growth.

With regard to employment, it is noted that barely two years after its establishment, the EPZ was already employing more than 2,500 workers, compared to only 1,200 jobs created by the ISI during the period 1964-1968. The EPZ sector therefore provided early signs that it could absorb much of the unemployed labour force. During the 1980s the EPZ became the number one sector in terms of employment generation, when it started employing more workers than all the other sectors taken individually.

2.7 Analysis of the history

Mauritius was one of the first countries in Africa to adopt an EPZ strategy, and has also been the most successful. There are various political economy factors that explain both the decision to adopt this policy, as well as its successful implementation.

In the previous section, we analysed in detail the types of institutions that Mauritius inherited from its colonisers. The Dutch were the first colonisers and adopted a solely extractive strategy of depleting the resources of the island before leaving it for good. The French, on the other hand, left a legacy of formal institutions for the landowning elite and the French language, which is the most widely-used language on the island to this day. The British brought a number of important inclusive institutions such as democracy, a Westminster-style of parliament, the rule of law and a constitution that guaranteed the protection of private property. They also inculcated the notion of good governance. The existence of these institutions and the inclusive approach adopted by the government of independent Mauritius combined in complex ways with other factors – such as ideas, luck, leadership, the choice of a dual-track economic strategy, the ethnic diversity of the population and compromise-based politics – provided the framework within which the EPZ was successfully created in Mauritius.

2.7.1 The inclusive institutions of Mauritius at independence

At the time of independence the ruling party was the Labour Party, under the leadership of Seewoosagur Ramgoolam, which was in coalition with the CAM (Comite Action Musulman) and the IFB (Independence Forward Bloc). This alliance, supported by Hindus and Muslims, narrowly won the independence elections in 1967 with 56% of the votes against the Parti Mauricien, which had the support of the country's minorities and in particular the white land owners and Creoles. Although the Labour Party-CAM-IFB alliance obtained the majority and formed the government, the newly elected government was worried that social tensions might hamper the development of the country, which was divided strictly along communal/ethnic lines.

In 1969, in the name of national unity, Prime Minister Ramgoolam formed an alliance with the opposition, Parti Mauricien (which later became the Parti Mauricien Social Democrate) headed by Gaetan Duval, and with this alliance all ethnic groups were represented in government. This reduced significantly the possibility of ethnic clashes and the government could then use all its resources to think about the economic development of Mauritius. Mauritian ethnic groups tend to feel secure and place their trust in the

government of the day only if someone from their community is a member of the cabinet. Every government since independence has made it a point to have, as far as possible, all communities represented in the cabinet.

Bowman (1991) confirms that the impetus for forming the unity government was Prime Minister Ramgoolam's perception that economic development would be easier with a broad-based government, where power would not be confined to only the small elite with absolute power. When the coalition unity government was announced, the cabinet was expanded from 10 to 21 members. The Parti Mauricien was given seven Ministries, including some core ministries – namely, the Ministries of External Affairs, Tourism and Emigration, Commerce and Industry, and Economic Planning and Development.

The unity government brought together the socialist background of the Labour Party with the liberal ideals of the wealthy Franco-Mauritian landowners, the Sino-Mauritians and Creoles. This socialist-liberal coalition worked in Mauritius principally due to the fact that the Labour Party under the leadership of Ramgoolam was more inclined towards moderate socialism of the Fabian social democratic variety committed to a public-private partnership within the context of a modern welfare state supporting market-sustained institutions (Rodrik, 2003).

In following this course, the government was, in fact, promoting a model based on inclusive economic institutions, as advocated by Acemoglu and Robinson (2012), whereby the private sector was given full support and incentives to operate. Chapter 2 of the Constitution of Mauritius (1968), under the title 'Protection of Fundamental Rights and Freedoms of the Individual', recognises the rights of the individual to protection of the privacy of his home and other property and from the deprivation of property without compensation. Chapter 2 also stipulates the 'provisions to secure protection of the law'. By so doing, the newly independent Mauritius was sending a clear message to potential investors that they could safely invest in the country and that the constitution and the laws of the country would ensure that their properties were protected and the rule of law was applied.

The Constitution of 1968 also made provision under the section on 'Community' for eight additional seats in the National Assembly for the inclusion of minorities, which ensures the

representation of ethnic groups – called the ‘best losers’ system’ – whereby an independent electoral commission appoints up to eight losing candidates to each new National Assembly to represent ‘under-represented’ ethnic groups. The institutionalisation of under-represented ethnic groups secured a place for all minorities in the country and every community had the impression that it would be included in the development process of the country.

Furthermore, political and economic power, which was concentrated in the hands of the British and Franco-Mauritians prior to independence, was adjusted after 1968 – with the political power now moving to the majority Indo-Mauritian community. In addition, the slowly adopted inclusive political approach put in place an institutional arrangement that felt non-threatening to Mauritius’s diverse communities, while an electoral system based on multiparty democracy meant that the rulers of the day were accountable to the masses of people.

The Westminster system ensured the existence of a parliamentary opposition. After the unity government was formed, a new extra-parliamentary opposition – the Mauritius Militant Movement (MMM) – emerged in 1970-1971 and was able to offer people an alternative to the Labour Party. The country also has an independent press which, against all odds, has been able to provide a counter-balance and act as a watchdog over those in power.

The unity government also encouraged a policy of ‘unity in diversity’, i.e. unity without uniformity and diversity without fragmentation, meaning that while recognising that the different components of the rainbow nation came from different ethnic and cultural backgrounds, the philosophy was that they should all work towards a common goal for the advancement of the country. As an example, since independence almost all the major festivals that are celebrated in most of the Asian and European countries are now national festivals in Mauritius with an official holiday for the whole country. Thus the celebration of Hindu festivals like Mahashivaratri, Diwali and Ganesh Chaturthi, along with the Islamic festivals like Id-ul-Fitr and the Christian festivals like Christmas and even the Chinese New Year are all national holidays. This policy of trying to include every community and ethnic group in the development process and the constitution of the

national unity government in 1969 significantly reduced the possibility of the ethnic conflicts that Meade had predicted.

Since independence, Mauritius has been rated very high on institutional democracy indices. For instance, out of the forty-six countries that had at least one operational EPZ during the 1980s, only eight African countries had EPZs (Kreye, 1987). This brings us down to only seven potential competitors to Mauritius in the EPZ during the early stages of implementation. These potential competitors were Ghana, Liberia, Morocco, Egypt, Senegal, Togo and Tunisia. Out of these countries, it would be interesting to have a look at their contemporary political history to see how politically stable each of them was for potential investors.

Without political stability and a broad consensus on policies, it is very unlikely that an economy will thrive. Although local politics has been very animated since independence, Mauritius was one amongst the few African countries that were able to maintain political stability and a fully functional democracy. Mauritius has remained a stable country, with no major political upheavals and has thus attracted investors during the crucial stages of the setting up of the EPZ and the subsequent take-off, which has brought comparative advantages over their neighbouring competitors who are well-endowed with natural resources.

To undertake a study of the quality of Mauritian democracy over the years compared to the other African countries mentioned, the analysis provided by Polity IV (2009) will be used, which examines concomitant qualities of democratic and autocratic authority in governing institutions. It provides a spectrum of governing authority that ranges from fully institutionalised autocracies through mixed or incoherent authority regimes to fully institutionalised democracies. The Polity Score illustrates the regime's authority spectrum on a 21-point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy). Applying the Polity Score for Mauritius from 1968-2008, Polity IV provides the following graph on the Authority Trends for Mauritius:

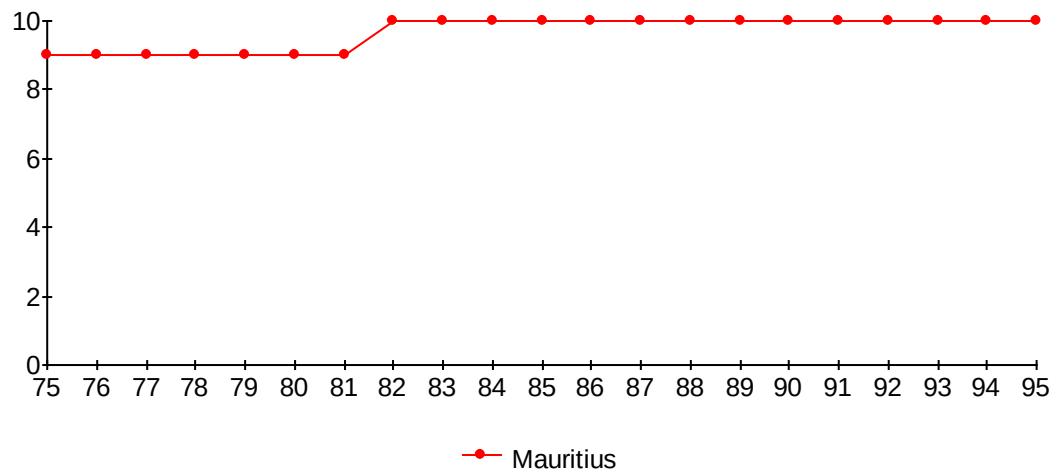


Figure 2.2 Authority Trends: Mauritius (1975-1995)

Source: Adapted from Polity IV Project (2009).¹

This shows that ‘authority trends’ in Mauritius were already very high during the 1970s, at around +9 on a scale from -10 to +10 and reached +10 in 1983, which means that in 1983 Mauritius was a fully institutionalised democracy. The maturity of Mauritian democracy proved to be a causal factor in the success of EPZ, whereby investors did not have much difficulty in choosing the most stable country among the eight African countries previously mentioned, when a decision to invest had to be taken. To illustrate this, the trends for the other seven African countries as compared to Mauritius will be examined.

¹ The graph tracks the country’s annual Polity Scores with vertical thresholds for democracy (+6 and above) and Autocracy (-6 and below).

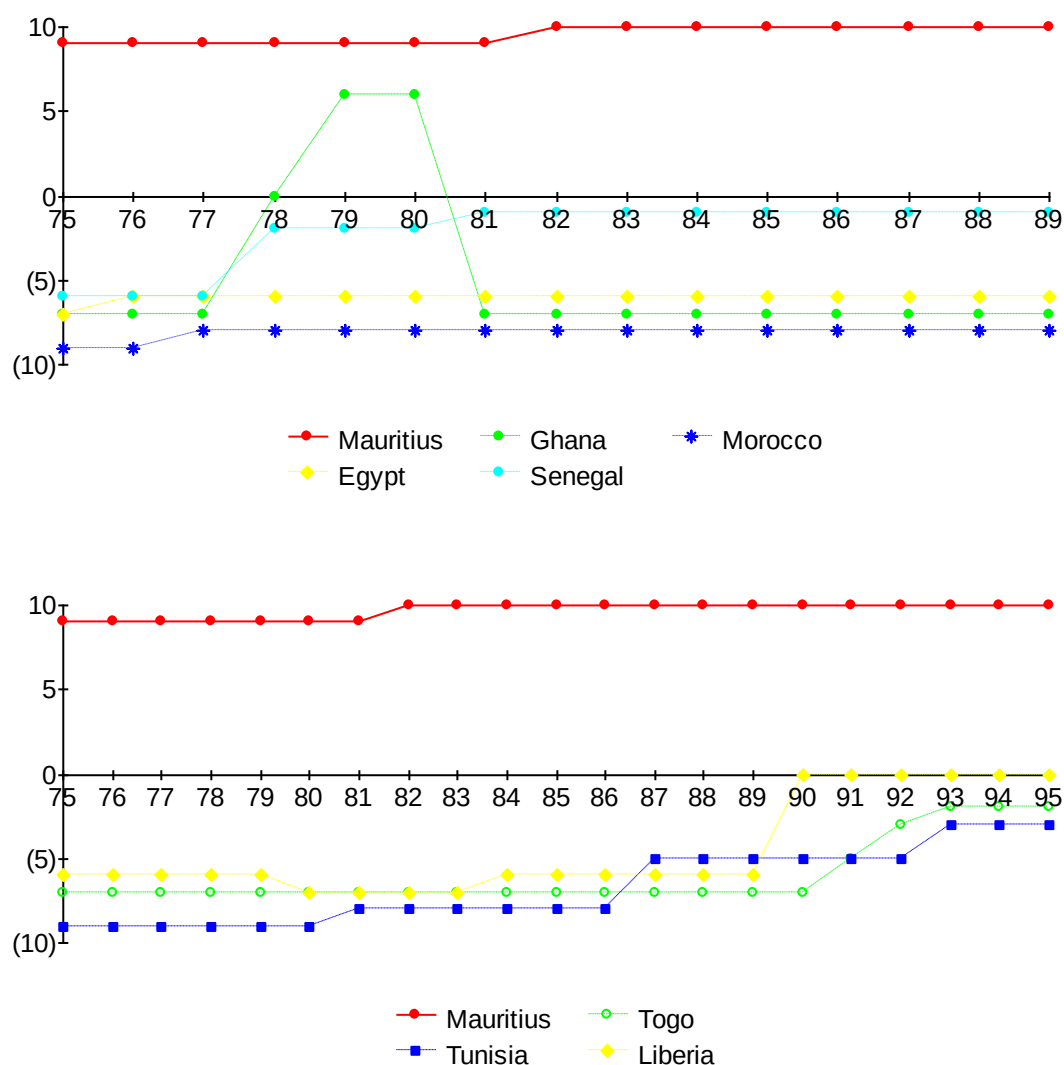


Figure 2.3 Authority Trends (1975-1995)
Source: Adapted from *Polity IV Project* (2009).

It can be seen that Mauritius was far more democratic and politically stable than the other seven African countries with EPZs operating under the Lomé Convention, which was a preferential arrangement with Europe that benefited African, Caribbean and Pacific (ACP) countries (more on this in the next chapter). The democratic nature of the institutions in Mauritius became more evident after 1983, when Mauritius attained +10 on the Polity Score, while all the other seven countries were still autocracies scoring -6 or less on the

Polity Score. Democracy and political stability thus provided the Mauritius EPZ with something unique that its competitors in Africa did not possess.

2.7.2 *The idea of an EPZ in Mauritius*

Instead of relying on geographical and historical factors to determine which way to move the economy, the diversification of the Mauritian economy towards the EPZ could be explained using Lin's (2009) 'ideas' theory, which stipulates that with the right ideas, not necessarily the ones prevailing in the dominant social thinking of the time, a country will be able to exploit the advantages of backwardness and achieve dynamic growth.

Mauritius as a newly independent non-aligned socialist country in 1969 had to look for a quick way to address its main economic problem of unemployment, which the ISI strategy had failed to address. It also had to look for a better development strategy that would have to take the economy out of underdevelopment and onto the path of sustained growth and development. Prof. Lim Fat was instrumental in introducing the idea of export-orientated industrialisation (EOI) as an alternative strategy and was able to get the blessing of the government to undertake a fact-finding mission to Taiwan's Kaohsiung Export Processing Zone (KEPZ).

Lim Fat (1969) has explained in detail how the idea of EPZs came to him as a result of what he saw during his fact-finding mission. KEPZ was essentially meant for enterprises engaged in manufacturing, assembling of export products and servicing enterprises for storage, transport and packing. Exports from KEPZ were mainly electronic products, garments, knitted and woven goods, as well as plastic, leather and rubber products.

Less than a decade after commencing operation, KEPZ was already contributing importantly to the indirect exports and development of Taiwan. By bringing in foreign managerial and technical know-how, the zone had helped train the local population and as a result a pool of technical experts was soon operating in Taiwan.

Lim Fat identified many similarities between the social and economic structures of Taiwan and Mauritius, and recommended that a similar experience be tried in Mauritius. On his return to Mauritius, he expressed with passion the idea that the solution to the country's economic problems was through the introduction of an EPZ. He was able to convince the

government of the urgency of creating the Mauritian EPZ. As an active member of the private sector, he had the political support of the Parti Mauricien, which coincidentally had been attributed the portfolio of the Ministry of Industry, following the reshuffling of the cabinet after the establishment of the unity government. His political connections facilitated access to the corridors of power and made it easier for him to convince the government. But, as mentioned earlier, the Prime Minister and the government for that matter were never against the idea of the EPZ. They only needed to be convinced of its workability before committing to a shift in economic strategy.

The EPZ Act was passed in 1970 with the objective of attracting, promoting and increasing the manufacture of export products. The idea was original in the sense that adopting an EPZ at that time was not the dominant social view of the day. Most countries, especially African countries that had gained independence during the 1960s and early 1970s, were more inclined to move towards nationalistic and anti-colonial policies that would take away power from existing elites in a drastic way.

2.7.3 The rapid adoption of the EPZ in Mauritius: The luck factor

During an interview that was conducted with Prof. Lim Fat, he raised an issue that had not generally been recognised as important in the success of the Mauritian EPZ. He explained that he had been a passionate advocate of the rapid adoption of the EPZ, but had he been an accountant or an economist, he might have been able to assess the numerous economic pitfalls of the new EPZ and consequently been more cautious by advising a more moderate approach. In his own words, therefore, his ‘naivety’ turned out to be a lucky factor that contributed to the rapid adoption of the EPZ at an opportune moment. This factor should, however, not be exaggerated, as the wholehearted support and leadership role played by the government was probably the decisive factor in the rapid and effective adoption of the EPZ.

2.7.4 The leadership role of government

As soon as Parliament passed the EPZ Act, the leadership of the unity government quickly organised a large official mission to promote the Mauritius EPZ in Singapore, Malaysia and Hong Kong. The mission was headed by Deputy Prime Minister Gaetan Duval and

included the Minister of Industry, senior officials and Prof. Lim Fat. This high-level delegation of both the government and private sector committed to the EPZ impressed the Far East business community giving them the confidence to invest in it.

From a foreign policy perspective, the quick adoption of an export-orientated strategy is also linked to the country's choice of its continental and regional affiliations, since Mauritius joined the Organisation of African Unity. The OAU would later on, as a group, obtain preferences from the USA and EU through conventions such as the Lomé Convention. This proved to be a determining factor in the eventual success of the EPZ.

In contrast to many African countries that gained independence during the same period as Mauritius, the government of Mauritius rejected ideological affiliations, refusing to be tied to the Eastern or Western blocs during the Cold War years. The then Prime Minister Seewoosagur Ramgoolam decided instead, soon after independence in 1968, to go for a policy of non-alignment in the field of international relations as a member of the Non-Aligned Movement (NAM). He also joined organisations like the African and Malagasy Organisation (OCAM) and the OAU, as well as the Commonwealth in 1968. Commonwealth membership proved to be important because when Great Britain became a member of the European Economic Community (EEC) in 1973, it brought up for discussion its preferential trading arrangement with 20 Commonwealth countries of the African, Caribbean and Pacific region, which included Mauritius. As a result of these discussions, Mauritius joined the Yaounde Convention in 1971 (as an associate member because of its affiliation to OCAM), which culminated in the Lomé Convention in 1975. The Lomé Convention of 1975 was a treaty envisaging wide-ranging economic cooperation between the nine countries of the EEC and 46 Third World countries of the African, the Caribbean and the Pacific (ACP). The original members of the EEC were as follows: Belgium, France, West Germany, Italy, Luxembourg and the Netherlands. Denmark, Ireland and the United Kingdom joined later in 1973 (Garrity, 1977).

As a member of the ACP group of countries, Mauritius received under the 1975 Lomé Convention the right to duty-free and quota-free exports to the EEC (now the European Union). That would open the door for those foreign investors, especially Asian investors

(who had to pay 17% duties to enter the European market), to enter the European market through Mauritius.

Despite the fact that two thirds of the Mauritian population have roots in India and fewer Mauritians have ties to Africa, Mauritius has since independence persistently identified itself with Africa. Bowman (1991:151) mentions that during a state visit of the president of Tanzania, Dr Julius Nyerere, to Mauritius in 1974, Prime Minister Ramgoolam commented: *'We belong to OCAM and the OAU. In other words, we belong to Africa, without in any way wrenching ourselves away from India and Europe. We intend to give support to our African brethren in their efforts to secure the full emancipation of the peoples of that great continent.'*

According to government officials who were present during the period that Mauritius joined the OAU, it is believed that the country's motivation to join the African group of nations was based on:

- (i) First and foremost there was the geographical factor, Mauritius being located much closer to the African continent than to mainland Asia;
- (ii) Leaders of the time supported African liberation movements throughout the continent and believed that the time had come to rid the continent of colonialism. As a matter of fact, Prime Minister Ramgoolam was a firm proponent of democratically elected governments of the people, for the people and by the people and had very good relations with African freedom fighters;
- (iii) Mauritius knew that in terms of geopolitics and economic positioning, the fact that the country became part of the OAU would increase its chances to negotiate successfully through the OAU with the European countries for economic advantages and preferences. The unity and solidarity that African nations were embracing is regarded as a model to this day for the rest of the world; and
- (iv) Last but not least, although Mauritius maintained privileged and strong brotherly bilateral relations with India, where the majority of its forefathers

came from, the division that characterised the Asian region, with a weak Association of South East Asian Nations (ASEAN) mostly represented by the East Asian tigers, was not very attractive to the young Mauritian nation of mostly Indian descent. The South Asian Association for Regional Cooperation (SAARC), which consists of member states of Indian descent – namely Bangladesh, Bhutan, Maldives, Nepal, Pakistan, India and Sri Lanka – would be created only in 1985, which is more than 20 years after the OAU.

The move to join the OAU proved to be beneficial over time, as it enabled Mauritius to obtain preferential access to the EEC market through the Lomé Convention. This process could arguably be attributed to the foresight and leadership role played by Mauritian leaders, but there was probably an element of luck involved as well.

2.7.5 *The dual-track approach*

Although Mauritius moved to adopt the EPZ, it must be remembered that the country retained the protectionist policies of ISI. Apart from the revenue benefits of keeping the ISI, it is noted that this was probably a wise decision to accommodate the interests of the elites operating under the Development Certificates. Table 2.2 gives an indication of the types of firms and the ethnic groups that operated under Development Certificates through a sample of 50 firms from the 1960s and early 1970s.

- (i) There was a wide range of manufactured products, such as beer, margarine, pickles, soap, paint, edible oil, cosmetics, canned food, glasses, plastic pipes, biscuits, garments, toothpaste detergents, shoes, mattress, rolled steel and metal, to name just a few.
- (ii) About 50% of these DC companies operated in the capital (Port Louis) and the rest in the other towns. Only one company operated in the village of Calebasse. This is a clear indication that villages were left out of the import substitution strategy, meaning that only the Indo-Mauritians from the urban bourgeoisie were obtaining DC certificates.

- (iii) It is furthermore noted that out of the 50 companies, 32 i.e. 64%, were owned by the Franco-Mauritian elite who were also controlling the other sectors of the economy. There were 8 Hindu companies (16%), 5 Muslim (10%) and 5 Sino-Mauritian companies (10%). The Indo-Mauritian community in total had about a quarter of DC companies. The biggest share of these ISI industries went to the Franco-Mauritian elite.

Table 2.2 Firms under Development Certificates

Company name	Address	Entry into operation date	Population group
Crown Cork Industries Ltd	Port Louis	12.10.70	Franco-Mauritian
Food Canners Ltd	Port Louis	01.07.72	Franco-Mauritian
Miroverre Ltd	Moka	27.09.62	Franco-Mauritian
Mayfair Company Ltd	Moka	01.07.66	Franco-Mauritian
Perfection Dry Cleaners Ltd	Port Louis	01.07.65	Franco-Mauritian
Mauritius Steam Navigation Co Ltd	Port Louis	01.04.65	Franco-Mauritian
Plastic Pipes & Products Ltd	Port Louis	16.09.74	Franco-Mauritian
Blymetal Ltd	Port Louis		Franco-Mauritian
Grewals Mauritius Ltd	Belle Village	31.10.61	Franco-Mauritian
Mauritius Biscuit Making Co Ltd	B. Village	01.11.71	Indo-Mauritian Hindu
Margarine Industries Ltd	Quatre Bornes	01.08.67	Indo-Mauritian Muslim
Desbro International Ltd	Port Louis	22.08.68	Franco-Mauritian
F.D.G Garments Industries Ltd	Port Louis	01.05.70	Franco-Mauritian
Mauritius Cosmetics Ltd	Vacoas	01.07.67	Indo-Mauritian Hindu
Nova Industries Ltd	Port Louis	06.01.69	Indo-Mauritian Muslim
Plastic Industry (Mauritius) Ltd	Port Louis	01.06.72	Franco-Mauritian
Paper Converting Co Ltd	Vacoas	02.10.67	Indo Mauritiens-Hindu
Blychem Ltd	Port Louis		Franco-Mauritian
Mauritius Gloves & Suitcases Ltd	B. Village	01.12.71	Sino-Mauritian
Detergents Ltd	Plaine Lauzun	01.02.72	Franco-Mauritian
Taylor Smith & Co Ltd (Eng div)	Port Louis	01.03.71	Franco-Mauritian
Food & Allied Industries Ltd	Moka	22.04.66	Franco-Mauritian
Standard Continuous Sty Ltd	Pailles	01.09.69	Franco-Mauritian
Beekun Industrial Ltd	Port Louis		Indo-Mauritian Hindu
Blytronics Ltd	Port Louis		Franco-Mauritian
Mauritius Oil Refineries Ltd	Port Louis	20.11.68	Franco-Mauritian
Resiglas Ltd	Calebasse	18.01.66	Franco-Mauritian
I.M Sayed (plyform)	Port Louis	02.11.70	Indo-Mauritian Muslim
Bata Shoe Company (Mauritius) Ltd	Port Louis	07.12.64	Sino-Mauritian

Mauritius Confectionary & Biscuits Ltd	Port Louis	07.04.69	Franco-Mauritian
Mauritius Farms Ltd	Curepipe	01.12.74	Franco-Mauritian
Rubber Industries Ltd	Port Louis	01.05.69	Indo-Mauritian Hindu
Mauritius Stationery Manufacturers Ltd	Port Louis	01.06.71	Franco-Mauritian
Gaz Carbonique Ltd	Phoenix	10.10.61	Franco-Mauritian
GRD Industries Tulsidas Ltd	Port Louis		Indo-Mauritian Hindu
Ste Mcienne de navigation	Port Louis	17.01.69	Franco-Mauritian
Zenith Enterprises Ltd	Port Louis	01.05.72	Sino-Mauritian
Cernol Chemicals Ltd	Port Louis	07.09.70	Franco-Mauritian
Butter & Dairy Enterprises Ltd	Phoenix		Indo-Mauritian Hindu
A.S Henry Ltd (Cat Colomba)	Curepipe	01.07.67	Franco-Mauritian
Soap & Allied Industries Ltd (Currimjee Group)	Plaine Lauzun	01.11.66	Indo-Mauritian Muslim
Mauvilac & Co Ltd	Pailles	01.01.65	Franco-Mauritian
Light Industries Manufacturing Co Ltd	Port Louis	19.01.70	Indo-Mauritian Muslim
Anthurium & Orchids Ltd	Vacoas	01.04.67	Franco-Mauritian
Mauritius Breweries Ltd	Phoenix	16.07.63	Franco-Mauritian
Mauritius Fishing Development Company Ltd	Port Louis	07.11.65	Franco-Mauritian
Retreaders Ltd.	Cassis	01.07.65	Franco-Mauritian
Jet Industries Ltd	Port Louis	01.04.68	Indo-Mauritian Hindu
Gary Industries Ltd	Port Louis	01.07.66	Sino-Mauritian
Aluminium Enterprises Ltd	Port Louis	01.04.71	Sino-Mauritian

Source: Central Statistics Office, Mauritius and other sources (Enterprise Mauritius and M/Industry)

Although not very successful, the DC strategy led to the establishment of a certain number of industrial activities in the economy and helped elites to diversify their production base, as well as create new businesses among the Indo-Mauritian population.

Despite the fact that ISI was not bringing the expected results, the national unity government was effectively implementing a policy that corresponded to Qian's (2001) dual-track approach, in which second-best policy options are pursued in the interests of stability, unity and a smooth transition.

Prominent among the Hindu-Muslim elites operating under the Development Certificates within the ISI framework were the Dookun and Currimjee families. The Dookun family

started Mauritius Cosmetics Limited in 1965 for local production of the toothpaste brand Blendax under licence from Procter & Gamble (<http://deramann.com/mcl.php>). Currimjee Jeewanjee & Company Limited as a trading company was established as early as 1890 in Mauritius and was dealing in the import of foodstuffs and commodities as well as the export of sugar. Trading and commerce remained the main activities of Currimjee Jeewanjee & Co Ltd until the company started diversifying actively into retail activities in the 1960s and into services in the 1980s (<http://www.currimjee.com/journey>). Most of these pioneer families were almost certainly politically close to the Labour government that would rule independent Mauritius from 1968. It is practically impossible to obtain formal evidence of their support to the Labour Party, but it is widely and publicly known that these pioneer families made a substantial financial contribution to the Labour Party's independence campaign. The fact remains that it was in their interest to support the party fighting for independence in the hope that after independence, more economic opportunities would become available to Indo-Mauritian businessmen in an economy so far controlled exclusively by the Franco-Mauritian elite.

Furthermore, it is to be noted that contrary to the situation where more than 60% of ownership of ISI companies was concentrated in the hands of Franco-Mauritians, at the very start of the EPZ we can see that they were controlled principally by the Sino-Mauritians, who owned more than 40% of EPZ companies in 1972. Though the Sino-Mauritian and Franco-Mauritian presence will later remain dominant in this sector, during the 1980s all population groups eventually became part and parcel of the success of the EPZ. Table 2.3 shows employment for the first EPZ enterprises in Mauritius.

Table 2.3 The first EPZ enterprises in Mauritius and their employment

Year	Companies	April 1971	December	
			1971	1972
1970	L.P.S. Ltd. (diamond cutting & polishing)	9	70	116
	Resultant (Mauritius) Ltd. (industrial gloves)	153	6	402
	Career Co (Mauritius) Ltd. (Wigs)	260	324	0
	Vettex (Mauritius) Ltd. (garments)	100	83	114

	Suzy Toys Ltd. (toys and games)	30	74	173
1971	Floréal Knitwear (Mauritius) (knitwear)	-	300	678
	Cie. Des Maquettes José Ramart (model boats)	-	68	70
	Mauritius Foods Ltd. (pickles, relishes and soups)	-	26	30
	Classic Design (Pty) Ltd. (reproduction of antique furniture)	-	13	23
	Elcom Ltd. (electronic)	-	4	17
1972	Orkay Synthetics Ltd. (fibre processing)	-	-	10
	Overseas Gloves Factory Ltd. (gloves)	-	-	65
	Southern Cross Diamond Co Ltd. (synthetic diamond abrasive grit)	-	-	18
	Compagnie Mauricienne de Meuble et du Rotin (rattan furniture)	-	-	17
	International Wigs (wigs)	-	-	23
	Textile Industries Ltd. (garments)	-	-	700
	Compagnie Mauricienne Commerciale (ladies' and children's garments)	-	-	30
	Proton Ltd. (peanut flour)	-	-	12
	Micro Electronics (electronic components)	-	-	22
	Overseas Marine Products Ltd. (dried sharks fins)	-	-	10
	TOTAL EMPLOYEES	552	968	2530

Source: *The Times London*, 5 March 1975. Courtesy Lim Fat.²

2.7.6 Ethnic diversity and culture as a determinant of economic development

Mauritian society is made up of different ethnic groups which were divided as follows in 1972 (CSO Mauritius figures): Indo-Mauritians (66.4% – consisting of Hindus 50.3% and

² From Table 2 it is noted that, as explained by Fane-Pinoe (2008), Suzy Toys set up by Lim Fat was the first company to operate in the EPZ in 1970. He was in partnership with H. Bauer, a German investor. Resultant created by Tang of Hong Kong and Career Wigs also started operation in 1970. Shortly afterwards, R. Seeyave and the Hutchinson Group of Hong Kong set up Floreal Knitwear, the Ah Chuen family started Textiles Industries Ltd with Hong Kong Partners, and other Hong Kong pioneers started Crystal Knitwear, Overseas Gloves and Afrasia. We also had Jose Ramart with boat models. Therefore the Sino-Mauritians and those from the General Population category would be the first local people to enter the EPZ. Other communities of the Mauritian nation would also join from 1975 onwards.

Muslims 16.1%), General Population (30.7% – consisting mainly of Creoles (people of African descent 23%) and the rest composed of Franco-Mauritian (2%) and coloureds) and Sino-Mauritians (2.9%). English is the official language, while French is widely used as the spoken language.

Abramovitz (1995) sees culture – which includes beliefs, values, preferences and trust – as shaping the attitudes of people towards work, adding that a country's culture determines its economic performance. While it was very difficult to come up with a specific work culture for Mauritians at the time of independence, as it is made up of so many ethnicities with different values and attitudes, we can argue on the diaspora connections of Mauritius to explain the culture hypothesis. Brautigam (2005) emphasises the diaspora and how it helped operationalise the EPZ in its early stages. She gives a very good account of how the Chinese diaspora played a determining role in the successful setting up of the EPZ in Mauritius. Prof. Lim Fat, who – as mentioned before – was the first person to seriously think that the EPZ could be successfully implemented in Mauritius, had his in-laws in Taiwan. Even before being mandated by the government to go on an official exploratory mission to Taiwan, the Lim Fat family were already paying regular visits to their family in Taiwan. It is in this family context that Prof. Lim Fat seized the opportunity to look at how the EPZ was functioning in Taiwan, which had already reached an advanced stage. After the introduction of the EPZ in Mauritius, the Lim Fat family were among the first Mauritians to set up an EPZ factory in Mauritius with a partner from Hong Kong, which opened the way for others from that region.

Since then, Brautigam (2005) explains, many Sino-Mauritians began to use their personal contacts in the Far East to promote investment and joint ventures between the Far East and Mauritius. Another example of these links is the story of another important Sino-Mauritian family, the Ah Chuen family. Sir Jean Ah Chuen, former Minister of Local Government from 1970-1976, would also be one of the pioneers of the EPZ, together with the Lim Fat family. Sir Jean had some of his family members settled in Hong Kong, and a brother-in-law from Hong Kong was also appointed as the Honorary Consul of Mauritius there. Using these contacts, the Ah Cheun family set up several EPZ factories and joint ventures in Mauritius, operated by Hong Kong firms. During the first few years of operation of the

EPZ, 60% of capital investment came from Hong Kong, and the rest from Taiwan, Malaysia and Singapore (Brautigam, 2005). The first industrialists exclusively from Hong Kong came from the Esquel Group, which is one of the world's leading producers of premium cotton apparel. *'Based in Hong Kong with production facilities in China, Malaysia, Vietnam, Mauritius and Sri Lanka, the group manufactures for some of the world's best known brands, including Tommy Hilfiger, Hugo Boss, Nike and major retailers such as Marks & Spencer'* (<http://www.esquel.com/en>).

After the Sino-Mauritian diaspora, who were the pioneers of the Mauritian EPZ, some Franco-Mauritians sugar barons also became interested in joining the textile industry. The Dalais family created Floreal Knitwear, Tim Taylor with Cobra, Francois de Grivel with Festival and the Lamusse and Espitalier Noel groups. The first Indo-Mauritians to enter the textile export industry were the Currimjee Group with Bonair Industries. It is to be noted that the Currimjee Group were already operating under Development Certificates, producing soap under the name of Soap and Allied Industries Ltd. Similar to the Currimjee family, there were many businessmen who owned DC firms under the ISI strategy but also invested in the EPZ. They had the advantage of being already familiar with industrialisation and factory work, which made it easier for them to shift or diversify in the EPZ, compared to those who did not have prior knowledge or experience in industry.

2.7.7 Towards an Integrated Framework to explain the Mauritian EPZ

Rodrick (2013) has argued that the factor that enabled reform in countries such as China and South Korea was not a reconfiguration of political power, but the emergence of new strategies. He further mentions that economic changes often happen not when vested interests are defeated, but when different strategies are used to pursue those same interests. The study of the political economy and the political institutions that it develops is therefore central to our understanding of who gains and who loses from the status quo in attempting to make sense of policies adopted by the government.

Having said this, the EPZ story in Mauritius could be explained using a framework in which all the factors mentioned are intertwined with each other and the pursuit of vested interests prevailed in the making of policy decisions. At the time of independence the Indo-

Mauritians who fought hard for a Labour government to be elected were expecting an end to the status quo of being ruled economically by the narrow Franco-Mauritian elite. When the decision was taken to adopt the EPZ, notwithstanding the economic reasoning behind the EPZ creation such as diversification of the economy and attracting FDI to induce economic growth, the EPZ was the only viable strategy, as Brautigam (1997) argues, to increase employment and meet the demands of the most vocal constituents –the Indo-Mauritians and Creoles – without directly attacking the base of privilege of the powerful elites, the Franco-Mauritians. The government, rather than fighting against the plantation owners, encouraged them to join the EPZ by putting high export taxes on sugar, which led many of them to establish EPZ factories on the island and sell off some of their plantations to the Indo-Mauritians. The development of the EPZ institution fitted well with the economic needs of the country and was compatible with the interests of the ruling power. Thus, at a very early stage the government decided to satisfy its constituents by moving towards inclusive political institutions, where instead of power being vested in a narrow group, the government would encourage a broad coalition of many groups to share power. The inclusive institutions of democracy, the British-style parliament and a constitution which stressed the protection of property rights were a guarantee that there would be no expropriation of the Franco-Mauritians sugar plantations. This helped in securing the support of Franco-Mauritians.

This strategy also made it possible for Mauritius to promote new elites without having to undergo the process of ‘creative destruction’, as the sugar plantation elites kept their privileges, while newcomers were benefiting from the advantages offered by the ISI and EPZ. This led to an increase in the number and ethnic composition of the elites.

The same reasoning can be used to explain the choice of institutionalising communal representation in parliament by adopting a ‘best losers’ system’, which was a way to guarantee to minorities that the government institution was politically inclusive. This need to provide guarantees to the minority was especially important at that time, because the nation was still very fragile following the traumatising experience of communal riots just one year before independence.

Moreover, the dual-track approach, as outlined by Qian (2001), well describes the policy that Mauritius adopted when it decided to move towards liberalisation through the adoption of the EPZ for the political reasons mentioned, while keeping the protectionist ISI in place to satisfy the Franco-Mauritian elites, the new Indo-Mauritian and Sino-Mauritian elites, who were the political power base of the Labour and PMSD parties. From this perspective, it becomes clearer that the vested interests of all stakeholders were being preserved in the process, which explains why there were no major demonstrations/upheavals when these economic strategies were adopted.

As regards the idea of an EPZ and how it came about, though we could agree that the insistence of Prof. Lim Fat to push hard for the implementation of the EPZ was done in the broad economic interest of Mauritius, self-interest prevailed once more. We should bear in mind the fact that Prof. Lim Fat got the idea while visiting his relatives in Taiwan and he would be one of the first Mauritians to set up an EPZ company in Mauritius. Had Prof. Lim Fat been a member of another community without relatives in Taiwan and had his interest to do business personally in the EPZ not been that pronounced, it is questionable whether the idea of the EPZ would ever have materialised in Mauritius at such an early stage.

On the diplomatic front, again, notwithstanding the visionary move of the Prime Minister of Mauritius to join the OAU, which eventually helped Mauritius in gaining preferential access for its EPZ products in the EU and US markets as part of the EU/ACP partnership, the foreign policy decision of Mauritius to join the OAU was also taken in the context of showing the Creole community (whose ancestors came from Africa) that they were also being catered for and were part and parcel of independent Mauritius. Had Mauritius decided to incline more towards India and Asia, the Creole community would have felt that the government was reluctant for Mauritius to be linked to Africa. Thus indirectly, the newly independent government was trying to secure the Creole community, which was opposed to independence, and inviting them to join in the efforts towards nation building.

Thus, though we recognise the causality of the political economy factors, namely inclusive institutions, ideas, luck, leadership, the dual-track economic strategy and ethnic diversity in the choice of creating an EPZ in Mauritius, there was also a strong component of

compromise-based politics that formed part of the Mauritius equation that guided the decisions of the government.

2.8 Conclusion

At the time of independence Mauritius had several inherent constraints which made renowned economists and historians prophesy that the country was doomed. Fortunately, the government and its people used these constraints to the country's benefit. The creation of the EPZ helped the country overcome its structural problems with successful diversification. Throughout this chapter, the most important political economy factors have been identified based on earlier and more recent literature, which acted in favour of the creation of the EPZ in Mauritius. These factors are inclusive institutions prior to and after independence, ideas, luck, leadership, the dual-track economic strategy, ethnic diversity/diaspora and the protection of vested interests. All these factors provided the framework within which the EPZ was created and developed into the Mauritian economic 'miracle'.

ANNEXURE

Background on the Export Processing Zone (EPZ)

This section provides a brief overview of what an EPZ is and the historical background to the EPZ worldwide. The World Bank (1992:7) gives a narrow definition of EPZs as 'fenced-in industrial estates specialising in manufacturing for exports that offer firms free trade conditions and a liberal regulatory framework'. Madani (1999:14) broadens the

definition by allowing 'for domestic sales and including export processing firms which benefit from the same EPZ incentives without being fenced-in'. For Mauritius the EPZ created distinctive arrangements, where firms specialising in exports would qualify for duty-free imported inputs regardless of their location on the island. For Mauritius the EPZ covered the whole island, though it was initially started with a distinct area in Plaine Lauzun, enjoying special status allowing for duty-free imports of equipment and other materials to be used in the manufacturing of goods earmarked for exports. This special status generally involves, *inter alia*, favourable legal provisions and regulations pertaining to taxation. Madani (1999) also includes less government red-tape, with more flexibility with labour laws for firms in the EPZ than in the domestic market.

EPZs first appeared in the mid-1960s in widely different places – namely Ireland, Puerto Rico, the Dominican Republic, India and Taiwan.

Taiwan's Kaohsiung EPZ (KEPZ), however, was the first to use the term 'export processing zone' in its EPZ Law of 30 January 1965. The objective of the zone was to attract industrial investment, promote foreign trade, create jobs and introduce modern industrial technology. 'The Kaohsiung EPZ was created on reclaimed land on the island's leading port and began exporting in 1966' (World Bank, 1992). After only six years of operation (i.e. 1972), the EPZ was already employing as many as 57,000 workers. According to Shapiro (1981), free-trade zones had existed before in many commercial centres, but EPZs were a new kind of export-oriented growth based on imported raw materials, which had emerged in Taiwan in the early 1960s. In Taiwan, from the outset of the KEPZ, the Taiwanese government sought to bring foreign investment into the zone by providing attractive facilities. Shapiro (1981) mentions the following facilities that were provided by the KEPZ: (i) cheap, abundant labor, (ii) no duties on imported raw materials or exported finished products, (iii) no sales tax or commodity tax levied on companies within the zones, (iv) a five-year corporate tax holiday offered to enterprises in the zones which conformed to the criteria of the 'Statute for Encouragement of Investment', (v) greatly reduced red tape, (vi) standard factory buildings available for purchase (with generous government financing) or rent, (vii) good transportation to and from major harbours and airports.

The Taiwanese experience was replicated by many developing countries, of which Mauritius, where the EPZ which was set up in 1970, was one. Other countries included the Republic of Korea (1970), Malaysia (1972), Indonesia (1973), India (1974), Senegal (1974) and Liberia (1975). To different degrees and proportions, the Asian nations were very successful in the implementation of the EPZ. Senegal and Liberia were not as fortunate. This is precisely what made Mauritius different and its success during the 1980s and 1990s is regarded as outstanding because it was one of the few African countries that did actually use the right mix of policies to support its export-oriented strategy.

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CHAPTER 3

EXPLAINING THE ECONOMIC PERFORMANCE OF THE MAURITIAN EPZ: TRADE THEORIES

3.1 Introduction

The previous chapter examined the political economy factors which explain why the Mauritian government chose the EPZ strategy and was able to implement it effectively. In

this chapter, after first examining the impact the EPZ had on the economy during the critical years of the 1980s, the causal factors that underpinned this success from the perspective of trade theory will be analysed. Shortly after the operationalisation of the policy, the number of EPZ enterprises increased sharply from only 9 in 1971 to 85 in 1976 (English, 1997). The number of employees in the EPZ also rose significantly during the same period, from less than 1,000 to 17,171. Sugar, however, remained the sector employing most of the workforce throughout the 1970s, with 52,620 workers in 1976.

As far as the GDP of Mauritius is concerned, when there was no EPZ in the 1960s, real GDP growth rates showed negative figures on four occasions during the 1960s (1965 and 1967-1969). These figures became more promising during the 1970s after the introduction of the EPZ. For instance, during the period 1972-1976, the real annual GDP growth rates exceeded 20.0% in 1976 (at 21.4%) (World Penn table for GDP). The average real GDP growth for that five-year period was 7.6%, compared to the period 1964-1970, which had a negative average growth of -1.5%. For the period 1985-1995, the economy grew at an average of more than 5.0% annually in real terms, with a significant contribution coming from the EPZ sector. Comparing this to Africa, where the average GDP growth rates for 1981-1990 were less than 2.0%, the Mauritian growth rate appears to be exceptional (UNCTAD, 2008).

The existing literature on the Mauritius EPZ has not explored trade theories to see which of them could be used to explain the success of the EPZ in Mauritius. This chapter will undertake an analysis of the neoclassical and new trade theories to ascertain which one best explains the Mauritius case. The neoclassical international trade theory found in the Heckscher-Ohlin (H-O) model is the first theory that will be investigated to assess its relevance in explaining the success of the EPZ in Mauritius. The H-O model states that a country specialises in the production of goods in which it has a comparative advantage in terms of factor endowments. When Mauritius decided to implement an EPZ, its comparative advantage was still in the sugarcane plantations. It will be shown that, had Mauritius conformed with the H-O model, it would today still have only two sectors – namely, sugarcane and tourism.

Next, the new trade theories will be considered, in particular the Krugman and Venables' model, which relaxes many of the assumptions of the H-O model. It basically sets out two very important factors that could explain the EPZ growth – namely, transport costs and wage costs. Based on this, the chapter will then proceed to test *Hypothesis No. 1: Transport costs and wage costs explain the EPZ take-off*. To test this hypothesis data were obtained on factors that contributed to transport costs during the take-off period – namely, air transport costs and shipping costs (SC), which include port fees (e.g. port charges for clearing containers), waiting time at port, port infrastructure and the shipping routes of vessels entering the Mauritian zone. It was necessary to check whether there was a drop in any of these figures at the time of take-off, which would make the case for low transport costs as a causal factor in the EPZ take-off. The same exercise was done with wage costs in Mauritius during the period 1981-1987, which were then compared to wage costs in other countries that had operational EPZs at this time.

The possibility was then considered that the success of the EPZ had nothing to do with factor endowments or shifting cost structures, but rather with *Hypothesis No. 2: The EPZ take off can be explained by the preferences framework that provided Mauritius with preferential access to global markets*. To study this possibility, the Multi Fibre Agreement (MFA) and Lomé advantages that Mauritius received were compared with the advantages obtained by other African countries. If it is the case that these other African countries failed to create EPZs that were as successful as the Mauritian EPZ, then factors other than agreements must be found to explain the exceptional Mauritian case. The possibility that preferences interacted with other causal factors to produce the unique success of the Mauritius EPZ will also be considered.

3.2 The Mauritian economy during the 1980s

The story of Mauritian economic growth during the 1980s can be divided into two distinct periods: the very early 80s and the period after 1982-1983, when the transition in the fundamentals of the economy became apparent. The real annual average growth rate of the Mauritian economy for the period 1983-1990 was 4.6%.

Table 3.1 Comparative real GDP growth rates (%)

Year	Mauritius	Madagascar	US	Ghana	Senegal
1981	1.9	-6.1	1.6	-2.1	-5.8
1982	7.6	-2.9	-4.2	-0.6	15.3
1983	-0.3	-0.1	3.4	-8.7	-0.1
1984	2.6	-0.7	7.4	4.7	-7.4
1985	6.1	-2.7	2.5	1.5	1.5
1986	6.8	0.5	2.3	0.7	2.0
1987	7.9	-1.7	2.7	-0.5	-0.1
1988	3.7	-2.0	3.1	2.8	3.0
1989	5.9	1.9	2.6	1.8	-3.6
1990	3.8	-4.4	0.7	-0.2	-0.3
Average (83-90)	4.6	-1.2	3.1	0.1	-0.6

Source: Penn World tables for GDP

As from 1984 (seen in Table 3.1), the real growth of the Mauritian economy became consistent and far surpassed that of other African countries, most of whom experienced very low or negative growth rates. Even the USA was growing at a slower rate than Mauritius during this period.

The growth of the Mauritian economy during the period 1983-1990 can be seen to be driven strongly by growth in the EPZ sector. The average EPZ growth (seen in Table 3.2) for the period was 19.2% of GDP, while that of the sugar sector was at -1.3% of GDP.

Table 3.2 Comparison of EPZ and sugar growth rates (%)

Year	Growth rate of EPZ sector	Growth rate of sugar sector
81	11.2	21.0
82	-2.9	19.8
83	8.9	-20.0
84	32.9	-3.9
85	30.0	15.1
86	34.9	13.0
87	22.0	-4.4

88	12.0	-9.4
89	6.0	-12.5
90	7.0	11.9
Average(83-90)	19.2	-1.3

Source: Central Statistics Office Mauritius

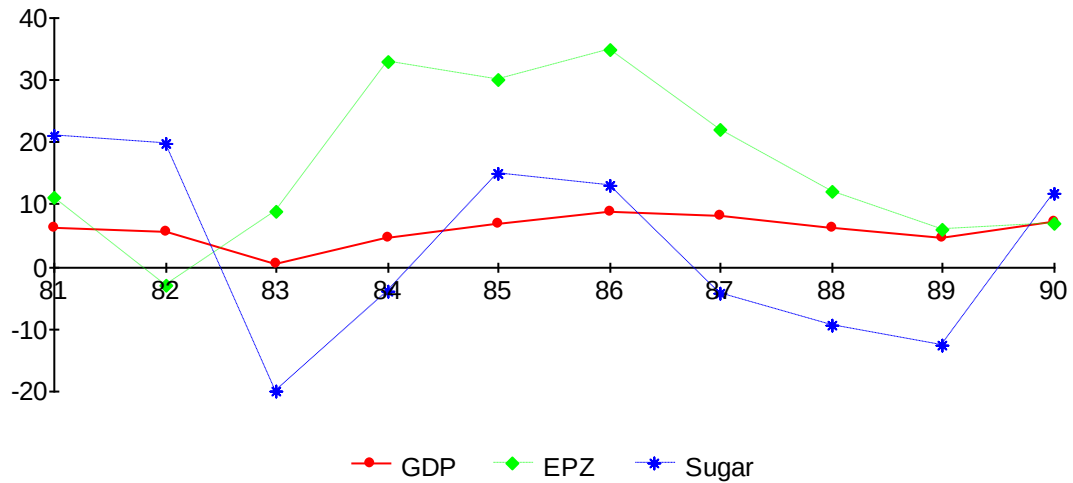


Figure 3.1: EPZ and sugar sectors growth rates (1983-1990)

Adapted from CSO Mauritius figures

Figure 3.1 shows that growth rates in the EPZ sector and GDP growth were positive throughout the period and, until 1989, EPZ growth rates were consistently higher than the GDP growth rates. Sugar sector growth rates, by contrast, remained erratic and became negative during much of the period. As indicated in Table 3.3, the EPZ was the largest contributor to GDP (apart from wholesale and retail) from 1986 onwards.

Table 3.3 Contribution of main sectors as a % of GDP

Year	1983	1984	1985	1986	1987	1988	1989	1990
Sugar	9.5	9.7	11.1	11.6	10.4	9.0	8.4	8.1
EPZ	5.2	7.2	9.5	11.5	12.8	13.0	12.1	12.0
Construction	6.2	5.7	5.6	5.3	5.4	5.9	6.4	6.9
Transport	11.5	11.4	10.9	10.8	10.3	9.9	10.6	10.7

Restaurants and hotels	2.6	2.5	2.4	2.5	2.6	2.7	2.9	3.2
Ownership	12.8	12.1	11.1	9.6	8.2	7.3	6.9	6.5
Financial institutions	1.9	2.0	1.8	1.8	3.4	3.8	4.3	4.8
Insurance	3.1	2.9	2.9	2.8	3.2	3.3	3.4	3.9
Wholesale and retail	11.1	11.1	10.8	11.5	12.1	13.2	13.5	13.3

Source: Central Statistics Office, Mauritius

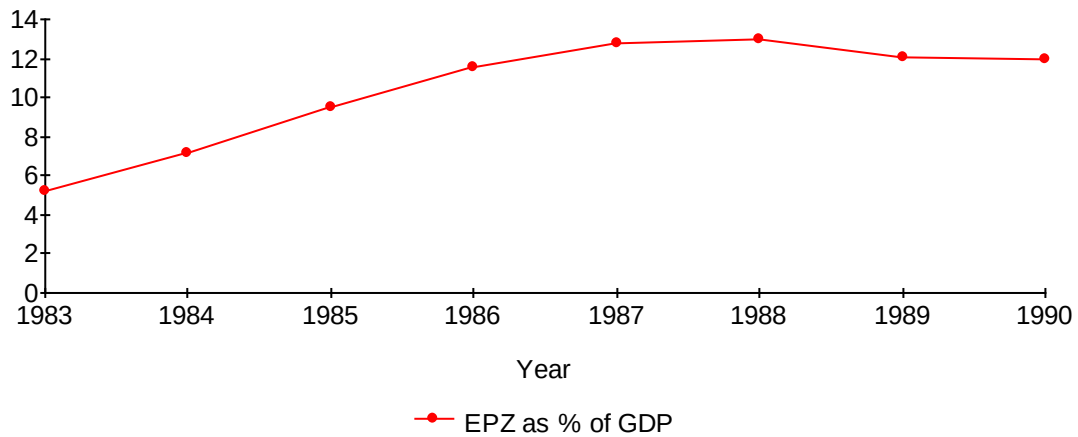


Figure 3.2: EPZ contribution as a % of GDP

Adapted from CSO Mauritius figures

Furthermore, EPZ as a percentage of GDP (Figure 3.2) grew steadily from 1983 onwards, more than doubling in just the three-year period of 1983-1986.

Table 3.4 Total exports before and after EPZ take-off

Year	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
*Exports in Rs million	2,388	2,656	2,705	3,260	4,450	4,566	5,529	5,953	6,989	8,895	11,919

**Exchange rate (Rs to 1 USD)	6.68	6.60	6.16	6.31	8.71	10.98	12.58	13.95	16.18	17.07	13.54
Exports in current USD	357.48	402.42	439.12	516.64	510.90	415.84	439.50	426.74	431.95	521.08	880.28
***Exports in constant USD (1976 as base year)	357.48	377.85	383.22	404.91	352.79	260.30	259.15	243.79	236.55	275.55	457.01

Sources:

- (i) *CSO Mauritius figures. Online
(<http://statsmauritius.gov.mu/English/Pages/Historical-Series--National-Accounts.aspx>)
- (ii) **Online (<http://fxtop.com/en/historical-exchange-rates.php>)
- (iii) *** CPI Inflation calculator. Online
(http://www.bls.gov/data/inflation_calculator.htm)

Table 3.4 shows that from 1976 (when the EPZ was still in its infancy) until 1983 (when the EPZ can be said to have taken-off), total exports of goods and services in current Rs value more than doubled from Rs 2,705 million to reach Rs 5,953. However, total exports in constant USD gives a totally different picture, owing to the fact that inflation rates in Mauritius prior to 1983 were at double digits until 1982 (11.4%) and the government devalued the currency in 1979. As from 1983, inflation fell significantly to 5.6% and maintained a single digit value until the late 1980s. Furthermore, it can be noted that after 1984 total exports in constant USD started to pick up steadily, based principally on the strength of the EPZ whose contribution to GDP overtook the threshold of 10% in 1986 and remained on an increasing trend.

As the following graph reveals, from 1983 the share of EPZ exports as a percentage of total Mauritian exports increased steadily.

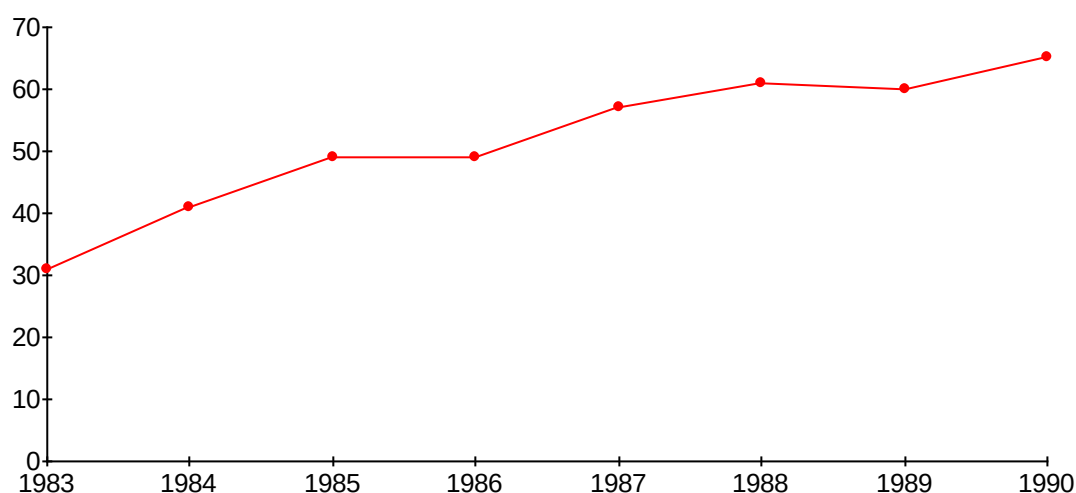


Figure 3.3 EPZ exports as percentage of total Mauritian exports

Adapted from CSO Mauritius figures

EPZ exports surpassed sugar in 1987, increasing threefold from 1984 to 1987. As a percentage of total export earnings, the EPZ sector accounted for 56.0% in 1987 and more than two thirds of total exports in 1997. All these figures support the argument that the EPZ sector at take-off was contributing significantly to GDP and to exports.

The rate of increase in investment in the EPZ, measured in terms of Gross Domestic Fixed Capital Formation (GDFCF), was also significant for the period 1983-1989 as shown below. Total GDFCF and GDFCF in EPZ both experienced a rate of increase at the time of take-off from 1983 to 1984, but the rate of increase for EPZ was much more pronounced than total GDFCF. The rate of increase of GDFCF for EPZ remained higher than total GDFCF until 1986-1987. After 1987, although the rate of total GDFCF continued to rise, the rate of increase of investment in the EPZ sector was declining, as investments were now not solely concentrated in the manufacturing sector because a diversification process was underway towards new sectors, in particular the financial services sector.

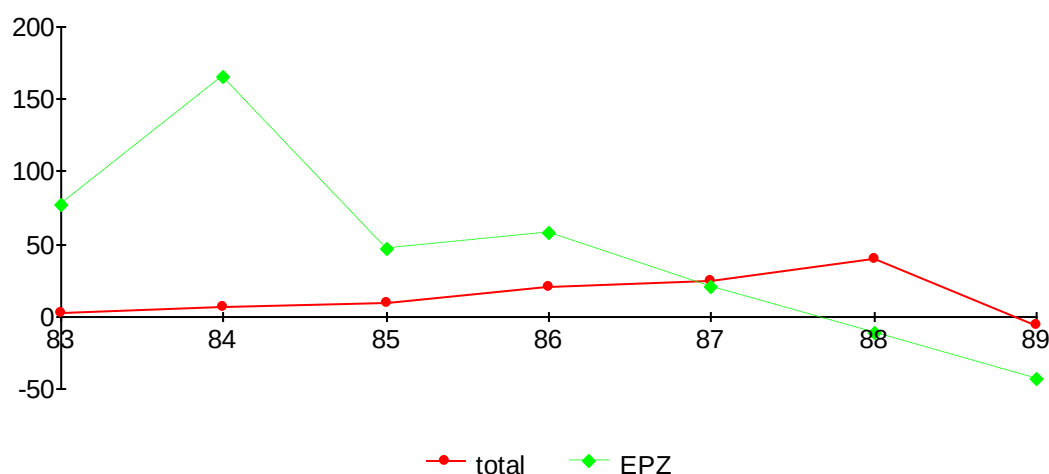


Figure 3.4 Rate of increase in GDFCF for Economy compared to EPZ

Adapted from CSO Mauritius figures

With regard to employment (Figure 3.5), from 1986 onwards the EPZ sector on its own was employing more workers than the sugar industry and tourism sector combined. Employment in EPZ experienced an unprecedented sharp rise from 1983 until 1988. The number of workers employed in that sector increased from 22,830 in 1983 to 88,738 in 1988. This represented a more than threefold increase over a five-year period and an average increase of 78% in EPZ employment annually. It may also be noted from the figure below that the drastic rise of EPZ employment was even more pronounced from 1985 to 1988. This could be attributed to the rise in the number of EPZ enterprises, which increased from 146 in 1983 to 591 in 1988, meaning that the number of EPZ enterprises had increased more than fourfold over the five-year period.

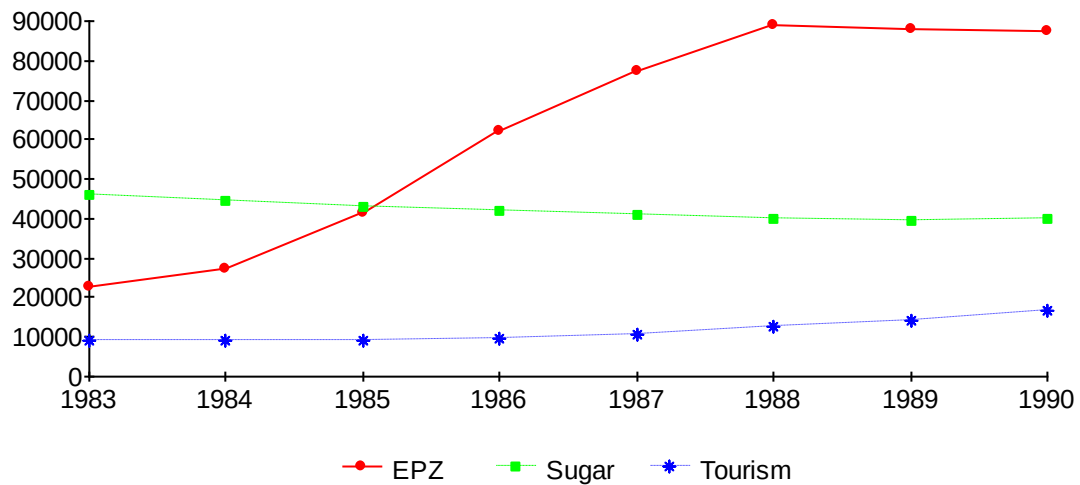


Figure 3.5 Employment in EPZ, sugar and tourism compared
Adapted from CSO Mauritius figures

To summarise, in an interview in *Week-End Newspaper* of 20 April 1988, the then Minister of Finance of Mauritius, Mr V. Lutchmeenaraidoo, said ‘*Mauritius was experiencing an acceleration in terms of foreign investment, with the number of investors having increased in significant proportions. The EPZ sector was the driving force behind this acceleration in the Mauritius economic growth. The Mauritian model of development and the success that it brought had prompted study visits from a number of reputable institutions, including the University of Paris Dauphine. Mauritius was by then well on its way to joining the league of Newly Industrialised Countries (NICs) comparable to other Asian countries that had dynamic economies*’ (*Week-End Newspaper Mauritius* of 20 April, 1988).

3.3 Discussion of theories

3.3.1 The H-O model from Hamada’s (1974) perspective

Previous analyses of Mauritius’s EPZ have not explored trade theories to see how they could be used to explain the success of the EPZ in Mauritius. This section will contribute towards filling this gap in the literature by providing an assessment of the neoclassical and new trade theories to see whether they could be useful in pointing to the causal factors behind the EPZ take-off in Mauritius.

The Heckscher-Ohlin's (H-O) 'two goods – two factors – two countries' model says that a country specialises in the production of goods in which it has a comparative advantage in terms of factor endowments. That is, a country should export products that use its relatively abundant factors intensively and import products that use its scarce factors intensively.

Madani (1999) points out that the results will depend critically on the factor intensity of the two sectors. He concludes that when small underdeveloped countries have a comparative advantage in labour-intensive industries and protect their capital-intensive sectors, then an EPZ will reduce the country's welfare. This is explained by the fact that the Foreign Direct Investment which flows into the EPZ will mean that capital is imported from abroad and labour is withdrawn from the sector in which the country has a comparative advantage (which would be mainly sugar plantations for Mauritius). Therefore, production of capital-intensive goods will increase, while that of labour-intensive domestic goods (sugar and agricultural) decreases. This will distort production away from the factor-based comparative efficiency.

Madani's assessment is based on the model developed by Hamada (1974) in his analysis of the economic implications of EPZs. Hamada concludes that an EPZ does not necessarily improve consumption possibilities in the developing country. Hamada uses the standard H-O 2x2 model with constant returns to scale:

X_1 – Labour-intensive commodity (agriculture)

X_2 – Capital-intensive commodity (manufacturing)

with the following major assumptions:

(i) The production function is as follows:

For Industry 1: $X_1 = F_1(K_1, N_1)$... labour-intensive industry

For Industry 2: $X_2 = F_2(K_2, N_2)$... capital-intensive industry

where K and N are capital and labour inputs. The input coefficients for capital and labour are $a_{kt}(r, w)$ and $a_{nt}(r, w)$. For instance, $K_i = a_{kt}(r, w) X_i$ and $N_i = a_{nt}(r, w) X_i$ for $i=1$ and 2 , showing that rentals are a function of rent for buildings and wages for labour.

- (ii) The country is scarce in capital, and normally exports good 1 (agriculture) and imports good 2 (manufacturing). Industry 2 is protected in the country by use of import tariffs.
- (iii) International prices of the goods are given and constant at p while the domestic price of good 2 (which is protected) is q and $q > p$.
- (iv) The supply of capital and labour is assumed to be fixed in the absence of foreign investors at K and N

$$\text{so that: } a_{k1}X_1 + a_{k2}X_2 = K$$

$$a_{n1}X_1 + a_{n2}X_2 = N.$$

- (v) Transport costs are negligible.
- (vi) Competition in the domestic market will result in equality of wages and rates of profit in both sectors:

$$a_{k1}r + a_{n1}w = 1$$

$$a_{k2}r + a_{n2}w = q.$$

To assess the welfare implications of the duty-free zone or EPZ, Hamada uses national income at international prices as welfare criterion, saying that the improvement of national income at international prices will imply at the very least an improvement in consumption possibilities. However, by setting up an EPZ the country will now provide a location where international prices will prevail.

Given that foreign investment is indispensable for the successful implementation of an EPZ, Hamada takes the case of foreign investment in the form of capital movements. He concludes that the introduction of foreign capital does not change the national economic welfare at all and, worse still, if the economy is protected by an import tariff for the capital-intensive industry (manufacturing), the introduction of foreign capital will impact negatively on national income, which will now be calculated at international price p , which is less than the domestic protected price q . Therefore, even though national income at domestic prices remains constant, national income at international prices declines as

foreign capital increases, leading to a decline in consumption possibilities. Hamada explains this by saying that foreign capital demands more labour, thus implying labour becomes scarce in the country, and as the capital-intensive industry (manufacturing) increases its production, this will lead to a reduction of national income at international prices.

Hamada therefore concludes that with the establishment of an EPZ through the use of the H-O model, the potential consumption possibility for a country does not improve with the introduction of more investment in the EPZ. And on top of that, labour is removed from the more productive sector (agriculture) to the capital-intensive sector (manufacturing).

Now, if we apply the above reasoning based on the H-O model to Mauritius, the best option for Mauritius should have been specialisation in the production of those goods that use the factors of production in which the country has a comparative advantage (i.e. sugarcane plantations, which make use of the abundant agricultural labourers and perhaps the tourism sector, for which the country has good potential); while importing those products in which it did not have a comparative edge – in this case manufactured goods from the USA and the EU. Therefore, as a matter of fact, Mauritius should have continued with the sugar sector, in which it had a comparative advantage in terms of labour, rather than introduce the EPZ which, according to the H-O model, would create a distortion and lead to inefficiency.

However, in practical terms the H-O model does not seem to fit the Mauritian reality of the 1970s, as foreign investors seemed to show a lot of interest in the new EPZ, where employment was expanding rapidly but not at the expense of the sugar sector. As a matter of fact, employment in the sugar sector was not being negatively affected as a result of the expansion the EPZ sector, principally because the economy was experiencing an acute unemployment problem and the EPZ helped in absorbing part of the unemployed labour. If one takes a look at employment in the Mauritian EPZ, according to the CSO figures, that sector was employing only 908 workers in 1972 but over the years, employment expanded by more than a proportionate rate to reach 18,173 in 1977. Thus, over a period of only five years employment had increased twentyfold. In terms of the number of units operating in the EPZ, if we go along with the figures provided by Boulle (1975), there were only five

EPZ companies in 1970, but this figure stood at 66 in 1975, representing an average of twelve new EPZ companies per year. With regard to the share of EPZ to total exports, according to Yeung LamKo (1998) the share which was 6% in 1973 increased fourfold to 24% in 1978. Furthermore, in terms of net foreign exchange earnings, according to Boulle (1975) the net earnings in the EPZ which stood at Rs 11.9 million in 1973 nearly tripled to reach Rs 35 million in 1974. This figure, however, decreased in 1975 to reach Rs 6.3 million, mainly as a result of the oil crisis which hit the developed world badly and brought about a recession which, *inter alia*, raised transport costs drastically (English, 1997).

Contrary to the Hamada (1974) model, the growth in the EPZ did not cause any distortion in the agricultural sector, in particular the sugar sector, which continued to experience sustained growth throughout the period, with a GDP at current prices of Rs 741 million in 1976, Rs 701 million in 1977 and Rs 729 million in 1978. The sector continued to employ more than 50,000 workers up until 1978, showing that the increase in employment in the manufacturing sector was not occurring to the detriment of the sugar sector. In reality, employment in the sugar sector would experience a decline over the years, more as a consequence of the world recession and the difficulty of the sugar sector worldwide, but it was still employing more than 46,000 workers in 1982, which meant it was still ahead of the emerging EPZ sector in the absolute number of workers employed.

As a matter of fact, the increase in employment in EPZ did not lead to an automatic decrease in employment in the sugar sector, principally because the EPZ was targeting more school leavers, in particular the first batch of girls who had benefited from free education at secondary level since 1976. It is worth recalling here that primary education in Mauritius has been free since 1944, but in 1976 the government also made education free at secondary levels. It became compulsory for educational establishments to provide free education up to secondary level. Although this was regarded more as a political move by the incumbent government to win the 1976 elections, the consequence of this decision was really beneficial since enrolment for secondary education increased from 66,920 in 1976 to 78,038 in 1977, representing an increase of 16.6 % in enrolment. This also represented an increase of 5 points in the enrolment ratio from 38 to 43 (CSO, Mauritius).

Although free education benefited the 12- to 19-year age group as a whole, the effect was more pronounced for female students. Enrolment of girls in secondary schools increased from 28,030 in 1975 to reach 39,164 in 1980, representing an increase of 39.8% and a more than 10-point increase in the gross enrolment ratio from 32 to 43. The difference in the gross enrolment ratio between males and females, which had been in favour of males by 8 points in 1975, fell to only 3 points in 1980. Since 1990, more girls than boys have been enrolled in secondary education.

The increase in the number of children enrolled for secondary education meant that many people were able to broaden their horizons and no longer felt confined to the sugar plantations. Semi-skilled workers who had some secondary schooling were now interested in working in more skilled jobs and looked towards the EPZ for those opportunities. In addition, conservative Mauritian attitudes which saw women's work as restricted to household activities began to change. People began to see that women could also contribute to the economic development of the country and bring additional revenue to the family budget.

It is important to highlight the positive linkage between education/skills development and the trade theories. This type of capacity building which comes with free education is a critical factor to explain the success of the EPZ and any subsequent policies adopted by the government.

In line with the above explanation, it is noted from Table 3.5 that the number of women employed in the manufacturing sector, of which EPZ accounts for a large proportion, surpassed men at the very start of the EPZ. Despite the fact that women were then paid lower wages than men in the EPZ (approximately 30% lower, according to the Ministry of Industry (1990), women undoubtedly benefited from these developments, as their ability to earn a wage provided them with a sense of empowerment and independence. Chernoff (2002:14) confirms the role of women in the growth of EPZ when he concludes that *'the immediate source of the EPZ boom starting in 1983 was a shift of female labour from unemployment to the EPZ sector. This is an interesting example of growth from pure*

structural change. This was a one-time growth engine made possible by a reserve army of unemployed workers.'

Table 3.5 Employment in EPZ

Year	Male	Female	Total
1978	14274	17680	31954
1979	15363	19778	35141
1980	15365	20807	36172
1981	16013	20876	36889
1982	15884	22445	38329

Source: CSO Mauritius

As far as the sugar sector was concerned, the number of female workers and employment in general, though falling (as a result of layoffs), had remained rather high from 1978 to 1982, as shown in Table 3.6, confirming that labour had not shifted massively from the sugar sector to EPZ, but rather that school leavers were now joining the new sector.

Table 3.6 Employment in sugar sector

Year	Male	Female	Total	GDP at current prices (Rs m) for sugar	Contribution of sugar as a % of GDP
1978	37,470	13,862	51,332	729	13.3
1979	35,271	13,443	48,714	953	14.6
1980	34,957	12,536	47,493	598	8.1
1981	35,046	12,225	47,271	899	10.2
1982	34,491	11,966	46,457	1140	11.4

Source: CSO Mauritius

As regards real economic growth, this index also remained positive throughout the period, which shows that there was no drastic fall in national income at international prices, as asserted by the Hamada model. The real GDP growth was 7% in 1977, 4% in 1978 and 3.6% in 1979. The variations in the real GDP growth can be attributed more to the international oil crisis than to anything else.

Given that the H-O model is unable to accommodate these complexities and that, contrary to the predictions of the model, Mauritius adopted the EPZ successfully, alternative trade theories need to be tested to see whether they are better able to shed light on the EPZ story in Mauritius. Accordingly, the next section analyses ‘new trade theories’, especially the one produced by Krugman and Venables (1995). This new trade theory assumes increasing returns to scale within a monopolistic framework, with comparative advantages based on product differentiation rather than on factor endowments. Krugman and Venables (1995) also insert changing transport costs and wage costs into the model.

3.3.2 The Krugman and Venables model

The new trade theory by Krugman and Venables was developed to explain the aspects of the real world that the H-O model failed to consider in explaining trade between nations. The World Trade Report (2008) asserts that in the 1980s, data set on trade at firm level became available and showed considerable differences among firms. This produced alternative trade theories which would attempt to produce new theoretical explanations to accommodate the shortcomings of the H-O model, with its problematic assumptions such as no transport costs, homogeneous products, constant returns to scale and perfect competition.

The new trade theory assumed imperfect competition, increasing returns to scale and intra-industry trade, and rather than focusing on factor endowments only to explain trade, Krugman focuses on geographical concentration of varieties, i.e. different countries producing different varieties and then trading them. *‘In the new trade theory, the basic point was that increasing returns are a motive for specialisation and trade, over and above conventional comparative advantage, and can indeed cause trade even when comparative advantage is of negligible importance ... among ... countries with similar resources and technology’* (Krugman, 1995).

For this to happen, Krugman (1998) explains that market size effects are determinant to the geographic concentration effect, especially with respect to the linkages that the market size creates. For instance, a large local market creates both backward and forward linkages. Backward linkages are created in the sense that locations with good access to large markets are preferred choices for production of goods subject to economies of scale (for example,

the preferred access of Mauritius to the EU and US markets during the 1980s and 1990s made the Mauritius EPZ an attractive destination for investors from the Far East). Forward linkages occur when a large local market supports the local production of intermediate goods, thereby lowering costs for downstream producers.

Given that geography is the central component of the theory, Krugman believes that models dealing with distance should come into play. The linkage effects mediated by transport costs become an integral component of Krugman's geographic concentration model. Contrary to previous trade theory models, Krugman includes transport costs and uses the 'iceberg' transportation costs proposed by Samuelson, which assumed that *'a fraction of any good shipped simply "melts away" in transit so that transport costs are in effect incurred in the good shipped'* (Krugman, 1998). The 'melting' is assumed to take place at a constant rate per distance, resulting in the assumption that cost of transportation is always a constant factor of f.o.b (free on board). The inclusion of transport costs in international trade theories contrasts with the H-O model, which assumed that transportation was costless.

The Krugman model also stresses the fact that increasing returns create economies of scale, and the consequences of the scale economies and the assumption of labour immobility will lead to goods being produced in specific locations. And if cost of production is assumed to be the same in all countries, then the deciding factor in location is transport costs. With increasing returns, we also have to relax the assumption of common wages, meaning that wage differentials will also be a determining factor for location.

The Krugman and Venables (1995) model most clearly incorporates the effects of transport costs and wages on the gains from trade. .

The model assumes two regions, North and South, producing two kinds of goods; (i) agricultural, with constant returns to scale, and (ii) manufacturing, with increasing returns to scale. According to the model, 'at high transport costs all countries have some manufacturing but when transport costs fall below a critical value (t), a core-periphery North-South region spontaneously forms, and nations that find themselves in the periphery suffer a decline in real incomes. At still lower transport costs, there is convergence of real incomes in which peripheral nations gain and core nations may lose' (Krugman &

Venables, 1995:857). This is principally due to the fact that the peripheral region has a competitive advantage in the form of lower wages. In the beginning, this advantage is more than offset by the North's superior access to markets through linkages. However, as transport costs decline, the importance of the linkages also declines, so that at some critical point the relevant industry finds it profitable to move to lower wage locations (Krugman, 1998). It may be noted, however, that at still lower transport costs the wage differential between North and South tend to disappear.

The model makes the following assertions:

- (i) At high transport costs there is a unique equilibrium in which manufacturing is equally divided between countries.
- (ii) With some fall in transport costs an intermediate level is created, but the linkages are not powerful enough to destabilise equilibrium. But if the North has all its labour employed in manufacturing, then linkages are sufficient to ensure that there is an asymmetrical equilibrium.
- (iii) When transport costs fall below a critical value, there are now two unstable points of equilibrium. At this point, the North specialises in manufacturing and has wages above the marginal product of labour in agriculture. All agricultural output is produced in the South, which may also produce manufacturing. There are in this case three possibilities, one of them being that agriculture operates in the North and manufacturing is concentrated in the South. The other two are either that all manufacturing is in the North and agriculture in the South, or that agriculture and manufacturing are shared between North and South.

The critical value t is defined as:

$$t^{\sigma-1} = \left(\frac{1+\mu}{1-\mu} \right) \left(\frac{\sigma(1+\mu)-1}{\sigma(1-\mu)-1} \right)$$

where: μ = the share of manufactured intermediate goods

σ = elasticity of demand for a single variety

From the above equation it is noted that asymmetry will arise only if there is a significant role for intermediate goods (i.e. a value for μ greater than zero), which was the case for manufactured goods produced by many EPZs, including that in Mauritius. If $\mu=0$ then $t=1$ and any t which is greater than 1 would imply symmetry between economies. At the other extreme, if $\sigma(1 - \mu) < 1$, meaning either a high μ or a small σ , the expression becomes negative. According to Krugman and Venables (1995), the core periphery pattern will then emerge, no matter how high the transport cost. Finally, for values of μ in between, i.e. $0 < \mu < (\sigma-1)/\sigma$, the critical t value will be greater than 1. The critical t value will thus be higher the lower the elasticity of demand (σ) for the product and the higher the share of intermediate goods (μ). That is, the higher the firm's price cost mark-ups and the greater the share of intermediates in production, the more powerful would be the forces of geographic concentration.

3.4 Empirical assessment

(A) Transport cost and labour cost

Now, how does this apply to Mauritius? As noted from the previous section, initially when transport costs are high, each region will be self-sufficient and produce both manufacturing and agricultural goods. At the start of the EPZ sector in Mauritius, notwithstanding the fact that the first few years would be difficult given that the industry was still in its infancy, it is noted from the number of export enterprises in Figure 3.6 that the sector started performing rather well around 1973. After only three years of operation, the number of export-oriented enterprises was already at 32, with an employment figure of 5,800 workers. This constituted an increase in employment of 124% in one year. The employment figure went up to 9,000 in 1974, which still constitutes a significant increase of 55.1%, although a diminishing trend started to become apparent. This downward trend was confirmed during the subsequent years, apart from the exceptional rise in 1976 (66.9%). This was exceptional as it was an election year and the government put pressure on EOE's to employ the maximum number of people to mop up unemployed labour temporarily. A drastic decrease in the rate of increase in employment was noted for 1975, 1977 and 1978. The rate of increase in employment fell to 14.4% in 1975, to only 1.7% in 1977 and attained a

very modest recovery of 4.5% in 1978. The increase was 8.2% in 1983 and reached 43.7% in 1985.

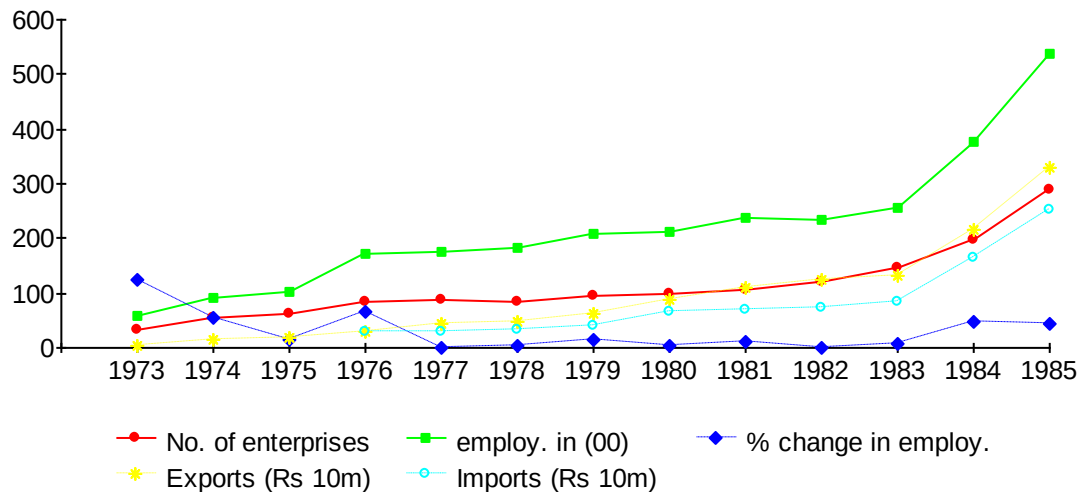


Figure 3.6 Export-oriented enterprises (1973-1979)

Source: Adapted from CSO figures

Although other factors such as adverse weather conditions could explain some of these low levels of improvement, they were more a consequence of the world recession caused by the oil crisis, which led to an increase in transport costs. Between the years 1974 and 1981, the price of gas oil increased six-fold from Rs3.57/gallon in 1974 to Rs20.50/gallon in 1981 (CSO Mauritius). This surely had a multiplier effect on freight and sea transport costs. According to Boule (1978), sea freight charges increased by 300% on average for the EPZ between 1974 and 1977. Air freight charges also increased by approximately 20%, but not many of the raw materials and finished products could be transported by air freight.

Transport problems in general were a serious issue because the customers of EPZ products were located very far from Mauritius. Boule (1978:18) uses the example of the wool knitting sector to demonstrate this. He argues that *'our geographical remoteness from markets introduces an important, costly and risky lag between the time a decision is made to produce for a particular country and the time that order is ready for shipment'*. Boule (1978) explains that *'raw materials typically have to be ordered in June/July for the selling*

season of September/December the following year, since shipment needs to be effected by April and raw materials must be received prior to production in January/April’.

Therefore, coming back to the Krugman and Venables model, the trade costs associated with sea transport were at that time very high in this ‘peripheral’ region, where manufacturing was expensive. As a result, investors in the northern countries were probably not interested in Mauritius during the late 1970s, as transport costs were relatively high.

It must be remembered that the Krugman and Venables model is based on the two determining factors in deciding whether manufacturing will succeed in a particular region or country – namely, transport costs and wage costs. We know that during the 1970s transport costs remained high in Mauritius and it follows that, if it were not for low wage costs, the EPZ in Mauritius would not have survived.

Thus, when explaining the take-off of the EPZ in the 1980s from the perspective of this model, one needs to examine the evolution of the two determining factors – namely, transport costs and wages.

(i) Air and sea transport costs

Air transport during the 1980s

First of all, it is noted that during the 1980s, as communication became more open worldwide, the number of direct flights from Mauritius to Europe grew steadily. Air transport costs fell and the following major factors could explain that fall:

- (a) The improvement of relations between the USA and the former USSR led to a more secure world and an embrace of liberalisation.
- (b) Mauritius could afford to accommodate more aircraft after the renovation of its airport during the mid-1980s. Air Mauritius, which is the national carrier, started its operations in 1972. However, it was only in 1983-1984 that Air Mauritius began operating non-stop flights to major European cities, including London, Paris and Rome. During the period 1986-1991, Air Mauritius made

investments worth Rs 3.2 billion in aircraft, transport equipment and infrastructure (Government Information Service, 2003). Its share of air traffic rose from 28% in 1981 to 64.3% in 1991. In 1991 Air Mauritius was operating weekly: ten flights to Europe, four to the East and Far East, and five to Africa and Madagascar. There was a twentyfold increase in cargo transported by Air Mauritius between 1981 and 1991.

- (c) As pointed out by Lim Fat (2010:175), while recognising that high air freight costs were a major constraint, when the first EPZ exporters to Europe started negotiations with airlines, it was found that much of the cargo carried by numerous airplanes from France to Reunion Island (a French dependency about 200 kms from Mauritius) was food items that could not be transported by sea, which would impact on the freshness of the items. He added, *'consequently, the garments [of the Mauritian EPZ] enjoyed much reduced air freight on those planes to Europe that would otherwise have returned to France almost empty'*. But he was also quick to recognise that sea freight costs were more important than air freight, as the bulk of EPZ exports were carried out by sea. We therefore need to verify the evolution of sea transport before drawing the conclusion that transport costs had fallen and were causal in the EPZ take-off. The next section deals with this issue.

Sea transport during the 1980s

The Port Louis harbour was significantly upgraded between 1980 and 1990. At the time of independence the harbour was a port where most cargoes were intercepted in midstream and towed to the port for unloading in lighters, a type of flat-bottomed boat used to transfer goods to the lighterage (the use of lighters in loading or unloading ships and in transporting goods for short distances) wharves. Cargo-handling operations were therefore extremely slow, with long delays, high turnaround times and heavy port detention charges. In 1976, the government devised a plan to improve port facilities. The Mauritius Marine Authority was created, along with the construction of a workshop for heavy equipment, a fire station, a port administration building and the acquisition of a fleet of cargo and container handling equipment. By 1983 the

transformation of Port Louis harbour from a lighterage port to a new port with deep-water facilities for general cargo and container vessels, and equipped with a new operational handling system had been completed. Therefore, in a short space of time the port was transformed into a modern gateway with excellent infrastructure for effective marine and cargo handling operations. But could it be inferred that all these led to a fall in sea shipping costs?

To answer this question, the hypothesis will be tested that falling shipping costs stand out as a causal factor for the EPZ take-off of 1983-1984. Two of the variables that determine shipping costs will be analysed – namely, waiting time at port and port charges.

(a) Waiting times at port between 1982 to 1987 were as follows:

Table 3.7 Waiting time at port

Year	1982	1983	1984	1985	1986	1987
General cargo (average wait time in hours)	9.8	5.5	4.2	11	--	7
No. of general cargo vessels	--	--	14	8	11	--
Container merchandise unit (average wait time in hours)	6.9	5.8	4.1	7	10	4
No. of container merchandise vessels	--	--	162	178	212	--

Source: Adapted from Gouvernement de l'Ile Maurice (1985) pp. 86, 102 and Dharmalingam (1987) p. 5.10

The waiting time spent by cargo ships at the Mauritian port before debarkation, which was already relatively low in 1982, decreased significantly to only 5.5 hours in 1983 and only 4.2 hours in 1984. The number of ships docked had not increased significantly. Therefore, this significant fall in waiting time could at this stage, if other factors followed the same trend, be causal in a fall in shipping costs. However, to confirm the hypothesis that shipping costs were really falling, we need to see if port charges also showed such a drastic fall.

(b) Port charges

Gouvernement de l'Ile Maurice (1985) gives the following comparative table for average port charges for container ships in Mauritius compared to other ports in the Indian Ocean region for the period 1983-1984. According to a representative from the Mauritius Port Authority, these charges are reviewed only once every five to ten years, meaning that the charges remained the same at least from 1980 to 1988-1990.

Table 3.8 Port charges

Ports	Port charges for container ships in Mauritian rupees
Port Louis (Mauritius)	37,000
Pointe des Galets (Reunion)	52,000
Tamatave (Madagascar)	27,000
Mahe (Seychelles)	40,000
Djibouti	8,000

Source: Adapted from Gouvernement de l'Ile Maurice (1985) pp. 86, 102 and Dharmalingam (1987) p. 5.10

From Table 3.8 it can be seen that port charges at Port Louis were not the lowest in the region during 1984-1988. Mauritius was cheaper than Reunion and Seychelles, but more expensive than Madagascar and Djibouti. Therefore, the port charges applied by Mauritius were in line with the rates prevailing in the region, and this suggests that port charges were not low enough to provide Mauritius with a comparative advantage that would make it an attractive location for EPZ investors.

However, it should also be noted that Gouvernement de l'Ile Maurice (1985) confirms that Port Louis occupies a good geographical location and is well placed in relation to European and Far East routes, as well as to regional and extra-regional routes. The report mentions that the movement of ships reveals a preference for Mauritius as first stop, whatever the original port from which the ships came. For instance, the 'long courier' vessels coming from Europe and the Far East would stop in Mauritius first, then in Reunion and Madagascar. Similarly, ships coming

from Durban would use the Mauritius-Reunion-Madagascar axis. As for ships on the regional route from Seychelles and Comoros, their preference would be to stop in Mauritius or Reunion first before moving to Madagascar. Therefore, Mauritius seems to be the port of preference for a first stop for regional and long couriers.

Thus, although the Mauritius port is not the cheapest in the region in terms of port charges, the fact that it is the first port of preference in the region for incoming ships means that the cost of imports from Mauritius is in relative terms lower than that of other countries in the region.

However, in the light of the limited evidence and given that details on issues such as the number of ships and the number of containers that docked in Mauritius are not available for that time period, it is not possible to infer conclusively that shipping costs were causal in the EPZ take-off. But one could speculate that the cost of land transport to carry merchandise from one place to another on the island was quite low, given the country's small size – compared to countries such as Ghana, Egypt or even Senegal. There was also the fact that Mauritius was the first port of preference for ships coming from any part of the world, which gives the Mauritius port a definite comparative advantage over other ports in the region. But obviously this factor did not change significantly in 1983-1984 when the EPZ took off. Let us therefore see if the wage costs of Mauritius during that period give us a better result.

(ii) Wage costs during the 1980s

The only way to see whether the low wages factor was causal in the EPZ success in Mauritius is to compare it with other African and emerging countries that had operational EPZs in the 1980s. From Kreye (1987:8) it can be noted that in 1986 only eight African countries had EPZ firms in operation – namely, Egypt, Ghana, Liberia, Mauritius, Morocco, Senegal, Togo and Tunisia. Of these, only Egypt and Mauritius had already created an EPZ and had more than one EPZ firm operating during the mid-1970s. Asian countries such as Bangladesh, Hong Kong, the Philippines, Malaysia, Sri Lanka and Singapore, by contrast, already had fully operational EPZs during the 1970s.

Table 3.9 shows wages per day in manufacturing during the period 1981-1987 in selected countries in US dollars, adapted from ILO figures (see Table (a) in Annexure 2 at the end of the chapter). The wages were given in local currencies. We divided these by the exchange rates of the relevant countries for the different time periods (see Table (b) in Annexure 2 at the end of the chapter) to enable a comparative study of the period under review.

Table 3.9 Wages per day in manufacturing in USD

	1981	1982	1983	1984	1985	1986	1987
Egypt	--	3.9	---	---	5.5	6.1	7.1
Bangladesh	1.5	1.2	1.1	1.07	--	--	--
Hong Kong	9.3	11.9	10.9	11.5	12.6	13.6	15.3
Malaysia	6.10	7	7.81	8.42	8.60	8.20	8.30
Mauritius	3	2.51	2.61	2.39	2.28	2.79	3.43
Philippines	4.15	4.26	3.74	3.28	3.50	3.57	4.11
Singapore	9.48	10.20	11.4	12.45	12.5	---	---
Sri Lanka	1.46	1.34	1.36	1.46	1.58	1.62	1.70

Table 3.9 reveals that Mauritius was the third cheapest location, overtaken only by Sri Lanka and Bangladesh, which, it should be noted, did not benefit from the preferences that Mauritius received under the Lomé II Convention (after 1980).

On the other hand, Egypt also had the same preferences and an EPZ, but its wage rates were much higher. For instance, for the years 1982-1985 immediately preceding and following the EPZ take-off in Mauritius, the average wage for that period in Mauritius was 2.45 USD/day compared to 4.70 USD/day in Egypt.

Therefore, although there is no substantial evidence that transport costs in Mauritius were falling significantly during the take-off stage, the fact is that transport costs worldwide were experiencing a rather drastic decline, with a fall in oil prices from nearly \$40 a barrel in 1981 to less than \$28 in 1983. And, it may be assumed that transport costs worldwide fell as a result of the end of the oil crisis and consequently, in line with the Krugman and Venables theory, the importance of being close to the market declined as peripheral nations in the South now also offered the advantages of cheap labour (lower wages). These lower wages would more than offset the disadvantage of being remote from suppliers.

Additional empirical evidence to ascertain if there was some kind of trend regarding the importance of transport- and labour costs was gathered using the case of Jack Tellor International, an EPZ company that was set up in Mauritius in 1974 for the production of shirts for exports to the European market and which is one of the few companies that has remained operational until now. The company sees labour costs as a very important factor and transport costs of lesser significance to explain its longevity and sustainability over the years. During a meeting with the marketing manager of Jack Tellor, he was asked to rate on a scale of 1 to 4 (1 being not important and 4 the most important) the contribution of these two factors to the success of the company. He provided the following responses:

Table 3.10 Importance of labour costs and transport costs to companies

Year	1985	1990	1995	2010
Labour costs	4	4	3	3
Transport costs	1	2	3	3

We note from the Table 3.10 that in 1985 the importance of transport costs to the success of the company was rated as not important at the take-off of the EPZ, but they rose to become more important in 1990. This could be attributed to the fact that the relatively low oil prices from 1986 (with the exception of 1991) accounted for a relatively significant contribution to transport costs, together with improved transport infrastructure. Furthermore, air and sea links to Europe had improved and became more frequent, which helped in keeping transport costs in check.

As regards labour costs, the marketing manager of Jack Tellor reveals that labour costs were regarded as very important to the company in 1985 and even in 1990. But following the increase in wages in the EPZ sector as a result of the boom years, where the average earnings of employees in the EPZ nearly doubled from Rs 1,832 in 1990 to Rs 3,493 in 1995 (CSO data), the importance of labour costs had decreased in importance from very important, although they still remained relatively important.

Therefore, based on the analysis of trade theories, it seems that the H-O model of factor endowments cannot account for the EPZ take-off in Mauritius. Alternatively, the Krugman and Venables theory – which, to repeat, states that when transport costs fall worldwide

(which was the case with the fall in oil prices during the 1980s), the importance of being close to the market declines and the low wages advantages offered by peripheral countries will more than offset the disadvantage of being remote from suppliers – reinforces the importance of low wages to explain the exceptional EPZ success in Mauritius. The next section will examine the other hypothesis, which suggests that it was the Lomé trade preferences that caused the EPZ take-off in Mauritius.

(B) The preferences framework and its impact on Mauritius's success

As mentioned in the section on wage costs, the fact remains that as we entered the 1980s Mauritius was one of the few countries in the African region with an EPZ associated with the EEC. The strategic choice of the government to move readily towards an aggressive EPZ strategy proved to be very beneficial, because Mauritius was opportunistic enough to choose the right path at the right time, while other African countries were still struggling to maintain the ISI and would move towards creating EPZs only in the 1990s, e.g. 1990 in Kenya, 1995 in Togo, 1996 in Namibia (Madani, 1999). The very quick move of Mauritius towards establishing its EPZ gave it a lead of more than 20 years over African countries, with the exceptions of Senegal, Egypt and Liberia, which had established weak EPZs in the mid-1970s.

It seems likely that Mauritius's preferential access to EEC markets through the Lomé II Convention and the US market through the Multi-Fibre Agreement (MFA) was an important factor in attracting investments in the Mauritian textile sectors from South-East Asian investors. These foreign investors were motivated directly by the duty-free and quota-free access that Mauritius had with EEC markets as from 1981-1982, but also indirectly by the need to avoid the quotas on textiles and clothing that were constraining exports from Hong Kong and other regions to the USA through the Multi-Fibre Agreement (MFA). The next section will provide a more detailed explanation of the Lomé Convention and the MFA and it will be established whether one or both of these preferences were causal in the EPZ take-off of 1983-1984, or whether these preferences only facilitated the optimum conditions for another factor to emerge as the causal factor for the EPZ take-off of 1983-1984.

The MFA

The MFA was a set of formal quota agreements and restrictions, governing textiles and the clothing trade between developing countries and the developed world. MFA came into force to allocate export quotas to the low-cost developing countries, limiting the amount of imports to developed countries whose domestic industries were facing serious challenges from rapidly increasing imports. The MFA was subsequently extended from December 1977 onwards until its gradual phasing out in January of 2005.

The MFA was therefore a form of protectionism for developed countries to secure their own textile industries against the threat posed by low-cost competition from less developed countries. However, by giving quotas to individual nations, it also gave them a guaranteed share of the rich countries market (BBC News, 2004). Subramanian and Roy (2001) have confirmed that *‘one of the effects of these quotas was to redistribute production between exporting countries – away from low cost towards high cost sources of production. Thus high-cost producing countries gained an advantage relative to low-cost producers, resulting in higher production that would otherwise not have taken place’*. Mauritius benefited as it found itself qualifying as one of the lowest-cost textile-producing countries in Africa, while not being as competitive as compared to Asian countries such as Sri Lanka and Bangladesh. Annexure 1 provides a detailed explanation of how the MFA worked. Basically, when the developed country imposes a quota restriction on the low-cost producing developing countries, it is directly decreasing the amount that it could supply but also indirectly increasing supply from the higher-cost producer at an artificially higher price.

Now, to see how this took place in reality. Subramanian and Roy (2001) explain this very clearly. The MFA limited imports of textiles and clothing to the USA and EU by awarding country-specific quotas. As a result, imports were redistributed among the countries that produced these goods, to Mauritius's benefit. Here is how:

Under this agreement many very low-cost textile-producing countries (Sri Lanka and Bangladesh) were given quota limits on the amount they could import to the USA and EEC. The Ministry of Industry (1990) explained that the US government imposed quota

restrictions on the importation of given categories of clothing once the imports of that product into the USA attained 1% in volume terms of US production in that category. Therefore, countries like China, India, Sri Lanka, Bangladesh and Pakistan were directly affected by this quota system, as the amount they could export to the USA and EU was severely limited. For example, with the dismantling of the MFA in 2004 the level of Chinese clothing exports rose from 11 million units in 1995 to 213 million units in 2004.

However, smaller countries seeking to expand their access to US markets benefited considerably from the MFA, as they were guaranteed access to the developed countries' markets (the USA in particular) in ways that would not have been possible if the quota system had not been in place. They were protected from competing directly with Asian low-cost producers. It was within this framework that *'when Hong Kong producers were looking for countries that had not yet fulfilled its quota to the US market that Mauritius became an attractive alternative'* (Ron 1991).

Subramanian and Roy (2001) show that the total rents that Mauritius received from Apparel Exports to the USA were 3.71 million USD in 1984 and reached a high of 68.96 million USD in 1999.

The Lomé Convention

The Lomé Convention of 1975 was a *'treaty envisaging wide-ranging economic cooperation between the nine countries of the EEC (the original members of the EEC were as follows: Belgium, France, West Germany, Italy, Luxembourg and the Netherlands. Denmark, Ireland and the United Kingdom joined later in 1973) and 46 Third World countries from Africa, the Caribbean and the Pacific (ACP)'* (Garrity, 1977).

As a member of the ACP group of countries, Mauritius received, under the Lomé II Convention, the right to export textiles and clothing duty-free and quota-free to the EEC (now the European Union). The Convention originally covered only the sugar sector, but in 1981, under the Lomé II Convention, textiles and clothing were also included. This led especially Asian investors (who had to pay duties to enter the European market) to seek duty-free access to the European market via Mauritius. A very good example of this is

Esquel Mauritius Ltd, a company set up in Mauritius in 1972 to manufacture cotton woven shirts. The company is 100% foreign-owned (i.e. the owners are based in Hong Kong). During interviews conducted with representatives of the company, it became clear that the very existence of the company in Mauritius at that time was principally due to the preferences and duty-free access of Mauritius to the EEC market and the fact that the company did not have to satisfy any rules of origin, given that the last substantial transformation took place in Mauritius.

However, when considering the importance of these conventions as a cause of the EPZ's take-off, it is important to remember that all African countries qualified for the same access and preferences that Mauritius obtained. Mauritius was one of only a few African countries (the others being Senegal, Egypt and Liberia) that decided to create an EPZ and obtain the full benefits of the preferences. Other African nations would try the EPZ experience only much later in the late 1980s and 1990s. While Mauritius was experiencing the take-off of its EPZ, most African countries were still struggling with nationalisation policies and placed a heavy emphasis on import substitution. Therefore, it can be concluded that the conventions were important but not sufficient to explain the success of the EPZ in Mauritius.

3.5 Conclusion

At the time of the economic take-off in Mauritius in 1983-1984, the EPZ sector was the driving force behind the country's exceptional economic performance. The neoclassical and new trade theories were reviewed to determine which one of them was more appropriate to explain the causal factors behind the success of the EPZ in Mauritius.

The H-O model stipulates that a country will produce and export only those goods which use intensively the factor of production with which it is relatively well-endowed. Going along with this model, Mauritius would to this day have only two sectors – namely, sugarcane plantation and tourism. Throughout this chapter, the H-O model has been systematically questioned, which assumes that countries cannot succeed in the EPZ if the necessary factor endowments are lacking. Another controversial assumption of the H-O model is that it assumes common wages across countries.

The new trade theory proposed by Krugman and Venables, with its emphasis on transport and wage costs, seems to fit the Mauritius EPZ story better. Although, with the limited data on transport costs, conclusive evidence that falling transport costs contributed to the EPZ success is still lacking. However, stronger evidence of the role played by low wages in the EPZ take-off has been provided.

As regards preferences, Mauritius and all African countries qualified for the Lomé Convention. However, in contrast to most other African economies, Mauritius quickly created the EPZ, as explained through the political economic factors identified in Chapter 2, and was successful in implementing at the right time. Many African countries later tried the EPZ experience, but were not as successful as Mauritius. Evidence of the failure of other African countries to implement the EPZ as early and as successfully as Mauritius managed to do is provided by Madani (1999), who stresses that it was only after having seen the success of Mauritius, the Dominican Republic and some other zones around the world that many sub-Saharan African countries established an EPZ. He provides an analysis of some sub-Saharan countries that have adopted the EPZ strategy – namely, Togo (1989), Namibia (1996), Kenya (1990) and Cameroon (1990). This confirms the fact that other African nations adopted the EPZ much later than Mauritius, but none of them experienced the unprecedented take-off, as was the case for Mauritius. The main reasons were either political unrest or increased competition from neighbouring countries as the preferences faded away during the 1990s.

The EPZ story in Mauritius can be summarised as follows: its creation was linked to the interaction of the political economy factors identified in Chapter 2, which were unique to Mauritius, and the successful implementation of the EPZ was the result of the causal factor that the new trade theory of Krugman and Venables provides for – mostly labour costs. This cost factor, together with the timely application of the preferential access of Mauritius to the EU and US markets through the Lomé Convention, drove the take-off of the EPZ in Mauritius.

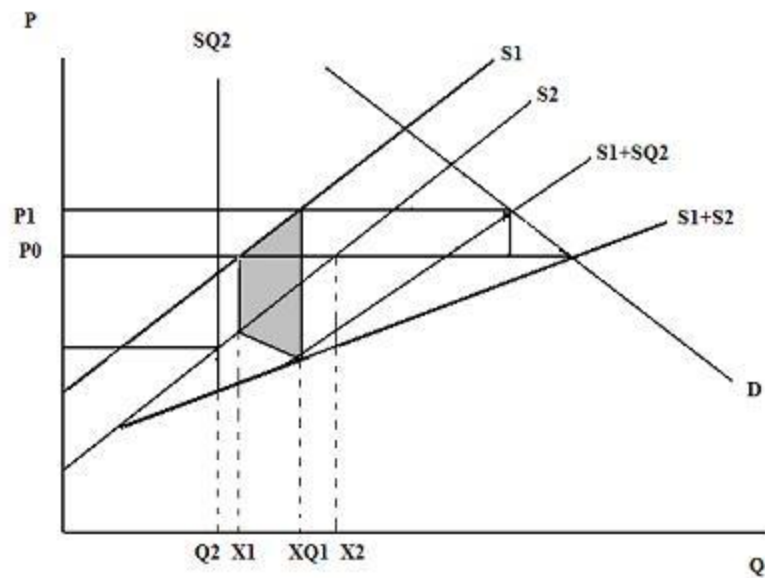
The next chapter will use cross-country data to examine the association between the EPZ and economic performance, and will provide an empirical analysis of the causes of the EPZ success. It will also enlighten the reader on whether the EPZ on its own is a guarantee of

success, or alternatively, whether other factors, e.g. the causal or control factors identified in this chapter, have to be present for the EPZ to succeed. If that is the case, this would mean that it was the more successful countries that were the ones to actually choose to implement an EPZ. With this empirical study completed, we would be in a better position to show conclusively whether the EPZ led to an economic take-off, or whether the EPZ was merely an outcome of Mauritius's broader economic development.

ANNEXURE 1

MFA Theory (from UK Essays.com)

Figure 1



Adapted from Faini, De Melo and Takacs (2001)

The table shows the price and quantity of a particular textile product for developed country A (the USA, for instance).

D-demand curve for country A.

S1-supply curve for high-cost producing developing country B (Mauritius) exporting to country A.

S2-supply curve for low-cost producing developing country C (Hong Kong or Bangladesh) exporting to country A.

Po is the initial price at which textiles will be sold where demand=supply, i.e. where S1+S2 interact with the demand curve in country A.

At Po, S1 will supply X1 of textiles, while the low-cost producer X2 will supply X2 (X2>X1).

Now, let us suppose that country A wants to make use of the Multi-Fibre Agreement by imposing an export quota on the low cost producer limiting its export to Q2.

In that case, the supply curve for the low-cost producer C will now be SQ2, while the supply curve for the high-cost producer B will remain the same at S1.

Given that there is now a quota restriction, the supply curves of both countries B and C when added together will now rotate inwards from $S1+S2$ to $S1+SQ2$.

The new supply curve ($S1+SQ2$) now equals demand in country A at a higher price P1. This is logical because as supply falls price rises.

At the new higher price P1 (quota rents meaning developing countries are receiving higher prices than they would be guaranteed in a free market than developing countries would receive, which is a consequence of the quota imposed on the low-cost producer) the low-cost producer will now supply less at Q2 instead of X2, while the high-cost producer will increase its supply to the developed country from X1 to XQ1, while at the same time obtaining a higher price.

Therefore, it is clear that when the developed country is imposing a quota restriction on the low-cost producing developing countries, it is directly decreasing the amount that it could supply, but also indirectly increasing supply from the higher-cost producer at an artificially higher price.

Now let us see how this took place in reality. Subramanian and Roy (2001) explain this very clearly. The MFA limited imports of textiles and clothing to the USA and EU by awarding country-specific quotas. As a result, imports were redistributed among the countries that produced these goods, to Mauritius's benefit. Let us explain how.

Under this agreement many low-cost textile-producing countries were given quota limits on the amount they could import to the USA and EEC. The Ministry of Industry (1990) explains that the US government imposed quota restrictions on the importation of given categories of clothing once the imports of that product into the US, in volume terms, attains 1% of US production in that category. Therefore, countries like China, India and Pakistan were directly affected by this quota system, as the amount they could export to the USA and EU was severely limited compared to a situation of free trade. For example, Free

Essays (<http://www.free-essays.com>) shows that with the dismantling of the MFA in 2004 'the level of Chinese clothing exports rose from 11 million units in 1995 to 213 million units in 2004'.

ANNEXURE 2

Table (a) below shows wages per day in manufacturing during the period 1981 to 1987 in selected countries in their respective local currencies.

Table (a) Wages per day in manufacturing 1981-1987

	1981	1982	1983	1984	1985	1986	1987
Egypt (Pounds)	--	2.71	--	--	3.86	4.28	5
Bangladesh (Taka)	26.81	27.00	27.2	27.3			
Hong Kong (Dollar)	52.2	72.3	79.5	90.1	98.3	106.4	119.4
Malaysia (Ringitt)	14.01	16.23	18	19.67	21.27	21.2	20.9
Mauritius (Rupees)	26.55	27.29	30.57	32.95	35.17	37.56	44.18
Philippines (Peso)	32.77	36.37	41.6	54.73	65.03	72.76	84.57
Singapore (Dollar)	20	21.84	24.08	26.56	27.68	--	--
Sri Lanka (Rupees)	28.25	27.79	32.04	37.22	42.87	45.42	50.03

Source: Adapted from ILO figures

Table (b) Exchange rates to 1 USD

	1981	1982	1983	1984	1985	1986	1987
Egypt (Pounds)	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Bangladesh (Taka)	17.99	22.11	24.62	25.35	27.99	30.41	30.95
Hong Kong (Dollar)	5.59	6.07	7.27	7.81	7.79	7.8	7.8
Malaysia (Ringitt)	2.3	2.33	2.32	2.34	2.48	2.58	2.51
Mauritius (Rupees)	8.93	10.87	11.7	13.8	15.44	13.47	12.88
Philippines (Peso)	7.89	8.54	11.11	16.7	18.6	20.39	20.56
Singapore (Dollar)	2.11	2.14	2.11	2.13	2.20	2.18	2.10

Sri Lanka (Rupees)	19.25	20.81	23.52	25.44	27.16	28.01	29.44
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Source: World Penn tables

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CHAPTER 4

AN EMPIRICAL ANALYSIS ON WHETHER OR NOT THE EXPORT PROCESSING ZONE (EPZ) IS ASSOCIATED WITH ECONOMIC SUCCESS

4.1 Introduction

This chapter uses a cross-country dataset to examine the association between EPZs and economic performance. An empirical analysis is performed to test whether EPZs lead to economic success, or if countries that are already successful also succeed when they implement EPZs. In other words, are there underlying factors other than the successful implementation of EPZs that would explain the economic success of countries such as Mauritius?

On the basis of the approaches employed in this chapter, it seems that although those countries adopting an EPZ tend to be globally more successful, a more in-depth analysis shows that this hypothesis cannot be proved statistically, and adopting an EPZ does not necessarily lead to the general effect of bringing success to a country.

4.2 Previous studies

There are a number of theories and models that are suggestive about the nature of the association between EPZs and economic success. For example, the neoclassical Heckscher-Ohlin (H-O) ‘two goods – two factors – two countries’ model discussed in the previous chapter explains the decision to adopt an EPZ in terms of the comparative advantages provided by factor endowments. Hamada (1974) uses this approach to analyse the economic implications of EPZs. He concludes that an EPZ does not necessarily improve consumption possibilities in the developing country. With the establishment of an EPZ through the use of the H-O model, the potential consumption possibility for a country does not improve with the introduction of more investment in the EPZ. In addition, labour is taken away from the more productive sector (agriculture) to the capital-intensive sector (manufacturing). Most neoclassical economists regard EPZs only as a second-best option. The best option will always be complete liberalisation.

However, Cling (2001) has provided an overview of neoclassical economists who take a different view than the majority and shows that the creation of EPZs improves a country's wellbeing.

New growth theorists tend to take a more positive view than the majority of neoclassical economists, as they stress the possible external effects of an EPZ on the host economy,

such as learning effects, human capital development and demonstration effects. By recognising the importance of these positive externalities, new growth theorists point to important gains for host countries that implement EPZs successfully (Johansson & Nilsson, 1997).

Romer (1993) goes further when he shows that the catalyst effect of EPZs on the rest of the economy may be transmitted through a variety of channels. For instance, workers trained within EPZs may transmit their knowledge and experience to subsequent employers; domestic enterprises may copy production and organisational methods applied by foreign firms in the EPZ, as well as benefit from distribution networks established to serve these foreign enterprises; and local entrepreneurs may be encouraged to seek their own export markets, and so on.

Tyler (2009), using the endogenous growth framework of new growth economics, analyses the empirical effects of the adoption of an EPZ policy on the growth of countries. The analysis incorporates the use of EPZs in the empirical estimates of a growth equation and demonstrates a positive and significant relationship between the use of EPZs and economic growth, providing support for the contention that host countries (using EPZs) grow faster than countries that have not employed such mechanisms. In the light of his findings, he advises governments that have rejected the implementation of EPZs to re-examine their policies.

Radelet (1999) observes that success in manufactured exports has been nearly synonymous with rapid economic development. With only a few exceptions, the countries that have achieved the most rapid gains in income per capita have also recorded the fastest growth in manufactured exports. He gives the example of the East Asian countries where incomes grew between fourfold (in South-East Asia) and sevenfold (in the Four Tigers) on the back of labour-intensive manufactured exports. Beyond East Asia, Mauritius, Ireland and Tunisia have all achieved both rapid manufactured export growth and rapid economic growth over sustained periods. He says that there is widespread consensus today that manufactured exports accelerate economic growth and technological progress by fostering closer connections with international firms, using leading-edge technologies, encouraging economic specialisation, promoting high rates of investment in profitable economic

activities, and providing foreign exchange to finance imports of capital goods which cannot be produced locally.

Although he is an advocate of EPZs, he also points to the general importance of the broader policies and underlying preconditions that are needed to encourage growth in manufactured exports. These include prudent macroeconomic policies, such as small budget deficits, appropriate exchange rates and low inflation, access to duty-free imports of capital goods and raw materials, political stability, and a basic level of reliable infrastructure. This suggests that countries that have successfully implemented the types of EPZs that lead to increases in manufacturing exports were already performing well by all the above standards.

4.3 Methodology

The key question of this chapter is whether implementing an EPZ is in some way a contributory factor to economic success or whether economic success is the product of broader underlying factors, which ensure that EPZs will work but are not really necessary for economic success. To assess this, we will use a number of different approaches.

Firstly, a general overview is given of the performance of countries for five and ten years prior to, during and after EPZ implementation. A comparison of EPZ countries is made with non-EPZ countries over similar periods (1980-1990) using the two success measures identified throughout the chapter. Broadly, it seems that those countries with EPZs performed better. Next, the data are investigated to find out whether this was actually the case or whether it was due to something else.

The first step is to analyse the types of countries that chose to implement an EPZ and their characteristics. . Probit estimation is used in this case. The results will give an indication of whether it was just certain types of countries that chose EPZs. The results will also show that the choice of implementing an EPZ may not be exogenous but related to additional factors. A way to deal with the endogeneity will also need to be identified at a later stage.

To address these questions an OLS estimator is used to estimate the relationship between EPZ and the measures of economic success whilst controlling for a number of characteristics. The specification will be $\text{Success (Y)} = f(\text{controls, EPZ})$.

In Chapter 2 it was noted that Inclusive Institutions were one of the crucial factors behind the successful creation of the EPZ. An important component of this is the quality of democracy, and a good way to measure democracy is through the Political Democracy Index provided by Polity IV (2009), which examines concomitant qualities of democratic and autocratic authority in governing institutions. In Chapter 3 the factors that may have caused the EPZ to succeed in Mauritius, namely low Labour Costs and/or Preferences (MFA and Lomé) were identified. These three factors will be used to see their separate effects on success by controlling for each factor and also their effects together with EPZ. Also included in the equation is a Transport Cost Dummy which accounts for differences in EPZ success between landlocked and open border posts. Population will also be added to account for differences between small and large states, and their effects on EPZ success.

$$Y = \alpha + \alpha_1 D_1 + \beta \ln X_1 + \beta_1 X_2 + \alpha_2 D_2 + \alpha_3 D_3 + \beta_2 X_3 + \beta_3 X_4 + \mu \text{-----} (1)$$

The control variables $\ln$ Income per Worker, Political Democracy Index, Lomé, Transport Costs, Initial Total Factor Productivity and Population would be X_1 , X_2 , D_2 , D_3 , X_3 and X_4 respectively.

Data from 80 countries have been used for the period 1970-1990, which broadly takes into account the timeframe from when EPZs were created and preferences were introduced, until the gradual removal of preferences in the 1990s. Different time periods for EPZ dummy D_1 pre- and post-EPZ are used to identify EPZ-specific effects and the different control variables also include those that were found to be significant in the probit analysis.

In order to take selection into account in the sample above, which was brought down from 80 countries to 38 because of the availability of data on the control variables, a comparison of the coefficients of the different EPZ lags/leads for 80 countries and 38 countries will be made. If the values of the coefficients are not so different, it will allow one to conclude that there is no bias in the selection of the 38 countries out of the 80.

Next, the question of potential endogeneity of EPZ implementation will be addressed. It may happen that countries have another factor or other factors which may have an effect on EPZ and not success, thus biasing upwards the effect of EPZ on success.

In order to address the question of whether only certain exceptional countries with exceptional characteristics adopted EPZ, the broad sample of 80 countries was divided into 2 groups, with the 40 countries with the highest average values for both success measures in one group and the 40 less successful countries in another, whereafter a comparison followed of how many had EPZs in both groups for both success measures. This will give an indication of whether EPZ really made a difference.

4.4 Data

The data for this chapter cover the period 1970-1990 and are annual. They were drawn from the United Nations Statistics Division Commodity Trade Statistics Database (COMTRADE) and Real Historical Gross Domestic Product (GDP) and Growth Rates of GDP for Baseline Countries/Regions (in billions of dollars in 2005) tabulated from World Bank World Development Indicators, International Financial Statistics of the IMF, HS Global Insight and Oxford Economic Forecasting, as well as estimated and projected values developed by the Economic Research Service, all converted to a 2005 base year. For the alternative measure of success – GDP growth rates – Penn World Tables Version 6.3 was used and values of growth rates of real GDP chain per capita (%) were taken. From the list of 80 countries, there are 33 EPZ countries.

The dependent variable is the Ratio of Manufacturing Exports to GDP (x/GDP in percentage) or Growth Rates of real GDP. As an initial step, data on the maximum number of countries possible were used, i.e. 80 (the list of countries provided in Annexure 1 at the end of the chapter includes both developed and developing countries) and a cross-country OLS analysis was used to estimate the relationship between the EPZ and the dependent variable Y (Ratio of Manufacturing Export to real GDP in percentages and GDP growth rates prior to and after the implementation of the EPZ). Implementation of an EPZ is represented with a dummy variable D_1 . Similar to Tyler (2009), a lag of two years between the establishment of an EPZ and its fully operational capacity is assumed. Annexure 3

shows when EPZs were established in the relevant countries in the sample. To confirm the EPZ-specific effects, a series of other EPZ dummies will also be given – namely, ten years prior (t-10) to establishment of EPZ, five years prior (t-5) to establishment of EPZ, the year of establishment (t), five years after establishment of EPZ (t+5) and ten years after establishment (t+10) of EPZ. The number of observations in this sample was 1,680.

In order to analyse whether success could be explained by factors other than EPZ, and given the limited data availability of the other possible factors to explain success, the sample has been restricted to 38 countries. Cross-country panel data analysis over the same period was also used. The 38 countries covered in the sample are listed in Annexure 2. From the 38 countries, there are 20 EPZ nations; the total number of observations is 798.

The sources for the other variables, i.e. the control variables are given in Table 4.1.

Table 4.1 Data sources

Variable	Symbol	Source
Ln Income per Worker compared to the US	$X_1(t-2)$	UNIDO website. Ln value for this variable was used, as it gives a good measure of the absolute change in Y for a given relative or proportional change in the Income per Worker index. In tabulating, it was assumed that manufacturing success in year t will depend on income in year (t-2), hence the use of $X_1(t-2)$.
Political Democracy Index	$X_2(t-2)$	Ranges between -10 to +10. Data obtained from the Polity website. It has been assumed that its effect will be felt after two years.
Lomé	D_2	The allocation of 0 for no Lomé preferences and 1 for Lomé preferences. This dummy would take a value of one for the relevant countries only as from 1981-1990, when Textiles and Clothing were also included in the Lomé preferences under Lomé II. From the sample of 38 countries analysed are 11 Lomé Countries, the ACP states – namely, the Dominican Republic, Fiji, Malawi, Mauritius, Barbados, Cameroon, Congo, Cote d'Ivoire, Madagascar, Togo and Trinidad and Tobago. From these 11 countries, only Mauritius and the Dominican Republic already had EPZs before the entry into force of the Lomé Convention. Furthermore, this variable has not been lagged, due to the fact that the preferences under Lomé were part of a package of preferences between ACP and EU (EEC at that time) and the fact that the Lomé preferences for textiles and clothing would enter into force in 1981 was known well in advance. Those deciding to use these preferences were ready from day one.

Regional Dummies	D ₃ , D ₄ and D ₅	Regional Dummies as additional control variables to ensure, as Dollar (1992) points out, that the results are not due to omitted factors correlated to geographic locations. Regional Dummies with D ₃ for Africa, D ₄ for Latin American and Caribbean and D ₅ for Asia Dummies.
Transport Costs Dummy	D ₃	Transport Dummy to account for differences between landlocked and open borders. The allocation of 0 for landlocked and 1 for open borders.
Initial Total Factor Productivity (TFP)	X ₃ (t-2)	TFP compared to US as another control variable as used by Edwards (1998) for which data are available from the UNIDO World Productivity Database from 1970-1990. This variable will account for technology growth and efficiency as used by the Solow model. It will also be used as productivity proxy for schooling years used by Dollar (1992). The initial TFP has been included as another variable, as current TFP is endogenous.
Population	X ₄ (thousands)	To control for differences in the success of EPZ between small and larger states.
Yearly Dummy Variables	D ₁₉₇₀₋₁₉₉₀	Yearly, Dummies used to capture specific events not specified in the model. For example, a global economic recession in a particular year is likely to have an impact on all countries.
Explanatory variables, population, investment share of GDP per capita and PPP		Inserted while carrying out the probit and endogeneity tests. The variables are Population, Investment Share of GDP per capita and PPP tabulated from the Penn World Tables Version 6.3. The Purchasing Power Parity (PPP) variable is the number of currency units in a country required to buy goods equivalent to what can be bought with one unit of currency in the base country (one US dollar). The PPP is also calculated over GDP, meaning the PPP in the national currency value of GDP divided by the real value of GDP in US dollars. This gives a better benchmark of the true competitiveness of a currency.

4.5 Overview of the performance of EPZ countries

The following graph depicts the performance of EPZ countries, ranging from ten years prior EPZ implementation to ten years after EPZ implementation measured in terms of the ratio of x/GDP (%) and growth rates, the two success measures used in this chapter. This gives an indication of whether countries had higher x/GDP and growth rates before or after establishing an EPZ, as shown in the graph.

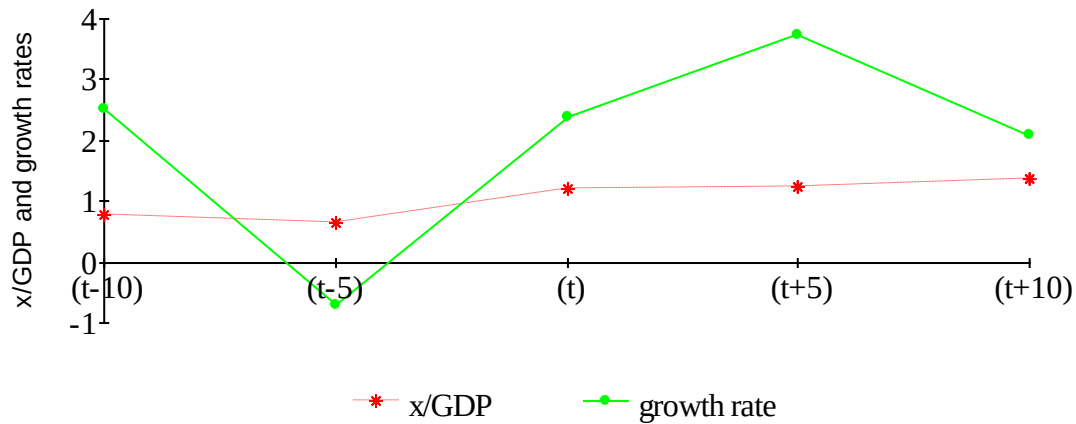


Figure 4.1 Success measure over time

On the y-axis are the averages of the success measures x/GDP and growth rates plotted against time for periods ten years prior to EPZ ($t-10$), five years prior ($t-5$), at time of EPZ establishment (t), five years after ($t+5$) and ten years after ($t+10$). The figure suggests that from the sample of thirteen randomly selected countries (Table 4.3), countries that implemented EPZs do better than when they were without EPZs. It is noted, however, that just after an EPZ has been implemented, the increase in average x/GDP was more apparent than for the other success measure.

The next step is to statistically compare some EPZ and non-EPZ countries in terms of their average x/GDP ³ and growth rates of real GDP for the period 1980-1990.

Table 4.2 EPZ and non-EPZ countries compared

EPZ			Non-EPZ		
Country/year of EPZ establishment	Average x/GDP (1980-90)	Average growth rates of real GDP (1980-90)	Country	Average x/GDP (1980-90)	Average growth rates of real GDP (1980-90)
Latin America					

³ Ratio of total exports of manufacturing goods in value terms to GDP.

Dominican Republic (1965)	1.574	1.488	Argentina	1.063	-1.903
El Salvador (1973)	1.009	-2.266	Barbados	0.745	1.630
Columbia (1964)	0.583	1.211	Bolivia	3.57	-1.914
Costa Rica (1977)	1.382	-1.074	Trinidad and Tobago	1.117	-0.814
Guatemala (1971)	0.697	-1.043	Uruguay	1.654	0.306
Asia					
Sri Lanka (1977)	1.088	3.001	Fiji	0.773	0.203
Indonesia (1973)	1.866	4.109			
Malaysia (1971)	3.629	4.019			
Philippines (1972)	0.907	0.216			
Africa					
Egypt (1976)	1.247	3.607	Cameroon	0.947	-0.543
Mauritius (1970)	1.301	5.554	Algeria	0.118	-0.338
			Tunisia	1.344	1.043
			Cote d'Ivoire	0.963	-1.47
Europe					
Ireland (1966)	1.935	1.713	Switzerland	2.638	2.117
Israel (1970)	5.096	1.075	Iceland	1.970	2.233
			Italy	1.755	2.615
N (number of observations)	13			13	13
Mean	1.716	0.017		1.434	0.002
Standard Deviation	1.276			0.902	
P-value	0.521	0.049		0.521	0.049

Source: UNIDO, Shane, World Penn Tables 2007 and author's own calculations. Growth rates measured in growth rates of real GDP per capita chain from World Penn Tables 2007. Average values are the unweighted average value obtained by taking the average of the Average x/GDP.

Table 4.2 uses a sample of 26 countries taken from the restricted list of 38 countries, which gives an equal number of EPZ and non-EPZ countries chosen from different regions to avoid regional bias. Data in the table clearly show that for both success measures (x/GDP and growth rates) EPZ countries on average performed better than non-EPZ countries. For instance, the average growth rate (calculated using growth rates for each country from World Penn Tables over the ten-year period) for the selected EPZ countries was 1.74%, which was approximately sevenfold higher than for non-EPZ countries, which stood at only 0.24%. The differences that were significantly different between EPZ and non-EPZ samples for growth rates were not so for x/GDP.

To check whether these values are statistically significant, a t-test was performed on both measures of success. The t-test gives a p-value of 0.52, which is far higher than 0.05. Therefore the null hypothesis that there is no difference of x/GDP between EPZ and non-EPZ countries has to be accepted.

On the other hand, using the other measure of success, growth rates of real GDP, the t-test gives a value of $0.049 < 0.05$, confirming the alternative hypothesis that EPZ and non-EPZ countries had significantly different values when measured using the success measure growth rates of real GDP per capita.

To compare within-country performance statistically, the performance of individual countries that implemented EPZ at time periods ranging from ten years before EPZ implementation to ten years after implementation were examined to see whether these countries showed significant differences when EPZs were established. This is shown in Table 4.3.

Table 4.3: Performance of countries (x/GDP) that implemented EPZ at different time periods

Countries/year of EPZ establishment	Real x/GDP (t-10) 10 years prior	x/GDP (t-5) 5 years prior	x/GDP (t): in year of establishment	x/GDP (t+5) 5 years post	x/GDP (t+10) 10 years post
Brazil (1988)	0.3054	0.6851	1.3190	1.4673	1.2535

Costa Rica (1977)	--	0.4008	0.9841	1.2493	1.2195
Cyprus (1982)	0.1042	1.1658	1.4384	0.6976	--
Egypt (1976)	--	0.9760	1.1347	1.0990	1.1078
El Salvador (1973)	---	0.3915	0.5761	0.8800	0.9926
Fiji (1987)	0.3607	0.6006	0.8792	1.5896	--
Jordan (1973)	---	0.2069	0.5094	1.3837	1.0258
Kenya (1990)	1.2946	0.6914	1.0339	2.1572	0.9948
Nicaragua (1976)	--	0.3649	0.7006	0.3447	0.1515
Pakistan (1983)	2.2910	2.3907	3.7232	3.8477	5.3008
Senegal (1974)	--	0.03157	0.6811	0.2247	---
Sri Lanka (1977)	--	0.0413	0.1081	0.6956	1.3338
Trinidad and Tobago (1990)	0.2928	0.5747	2.7258	0.4536	0.3855
N (number of observations)	6	13	13	13	10
P-value	0.77		0.09*	0.08*	0.15
10% confidence interval	Accept Ho		Reject Ho	Reject Ho	Accept Ho

Source: UNIDO, Shane, World Penn Tables 2007 and author's own calculation.

Note: real x/GDP is measured in %.

We can test whether the averages were significantly different from the period (t-5). At 10% confidence interval it can be seen that at (t) and (t+5) the value of X/GDP was significantly different from period (t-5).

However, as regards growth rates, as Table 4.4 illustrates, although average real GDP growth increases just after EPZ implementation, this increase is not large enough to reject the null hypothesis.

Table 4.4 Performance of countries (growth rates) that implemented EPZ at different time periods

Countries/year of EPZ establishment	Growth rates of real GDP	Growth rates of real GDP	Growth rates of real GDP (t), in	Growth rates of real	Growth rates of real GDP
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	(t-10) 10 years prior	(t-5) 5 years prior	year of establishe nt	GDP (t+5) 5 years post	(t+10) 10 years post
Brazil (1988)	2.47	-6.16	-3.18	3.11	-1.53
Costa Rica (1977)	2.00	3.38	7.09	-9.90	-0.13
Cyprus (1982)	4.22	22.90	4.43	7.19	6.05
Egypt (1976)	-2.29	2.57	17.57	9.42	6.01
El Salvador (1973)	0.77	-1.31	4.04	2.25	-1.88
Fiji (1987)	3.39	-5.11	-2.12	4.04	2.97
Jordan (1973)	0.63	-8.99	-11.14	9.12	7.62
Kenya (1990)	2.17	-2.84	0.70	1.95	-1.61
Nicaragua (1976)	1.29	1.19	1.81	5.73	-1.51
Pakistan (1983)	1.26	-0.89	2.33	1.43	2.08
Senegal (1974)	0.10	-9.31	1.15	5.5	-7.87
Sri Lanka (1977)	6.9	1.3	3.01	3.42	0.15
Trinidad and Tobago (1990)	9.9	-5.9	5.34	5.42	17.0
N (number of observations)	13	13	13	13	13
P-value	0.21		0.30	0.11	0.33
10% confidence Interval	Accept Ho		Accept Ho	Accept Ho	Accept Ho

Source: World Penn Tables 2007 and author's calculations.

Thus, although it seems that implementing an EPZ was generally associated with success, it could also be that only those countries that had the necessary preconditions for success did actually implement the EPZ, and that those countries would have grown faster anyway. A deeper empirical analysis needs to be undertaken with the larger number of countries before coming up with any sensible conclusion.

4.6 Empirical results

The empirical analysis will first of all try to provide explanations for why EPZ countries seem to be associated with success. The question is asked whether only those countries that were successful chose to implement an EPZ.

A probit is used to estimate EPZ implementation using the control variables, Income per Worker compared to the US, Political Democracy Index, the Ratio of Manufacturing Exports to GDP (X/GDP %) as predictors, but also other randomly selected factors such as Population (thousands), PPP and Investment Share of Real GDP per capita which may also have impacted on whether a country decided to adopt an EPZ. Data have been obtained from the World Penn Tables.

Our dependent variable is EPZ (t) and all the predictors are lagged by five years (t-5), which will provide an indication of the performance of these predictors five years prior to the implementation of the EPZ and also an idea of the type of countries that were prone to implement an EPZ within the next five years from period (t).

Table 4.5 Performance (x/GDP) of predictors five years prior to implementation of EPZ

Variables	EPZ Dummy(t)	
	Estimate	Standard Error (SE)
Ratio of Manufacturing Exports to GDP % (t-5)	0.305***	0.0467
Political Democracy Index (t-5)	0.056***	0.008
Population in thousands (t-5)	1.65e-05***	2.20e-06
PPP (t-5)	-0.004***	0.001
Investment Share of GDP/capita (t-5)	0.013*	0.007
Income per Worker compared to US (t-5)	-2.397***	0.303
Constant	-0.101	0.112
Observations	740	

* Indicates significance at different % levels: *** p<0.01(99% CI), ** p<0.05 (95% CI), * p<0.1(90% CI).

The number of observations taken in the table was 740. In the parameter estimates part, we have the coefficients and their standard error. The standard error is an estimate of the standard deviation of the coefficient, the amount it varies across cases. It measures the precision with which the coefficient is measured. If a coefficient is large compared to its standard error, then it is probable that the variable is different from 0, meaning it is significant. In the table the asterisks indicate the significance levels.

The probit results suggest that lagged values of manufacturing exports as a proportion of GDP, the Political Democracy Index, Population and the Share of Investment are all positively and significantly related to EPZ implementation. Income per Worker and PPP are also found to be significantly related to EPZ, but with negative coefficients.

Table 4.6 Marginal effects on probit-performance (x/GDP) of predictors five years prior to implementation of EPZ

Marginal effects after probit

$$y = \text{Pr}(\text{EPZ}_t) (\text{predict})$$

$$= .437$$

Variable	dy/dx	Std. Err.	Z	P>z	[95% C.I.]	X
manufa~g	.120	.018	6.55	0.000	.084 .156	1.098
politi~s	.022	.003	6.69	0.000	.0155 .0284	.066
popula~g	6.49e-06	.000	7.48	0.000	4.8e-06 8.2e-06	17419
Invest~s	.005	.003	1.93	0.054	-.000 .010	16.834
Income~s	-.944	.119	-7.93	0.000	-1.178 -.711	.327
PPPlag~s	-.001	.000	-4.16	0.000	-.002 -.001	30.800

The marginal effects show that a one-unit increase in the manufacturing exports as a proportion of GDP increases the probability of EPZ being implemented within the next five years by 0.12. Similarly, a one-unit increase in Income decreases the probability of EPZ being implemented within the next five years by 0.944. In this case, also, it is noted the manufacturing exports as a proportion of GDP, the Political Stability Index, Population and the Share of Investment are all positively related to EPZ implementation. Income per Worker and PPP are found to be negatively related to EPZ. However, the probabilities for

Manufacturing Exports, Political Stability Index and PPP are more significant in marginal terms.

The above analysis shows that countries that were exporting already, where political democratic systems were in place, with low wages and competitive PPP were more likely to implement an EPZ within the next five years than other countries.

To confirm the results, a step further was taken by looking first of all at only those countries in the sample of 38 countries that did not have an EPZ in 1970, using EPZ (t). Having identified those countries, their status in 1975 was checked using EPZ (t+5). The LHS dependent variable will be EPZ (t+5) for those countries not having EPZ in 1970 and the RHS will contain EPZ (t) for those countries not having EPZ in 1970, together with the control variables Income per Worker compared to the US, Political Democracy Index, the Ratio of Manufacturing Exports to GDP (X/GDP %), Population (thousands), PPP and Investment Share of Real GDP per capita as predictors. In 1970 there were 29 countries with no EPZ out of the 38. The same was followed for 1975, when there were 24 countries with no EPZ. No results were obtained from 1980, 1985 and 1990, because the sample of countries became too low. The results are indicated in Table 4.7.

Table 4.7 Performance (x/GDP) of countries without EPZ in 1970 and 1975

Countries with no EPZ	1970		1975	
Variable	EPZ (t+5)		EPZ (t+5)	
	Estimate	SE	Estimate	SE
Manufacturing_exp	0.370***	0.140	0.184	0.428
Political_dem_lag2yrs	-0.014	0.020	-0.168***	0.055
Population_2yrslag	-6.25e-06	6.57e-06	-3.71e-06	1.11e-05
Investment_Share	-0.010	0.017	-0.003	0.026
Incomeperwrker_lagged2yrs	-2.712	1.688	-8.530**	3.363
PPP	0.003	0.003	0.442***	0.142
Constant	0.973*	0.564	0.461	1.114
Observations	174		80	

The probit results suggest that countries with higher levels of manufacturing exports (but this was only for 1970), Political Democracy, Competitive Incomes and PPP are more

likely to implement an EPZ. This indicates that, at least for these dimensions of economic success, it was the more successful countries which implemented EPZs.

The marginal effects for countries with no EPZ for 1970 give the following results:

Marginal effects after probit

$$y = \text{Pr}(\text{EPZ}_t) (\text{predict})$$

$$= .230$$

Table 4.8 Marginal effects on probit-performance (x/GDP) of countries without EPZ in 1970

Variable	dy/dx	Std. Err.	Z	P>z	[95% C.I.]	X
manufa~p	.0565	.0183	3.09	0.002	.0207 .0924	1.050
politi~s	.012	.003	4.13	0.000	.0065 .0182	.192
popula~g	5.71e-06	.000	7.39	0.000	4.2e-06 7.2e-06	19889.5
Invest~e	.006	.002	2.71	0.007	.0016 .010	21.385
Income~s	-1.188	.126	-9.41	0.000	-1.435 -.940	.309
PPP	-.002	.000	-5.81	0.000	-.003 -.001	35.196

The marginal effects show that a one-unit increase in the Manufacturing Exports, Political Index, Income and PPP affects significantly the probability of EPZ being implemented.

The marginal effects for countries with no EPZ for 1975 give the following results:

Marginal effects after probit

$$y = \text{Pr}(\text{EPZ_fiveyrsafter}) (\text{predict})$$

$$= .850$$

Table 4.9 Marginal effects on probit-performance (x/GDP) of countries without EPZ in 1975

variable	dy/dx	Std. Err.	Z	P>z	[95% C.I.]	X
politi~s	-.040	.013	-3.12	0.002	-.064 -.015	-.6
popula~g	-8.68e-07	.000	-0.34	0.731	-5.8e-06 4.1e-06	24936.7
Invest~e	-.001	.006	-0.11	0.915	-.013 .011	20.470
Income~s	-1.994	1.042	-1.91	0.056	-4.036 .049	.200
PPP	.103	.022	4.68	0.000	.060 .147	4.873
manufa~p	.043	.098	0.44	0.660	-.149 .236	.950

After doing the same with the other success measure – namely, growth rates – results similar to the above were obtained, with Income, Political Democracy and PPP significant.

4.6.1 OLS

An OLS estimator is used to estimate the relationship between EPZ and the measures of economic success, while at the same time controlling for other variables. The specification runs as follows: Success (Y) =f(controls, EPZ).

Table 4.10 Performance of 80 countries using OLS (x/GDP)

	DF	Estimate	SE
EPZ (t-10)	30	0.0673	(0.148)
EPZ (t-5)	30	-0.101	(0.186)
EPZ (t)	30	0.0134	(0.237)
EPZ (t+2)	30	-0.0656	(0.261)
EPZ (t+5)	30	0.181	(0.207)
EPZ (t+10)	30	0.463***	(0.152)
Initial x/GDP % (growth rates)	30	1.695***	0.0541
Year Dummies (1970-90)	30	Yes	
Africa Dummy	30	Yes	

+GRULAC Dummy	30	Yes	
Asia Dummy	30	Yes	
Constant	30	1.080***	(0.181)
Observations	30	1539	
R-Squared	30	0.519	

+ GRULAC – Caribbean and Latin American countries

Dependent variable: Ratio of Manufacturing/GDP(%); (standard errors are in parentheses).

Indicates significance at different % levels: *** p<0.01(99% CI), ** p<0.05 (95% CI), * p<0.1(90% CI). The results of the various OLS estimates will show whether the coefficients of the independent variables are really different from zero, which would mean that the independent variables are having a real effect on the dependent variable (measures of success). With coefficients large compared to Standard Errors, the independent variable is probably different from zero.

DF stands for degrees of freedom

For the large sample of 80 countries, the results show EPZ (t+10) as the only significant variable (at 99% CI (Confidence Interval)) of the success measure x/GDP. EPZ (t+10) coefficient of 0.463 indicates that ten years after its introduction, the EPZ is seen as having a positive association with x/GDP, which is expected to increase by 46.3 percentage points from EPZ (t+10) alone.

Table 4.11 Performance of 80 countries using OLS (Growth rates)

	DF	Estimate	SE
EPZ (t-10)	30	-1.161*	0.652
EPZ (t-5)	30	1.106	0.827
EPZ (t)	30	0.520	1.083
EPZ (t+2)	30	0.453	1.196
EPZ (t+5)	30	0.419	0.943
EPZ (t+10)	30	-0.795	0.692
Initial x/GDP % (growth rates)	30	0.308	0.251
Year Dummies (1970-90)	30	Yes	
Africa Dummy	30	Yes	
+GRULAC Dummy	30	Yes	
Asia Dummy	30	Yes	
Constant	30	4.509***	(0.872)
Observations	30	1567	
R-Squared	30	0.110	

Using the other success measure, the reported results do not show any significant explanatory variable to explain growth at 99% CI.

This analysis on a broader set of countries seems to indicate little relationship between EPZs and exports or economic growth. However, it does not allow us to control for other factors such as ln Income per Worker, Political Democracy Index, Lomé, Total Factor Productivity, Transport Costs and Population. The second part analyses the effect of EPZ on the smaller sample of 38 countries when we control for all the important variables listed above. Year Dummies and Region Dummies are also included while running these regressions.

Table 4.12 OLS for 38 countries using x/GDP success measure

	DF	Estimate	SE
EPZ (t)	33	-0.031	0.236
EPZ (t+2)	33	0.029	0.254
EPZ (t-5)	33	-0.280	0.196
EPZ (t-10)	33	0.056	0.162
EPZ (t+5)	33	0.336*	0.199
EPZ (t+10)	33	0.411***	0.143
Africa Dummy	33	Yes	
GRULAC Dummy	33	Yes	
Asia Dummy	33	Yes	
Initial TFP	33	0.287	0.316
Initial x/GDP(%)	33	1.493***	0.063
Transport Cost Dummy	33	0.026	0.204
Constant	33	0.426	0.295
Observations	33	798	
R-squared	33	0.645	

+ GRULAC – Caribbean and Latin American countries referred to as Latin America

Dependent variable: Ratio of Manufacturing/GDP(%); (standard errors are in parentheses)

* Indicates significance at different % levels: *** p<0.01(99% CI), ** p<0.05 (95% CI), * p<0.1(90% CI)

Results in Table 4.12 show that EPZ (t+10) is again significant, while EPZ (t+5) is marginally significant, indicating that EPZ starts showing an association with x/GDP only five years after implementation and that association becomes stronger ten years after the EPZ has been introduced. The coefficient for EPZ (t+10) is at a high of 0.411.

If we compare ln Income per Worker to US (Table 4.13) it will ceteris paribus bring an estimated absolute change in Y (Ratio of Manufacturing Exports to GDP (%)) by 81.0% and is highly significant.

Table 4.13 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
Africa Dummy	27	Yes	
GRULAC Dummy	27	Yes	
Asia Dummy	27	Yes	
Initial TFP	27	-2.424***	0.421
Initial x/GDP(%)	27	1.376***	0.063
ln Income per Worker (t-2)	27	0.810***	0.093
Transport Cost Dummy	27	-0.314	0.201
Constant	27	3.238***	0.408
Observations	27	798	
R-squared	27	0.660	

Taking both EPZ and ln Income per Worker, the results in Table 4.14 are obtained. It is noted that EPZ (t+5), EPZ (t+10) and ln Income per Worker are still significant but the effect of EPZ on x/GDP drops, meaning that Income per Worker does have an effect on success.

Table 4.14 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
EPZ (t)	33	-0.100	0.226
EPZ (t+2)	33	-0.002	0.243
EPZ (t-5)	33	-0.134	0.189
EPZ (t-10)	33	0.229	0.156
EPZ (t+5)	33	0.323*	0.191
EPZ (t+10)	33	0.277**	0.138
Africa Dummy	33	Yes	
GRULAC Dummy	33	Yes	
Asia Dummy	33	Yes	
Initial TFP	33	-2.208***	0.428
Initial x/GDP(%)	33	1.319***	0.064
ln Income per Worker (t-2)	33	0.798***	0.100
Transport Cost Dummy	33	-0.517**	0.206
Constant	33	3.405***	0.417
Observations	33	798	

R-squared	33	0.674	
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Interpretation of the results in tables 4.15 and 4.16 indicates that the Political Democracy Coefficient is significant but negative, showing an inverse relationship between success and political democracy. This goes against the prediction in Chapter 2 where inclusive institutions were highlighted, of which the Political Democracy Index was as an important component, as directly related to success.

Table 4.15 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
Africa Dummy	27	Yes	
GRULAC Dummy	27	Yes	
Asia Dummy	27	Yes	
Initial TFP	27	0.054	0.263
Initial x/GDP(%)	27	1.279***	0.057
Transport Cost Dummy	27	0.008	0.164
Political Democracy Index (t-2)	27	-0.012**	0.006
Constant	27	1.395***	0.246
Observations	27	756	
R-squared	27	0.608	

Table 4.16 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
EPZ (t)	33	-0.076	0.189
EPZ (t+2)	33	0.010	0.203
EPZ (t-5)	33	-0.180	0.157
EPZ (t-10)	33	0.158	0.133
EPZ (t+5)	33	0.316**	0.160
EPZ (t+10)	33	0.353***	0.117
Africa Dummy	33	Yes	
GRULAC Dummy	33	Yes	
Asia Dummy	33	Yes	
Initial TFP	33	0.299	0.258
Initial x/GDP(%)	33	1.252***	0.056
Transport Cost Dummy	33	-0.186	0.167
Political Democracy Index (t-2)	33	-0.0135**	0.006
Constant	33	0.731***	0.241
Observations	33	756	
R-squared	33	0.634	

The results in tables 4.17 and 4.18 show that the coefficient for Lomé is negative. This result is acceptable because the Lomé Convention was meant as a support measure for those developing countries and LDCs that were in difficult economic situations with a lower probability of high manufacturing exports growth as compared to developed countries. Thus, when Lomé became operational, only those countries that were doing well on the other control variables experienced a significant increase in their manufacturing exports.

Table 4.17 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
Africa Dummy	27	Yes	
GRULAC Dummy	27	Yes	
Asia Dummy	27	Yes	
Initial TFP	27	0.088	0.320
Initial x/GDP(%)	27	1.534***	0.063
Transport Cost Dummy	27	0.209	0.199
Lomé	27	-0.302**	0.131
Constant	27	-0.217	0.297
Observations	27	798	
R-squared	27	0.629	

Table 4.18: OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
EPZ (t)	33	-0.043	0.236
EPZ (t+2)		0.023	0.254
EPZ (t-5)		-0.275	0.196
EPZ (t-10)		0.072	0.162
EPZ (t+5)		0.318	0.200
EPZ (t+10)		0.412***	0.143
Africa Dummy		Yes	
GRULAC Dummy		Yes	
Asia dummy		Yes	
Initial TFP		0.277	0.316
Initial x/GDP(%)		1.485***	0.063
Transport Cost Dummy		0.025	0.204
Lomé		-0.140	0.133
Constant		0.417	0.295
Observations		798	
R-squared		0.646	

As observed from tables 4.19 and 4.20, Total Factor Productivity is significant.

Table 4.19 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
Africa Dummy	27	Yes	
GRULAC Dummy	27	Yes	
Asia Dummy	27	Yes	
Initial TFP	27	-5.925***	0.534
Initial x/GDP(%)	27	1.333***	0.059
Transport Cost Dummy	27	-0.223	0.183
TFP	27	6.776***	0.505
Constant	27	-0.340	0.269
Observations	27	798	
R-squared	27	0.697	

Table 4.20 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
EPZ (t)	33	-0.027	0.213
EPZ (t+2)	33	0.004	0.229
EPZ (t-5)	33	-0.079	0.178
EPZ (t-10)	33	0.166	0.146
EPZ (t+5)	33	0.351*	0.180
EPZ (t+10)	33	0.150	0.131
Africa Dummy	33	Yes	
GRULAC Dummy	33	Yes	
Asia Dummy	33	Yes	
Initial TFP	33	-5.718***	0.539
Initial x/GDP(%)	33	1.277***	0.059
Transport Cost Dummy	33	-0.453**	0.188
TFP	33	6.748***	0.514
Constant	33	0.055	0.268
Observations	33	798	
R-squared	33	0.711	

The results in tables 4.21 and 4.22 show that the coefficients for population are negative and significant.

Table 4.21 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
Africa Dummy	27	Yes	

GRULAC Dummy	27	Yes	
Asia Dummy	27	Yes	
Initial TFP	27	-0.059	0.324
Initial x/GDP(%)	27	1.504***	0.065
Population (000)	27	-4.11e-06***	1.48e-06
Transport Cost Dummy	27	0.245	0.198
Constant	27	-0.034	0.304
Observations	27	798	
R-squared	27	0.630	

Table 4.22 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
EPZ (t)	33	-0.013	0.235
EPZ (t+2)	33	0.042	0.252
EPZ (t-5)	33	-0.270	0.195
EPZ (t-10)	33	0.027	0.161
EPZ (t+5)	33	0.356*	0.198
EPZ (t+10)	33	0.388***	0.143
Africa Dummy	33	Yes	
GRULAC Dummy	33	Yes	
Asia Dummy	33	Yes	
Initial TFP	33	0.131	0.318
Initial x/GDP(%)	33	1.432***	0.065
Population (000)	33	-4.59e-06***	1.46e-06
Transport Cost Dummy	33	0.018	0.202
Constant	33	1.101***	0.302
Observations	33	798	
R-squared	33	0.650	

When the explanatory variable and control variables are regarded together (Table 4.23) to explain Y, it is found that EPZ (t+5) and (t+10) are still significant, with a coefficient of 0.316 and 0.204 respectively. As far as ln Income per Worker is concerned, the coefficient is not significant. However, TFP which also includes a component of income of workers proves to be highly significant. Population is also seen to be significant with a negative coefficient.

Table 4.23 OLS for 38 countries using x/GDP success measure (cont.)

	DF	Estimate	SE
EPZ (t)	37	-0.064	0.178
EPZ (t+2)	37	-0.024	0.191

EPZ (t-5)	37	-0.065	0.148
EPZ (t-10)	37	0.223*	0.126
EPZ (t+5)	37	0.316**	0.150
EPZ (t+10)	37	0.204*	0.110
Africa Dummy	37	Yes	
GRULAC Dummy	37	Yes	
Asia Dummy	37	Yes	
Initial TFP	37	-3.579***	0.517
Initial x/GDP(%)	37	1.091***	0.056
Ln Income per Worker (t-2)	37	0.102	0.130
Population (000)	37	-6.25e-06***	1.25e-06
Transport Cost Dummy	37	-0.378**	0.167
Political Democracy Index (t-2)	37	-0.0270***	0.006
Lomé	37	-0.131	0.109
TFP	37	3.820***	0.793
Constant	37	0.852*	0.509
Observations	37	756	
R-squared	37	0.680	

It can therefore be seen that EPZ (t+5) and (t+10) were associated with success in terms of x/GDP, but success was also seen to depend quite significantly on Ln Income per Worker, TFP and Size of the Population. And furthermore, from the above data it can also be noted that when the Political Stability Index is added to the equation, it has no effect on the EPZ coefficients. All the above empirical results suggest that EPZ is associated with success of countries measured in terms of the Ratio of Manufacturing Exports to the GDP. But from the various control factors that could have also been associated with success, Income per Worker, Population and TFP may also have been major determining factors.

The same are now performed with the other success measures – namely, the growth rates of real GDP chain per capita (data obtained from World Penn Tables). See Annexure 4.

The result for the other success measure indicates that Ln Income per Worker and TFP were associated with this measure of success, but that the EPZ was not (in contrast to the broader sample of 80 countries).

4.6.2 Controlling for selection into sample

To control for selection of countries into our sample, to see whether the results obtained with the 80 countries are different than those for the restricted sample of 38 countries, the

OLS results coefficients for the different EPZ leads/lags for the 80 countries are compared to those of the 38 countries without the control variables, as shown in tables 4.24 - 4.27 for both success measures.

Table 4.24 Controlling for selection into sample: (x/GDP) success measure for 80 countries

	Estimate	SE
EPZ (t-10)	0.0673	0.148
EPZ (t-5)	-0.101	0.186
EPZ (t)	0.013	0.237
EPZ (t+2)	-0.066	0.261
EPZ (t+5)	0.181	0.207
EPZ (t+10)	0.463***	0.152
Year Dummies	Yes	
Africa Dummy	Yes	
GRULAC Dummy	Yes	
Asia Dummy	Yes	
Observations	1,539	
R-squared	0.519	

Table 4.25 Controlling for selection into sample: (x/GDP) success measure for 38 countries

	Estimate	SE
EPZ (t-10)	0.168	0.131
EPZ (t-5)	-0.196	0.155
EPZ (t)	-0.086	0.189
EPZ (t+2)	0.010	0.203
EPZ (t+5)	0.309*	0.159
EPZ (t+10)	0.350***	0.116
Year Dummies	Yes	
Africa Dummy	Yes	
GRULAC Dummy	Yes	
Asia Dummy	Yes	
Observations	756	
R-squared	0.633	

Table 4.26 Controlling for selection into sample: (Growth rates) success measure for 80 countries

	Estimate	SE
EPZ (t-10)	-1.161*	0.652
EPZ (t-5)	1.106	0.827
EPZ (t)	0.520	1.083
EPZ (t+2)	0.453	1.196
EPZ (t+5)	0.419	0.943
EPZ (t+10)	-0.795	0.692
Year Dummies	Yes	
Africa Dummy	Yes	
GRULAC Dummy	Yes	
Asia dummy	Yes	
Observations	1,567	
R-squared	0.110	

Table 4.27 Controlling for selection into sample: (Growth rates) success measure for 38 countries

	Estimate	SE
EPZ (t-10)	-1.362	0.839
EPZ (t-5)	1.029	1.015
EPZ (t)	1.300	1.234
EPZ (t+2)	0.0128	1.328
EPZ (t+5)	0.772	1.042
EPZ (t+10)	-0.685	0.750
Year Dummies	Yes	
Africa dummy	Yes	
GRULAC dummy	Yes	
Asia dummy	Yes	
Observations	798	
R-squared	0.162	

EPZ (t+10) is significant for both 80 countries and 38 countries using the success measure x/GDP , while there do not seem to be any significant EPZs for either 80 or 38 countries for the alternative measure of success, showing that the coefficients are not very different between the broad sample of 80 countries and the sample of 38. This leads to the conclusion that there may not have been a selection bias in choosing the 38 from the 80 countries.

4.6.3 EPZ endogeneity issue

As shown in the OLS estimates above, the probability of EPZ (especially EPZ (t+10)) affecting x/GDP seems to be significant, with a very high coefficient. However, the probit results indicate that EPZ may be endogenous and thus related to factors such as Predisposition to Exports, Political Democracy, Income per Worker and PPP. Even though we treated EPZ (t+10) as an independent variable in equation (1), we now know that it may be a function of other factors and its coefficients may be biased.

In this section, a second equation for EPZ as the dependent variable is therefore set up:

$$EPZ(t+10) = f(\text{exogenous factors}, \mu) \text{-----} (2)$$

EPZ (t+10) will be a function of a set of exogenous factors and the exogenous factors in equations (1) and (2) are likely to overlap, as it is known that numerous factors in equation (1) such as Income per Worker, TFP and to a lesser extent Political Stability Index are clearly associated with both success and EPZ. As mentioned by Timpone (n.d.), the endogenous factors, in this case Success and EPZ, are related within the larger system.

To address the issue of EPZ endogeneity, an extension of the linear regression model (OLS) to a two-stage least squares (2SLS) is used.

A two-stage least squares (2SLS) estimator is used with ln Income per Worker, Political Democracy, Lomé, TFP, PPP as the usual instruments and a new instrument (for instance, Sino Population (people of Chinese origin) of at least 1% of the total population, which was randomly chosen, which is likely to affect EPZ but not success). The instrument Sino Population would be a dummy variable, 1 for Sino population >1% of total population and 0 for <1%. EPZ (t+10) is instrumented. Instrumental variables provide additional information which allows us to obtain consistent estimates of the parameters of interests. The instrumental variables are variables that are uncorrelated with the error term and are used to provide information in place of the endogenous variables on the right-hand side of the equation (Timpone, n.d.).

The specifications are as follows:

$$\text{Success} = f\{\text{EPZ}(t+10), \text{control variables (Political Democracy Index, Lomé, ln Income per Worker, TFP)} + \epsilon_1 \dots\dots\dots (A)$$

$$EPZ(t+10) = f\{\ln \text{Income per Worker, TFP, PPP, Sino}\} + \epsilon_2 \dots \dots (B)$$

We check endogeneity using p-values.

The OLS estimation in equation(B) will lead to biased and inconsistent results if Expected value $E(\epsilon_1, \epsilon_2) \neq 0$, i.e. if there is overlap in the set of unobserved variables (Z) that affect outcomes.

Our null and alternate hypothesis may be specified as follows:

H_0 : variables are exogenous ($Z' \epsilon = 0$) z is the unobserved variable

H_A : variables are endogenous ($Z' \epsilon \neq 0$)

It will be attempted to get around the endogeneity issue by performing the 2SLS for the lag/lead values for the dependent variable, i.e. the success measures. So in this case, if EPZ (t+10) is used, x/GDP (t+10) will also be used. Similarly, when using EPZ (t+5), x/GDP (t+5) etc. will be used to compare coefficients' values with and without the dependent variable being lagged.

The first stage uses x/GDP, EPZ (t+10) and the usual control variables – namely, ln Income per Worker, Political Democracy Index, Lomé, TFP and PPP. The second step uses the same variable, but with the addition of Sino Population of >1% of total population for each country. The reason for the addition of Sino Population is that in the success stories of many EPZ countries, especially in Africa, it seems that most of the initial investments and the groundwork were done by the Chinese population of these countries that had diaspora links with China. The instrument Sino Population may thus have an effect on EPZ, but not on the success measures x/GDP and growth.

Table 4.28 2SLS to test for endogeneity

. ivregress 2sls ratio_manufacturingexp_GDP ln_income political_stability_index Lome TFP (EPZ_tenyrsafter=ln_income political_stability_index PPP sino_countr > ies)						
Instrumental variables (2SLS) regression			Number of obs = 756 Wald chi2(5) = 53.08 Prob > chi2 = 0.0000 R-squared = . Root MSE = 2.1045			
ratio_manu~P	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
EPZ_tenyr~er	4.797787	1.393573	3.44	0.001	2.066434	7.529141
ln_income	-.3442027	.5754136	-0.60	0.550	-1.471993	.7835872
political_~x	-.017715	.015987	-1.11	0.268	-.0490489	.0136189
Lome	-.1249482	.2411189	-0.52	0.604	-.5975324	.3476361
TFP	2.445975	2.435536	1.00	0.315	-2.327588	7.219538
_cons	-1.603764	2.267057	-0.71	0.479	-6.047115	2.839586
Instrumented:	EPZ_tenyrsafter					
Instruments:	ln_income political_stability_index Lome TFP PPP sino_countries					

```
. ivregress 2sls ratio_manufacturingexp_GDP ln_income political_stability_index Lome TFP (EPZ_tenyrsafter=ln_income political_stability_index PPP sino_countr
> ies), robust
```

```
Instrumental variables (2SLS) regression          Number of obs =    756
                                                Wald chi2(5)  =   138.09
                                                Prob > chi2   =   0.0000
                                                R-squared    =    .
                                                Root MSE    =   2.1045
```

ratio_manu~P	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
EPZ_tenyrs~er	4.797787	1.189948	4.03	0.000	2.465532	7.130042
ln_income	-.3442027	.4762961	-0.72	0.470	-1.277726	.5893205
political_~x	-.017715	.0144362	-1.23	0.220	-.0460095	.0105794
Lome	-.1249482	.2086068	-0.60	0.549	-.53381	.2839137
TFP	2.445975	2.037545	1.20	0.230	-1.54754	6.43949
_cons	-1.603764	1.929094	-0.83	0.406	-5.384719	2.177191

```
Instrumented: EPZ_tenyrsafter
Instruments: ln_income political_stability_index Lome TFP PPP
              sino_countries
```

```
. estat endogenous
```

Tests of endogeneity
Ho: variables are exogenous

```
Robust score chi2(1)      = 15.5353 (p = 0.0001)
Robust regression F(1,749) = 31.3995 (p = 0.0000)
```

The null and alternate hypothesis may be specified as follows:

H_0 : variables are exogenous ($Z' \epsilon = 0$) z is the unobserved variable

H_A : variables are endogenous ($Z' \epsilon \neq 0$)

The EPZ coefficients are very significant with a higher value in comparison to their OLS values, and in all cases very low p-values are found. With this result, the null hypothesis can be rejected and it can be confirmed that the EPZ is endogenous and its coefficient biased.

To address the endogeneity issue, the ideal way to proceed would have been the use of the Generalised Methods of Moments (GMM) with the use of xtabond, which would consider the bias caused by the endogenous explanatory variable. With xtabond, one would lag on RHS, the dependent variable on x/GDP for two past periods – namely, five years and ten years and EPZ on LHS. However, data on x for the period prior to 1968-1970 are not available, and to perform the lagging, data on x would have been needed for a time period

as far back as 1960. Most of the countries in the sample do not have disaggregated data going back as far as that.

4.7 Did EPZs have an impact on economic success?

To analyse whether there is a real difference in our success measures with and without an EPZ, all 80 countries are taken and divided into two groups, the first 40 are those countries that had an average value greater than or equal to 0.85% for x/GDP measure of success, and the second group for those countries with an average value x/GDP less than 0.85%. A similar exercise is carried out for the alternative measure of success (growth rates of real GDP) with the first group consisting of those countries that had an average growth rate of 2.18% or higher. The results are shown in the table in Annexure 5.

The results for both success measures indicate that 17 out of 33 countries that had an EPZ were in the first group of successful countries, while the remaining 16 were in the second group of less successful countries for both success measures. This raises serious questions about whether EPZs had any real impact on the economic success achieved by individual countries.

4.8 Incentives offered by EPZs

From the OLS results, there were some indications that countries do better five to ten years after EPZ implementation. One explanation for this could be that EPZs are not homogeneous, but differ across a number of dimensions. For instance, there may be differences in the incentives offered by the various EPZs, making some EPZs more attractive than others. One should also consider the types of EPZ zones and see whether one type was yielding better results than another.

Looking at the major incentives offered by EPZs in different countries, it is noted that successful and non-successful EPZs countries offered nearly similar fiscal, physical and administrative incentives, such as tax holidays, duty-free imports and exports, no restrictions on repatriation of profits and one-stop shop facilities. Table 4.29 gives a comparative profile of some EPZs and the incentives that they offered prior to 1990 (except Trinidad and Tobago, which started their EPZ in 1990). It is notable from the last row of

the table that countries that provided more of these facilities were not necessarily more successful in terms of our measure of success, i.e. ratio of x/GDP. The incentives appear to act more as a facilitator to the establishment and smooth running of the EPZs rather than be causal in the EPZ's success.

Table 4.29 Incentives offered for EPZs

Country / Incentives	Malaysia	Korea	Philippines	Sri Lanka	Jamaica	Trinidad and Tobago	Dominican Republic	Mauritius
Tax Exemption	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No (15% corporate tax)
Tax holiday	8-10 years	5 years	4-6 years	5-15 years	Indefinite	-----	15-20 years	20 years
Duty-free on imports: equipment, machinery, parts/spare parts, raw materials	Yes to all	Yes to all	Yes to all	Yes to all except machinery	Yes to all except machinery	Yes to all except machinery	Yes to all except machinery	Yes to all
Duty-free exports	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Unrestricted repatriation of profits	--	--	Yes	--	Yes	--	--	Yes
Reducing red tape: simple procedure or one-stop shop	Yes	Yes	Yes	--	Yes	--	--	Yes
Average x/GDP % (for years 1985-90)	3.11	3.54	1.05	1.57	0.22	1.7	2.08	1.8

Source: Kusago (2008)

Although countries differed slightly on their tax holiday period, it is noted that all countries that had EPZs were invariably providing duty-free facilities on both imports and exports, and bureaucratic red tape was being reduced.

4.9 Types of EPZs

The World Economic Processing Zones Association (WEPZA) divides EPZ in four categories, as indicated in Table 4.30.

Table 4.30 Types of EPZ

Zone type	Definition
Wide Area (WA)	These are large zones with a resident population, such as the Chinese Special Economic Zones or new cities.
Small Area (SA)	Zones that are generally smaller than 1000 ha and are normally surrounded by a fence. Investors must locate within the zone to receive benefits. There is no resident population, although they may contain worker dormitories.
Industry Specific (IS)	Zones that are created to support the needs of a specific industry, such as banking, jewellery, oil and gas, electronics, textiles, tourism, etc. Companies invested in the zone may be located anywhere and receive benefits. Examples include India's Jewellery Zones, or many offshore banking zones.
Performance Specific (PS)	Zones that admit only investors who meet certain performance criteria such as degree of exports, level of technology, size of investment, etc. Companies can be located anywhere. Examples include India's export-oriented factories, the Mexico Maquila programme, or a research park.

Source: WEPZA website: <http://www.wepza.org/>

From the list of 38 countries included in the study, 21 had EPZs. The types of EPZ for each country are indicated in Table 4.31.

Table 4.31 Types of EPZ compared by success measure

Country	WA	SA	IS	PS	Average x/GDP 1985-90	Average Growth rates (%)
Colombia		*			0.64	1.71

Costa Rica		*			1.27	0.51
Dominican Republic		*	*		2.09	--0.09
Egypt		*			1.78	1.74
El Salvador		*			0.89	0.17
Fiji		*			1.03	2.78
Guatemala		*			0.48	-0.94
Honduras		*			0.48	-0.94
Hong Kong	*	*	*		0.74	0.09
Indonesia		*			2.73	4.36
Ireland		*			2.15	3.70
Israel		*			5.68	2.13
Malaysia		*			3.11	3.2
Mauritius		*		*	1.59	0.9
Mexico		*		*	0.54	-0.17
Nicaragua		*			0.33	-6.78
Philippines	*	*			1.04	0.23
Republic of Korea		*	*		3.54	8.09
Sri Lanka	*	*			1.56	2.16
Togo		*			0.77	1.14
Trinidad and Tobago		*	*		1.69	-1.77

Here also, the averages of the success measures do not give any clear indication that a category or type of EPZ was more successful than the other, except for the fact that Hong Kong, which had in operation three out of the four types of zones – namely, WA, SA and IS – seemed to perform better than the rest in terms of both success measures.

4.10 Limitations of the approach

Two critical aspects need to be highlighted before concluding the discussion. A two-year lag has been assumed throughout the chapter between the establishment of an EPZ and its fully operational capacity in line with previous studies on EPZs, namely the one by Tyler (2009). It now appears that this time period is too short and not consistent with the Mauritian case. The fact is that, as has been noted in chapters 2 and 3, the EPZ in Mauritius took thirteen years to take off after its establishment in 1970. Assuming that full operational capacity and take-off are two different stages, two years are definitely very short. The possible implications of this underestimated time for take-off may lead to different

interpretation of results. For instance, if a country's economy is in a bad situation and an EPZ is established and if the EPZ is successful only after thirteen years, as was the case for Mauritius, using the two-year lag would lead to the misleading conclusion that the EPZ after two years of establishment did not have any impact.

The second issue is the pooled data used for the regressions. Pooled data do not account for the evolutionary process whereby, for example, having an EPZ in a given country in 1980 is not the same as having the same EPZ ten years later, which could have a substantial impact on the economy in 1990. An EPZ is set to evolve and may develop some self-augmenting forces over time and pooling data do not account for this. Thus, in reality, an EPZ in year x after establishment and year $x+10$ after establishment are thus two different variables providing different results. This is in essence the problem that a researcher may face and is unaccounted within pooled data sets.

4.11 Conclusion

This chapter has demonstrated that from a general perspective countries that have adopted an EPZ seem to be more successful than those without EPZs. The empirical analysis undertaken here has sought to shed light on the direction of this association: is it the adoption of EPZs that lead to success, or does economic success lead to the adoption of EPZs? First of all, the probit results indicated that those countries that would adopt an EPZ within the next five years were already performing well in terms of Ratio of Manufacturing Exports and Political Democracy, and they were competitive in terms of Income per Worker and PPP. Although the OLS revealed a strong association between EPZ ($t+10$) and success, there were also indications that $\ln$ Income per Worker and Productivity were associated with success as well. The 2SLS results indicate that EPZ was itself endogenously determined by other factors, which would bias upwards its influence on success. Finally, comparing the average values of both success measures for all 80 countries showed that implementing an EPZ appears to have made little difference to comparative success.

All these results were first derived from a dataset of 80 countries, but this was eventually reduced to 38 countries to analyse the control variables. The empirical results confirm that

there is no general association between EPZ and success. This should, however, not stop one from thinking about possible scenarios regarding the effect of EPZ on success. The first scenario, which was confirmed by the probit results, is that those countries that were successful and had an EPZ would have experienced some success anyway with or without an EPZ. The second is the possibility that EPZs were adopted by countries that were already set up for success, but EPZs nevertheless contributed in some way to the scale of success. Though our empirical results do not show an association between EPZ implementation and success, the question remains whether Mauritius would have been as successful as it has been if it had not adopted the EPZ.

The fact is that the previous chapters have shown that there is a clear association between certain factors and the creation of an EPZ. For instance, as demonstrated in Chapter 2, we now know that the successful creation of an EPZ in Mauritius occurred because of the positive environment created by the inclusive institutions in Mauritius and other traditional political economic factors. The existence of these factors, together with the low wages and/or timely application of the preferences framework, fuelled the exceptional take-off of the EPZ in Mauritius during the early 1980s, which led to the economic success of Mauritius, confirmed by the fact that Mauritius was at that time the only country in Africa which implemented an EPZ with success. However, this chapter has not been able to provide us with evidence with regard to the association between a successful EPZ and a successful economy. A very interesting question now is to ask what happened to the Mauritian EPZ once the preferences were removed during the early years of the new millennium, and how the removal of the preferences affected the different industries in the manufacturing sector in Mauritius. This will be the focus of the next chapter.

ANNEXURE 1

80 countries including developed and developing countries

Canada, Dominican Republic, Egypt, El Salvador, Fiji, Hong Kong, Ireland, Israel, Republic of Korea, Malawi, Mauritius, Sri Lanka, Switzerland, Tunisia, Algeria, Argentina, Barbados, Bolivia, Cameroon, Colombia, Congo, Costa Rica, Cote d'Ivoire, Guatemala, Honduras, Iceland, Indonesia, Italy, Madagascar, Malaysia, Mexico, Nicaragua, Philippines, Singapore, Togo, Trinidad and Tobago, Turkey, Uruguay, Angola, Australia, Austria, Bahamas, Belgium-Luxembourg, Belize, Bermuda, Bangladesh, Brazil, Brunei Darussalam, Burkina Faso, Cyprus, Czech Republic (Czechoslovakia), Denmark, Ecuador, Ghana, India, Jamaica, Japan, Kenya, Kuwait, Jordan, Libya, Liberia, Mali, Morocco, Netherlands, New Zealand, Nigeria, Paraguay, Peru, Papua New Guinea, Pakistan, Samoa, St. Lucia, Senegal, Seychelles, Saudi Arabia, Sudan, Spain, Thailand, Venezuela.

ANNEXURE 2

38 countries from the sample area

Canada, Dominican Republic, Egypt, El Salvador, Fiji, Hong Kong, Ireland, Israel, Republic of Korea, Malawi, Mauritius, Sri Lanka, Switzerland, Tunisia, Algeria, Argentina, Barbados, Bolivia, Cameroon, Colombia, Congo, Costa Rica, Cote d'Ivoire, Guatemala, Honduras, Iceland, Indonesia, Italy, Madagascar, Malaysia, Mexico, Nicaragua, Philippines, Singapore, Togo, Trinidad and Tobago, Turkey and Uruguay

ANNEXURE 3

Date of Establishment of EPZs

Bangladesh	1980	Malaysia	1971
Brazil	1988	Mauritius	1970
Colombia	1964	Mexico	1965

Costa Rica	1977	Nicaragua	1976
Cyprus	1982	Pakistan	1983
Dominican Republic	1965	Philippines	1972
Egypt	1976	Republic of Korea	1970
El Salvador	1973	Senegal	1974
Fiji	1987	Spain	1950
Guatemala	1971	Sri Lanka	1977
Honduras	1972	St. Lucia	1986
Hong Kong	1960s	Togo	1989
India	1965	Trinidad and Tobago	1990
Indonesia	1973	Singapore	before 1970
Ireland	1966		
Israel	1970		
Jamaica	1976		
Jordan	1973		
Kenya	1990		
Liberia	1975		

Source: World Bank (1992) Industry and Energy Department. Industry Development Division, World Bank Country Economics Dept. Trade Policy Division.

ANNEXURE 4

OLS for 38 countries using growth rates success measure

	DF-32	(2) DF-27	(3) DF-33	(4)DF-27	(5) DF-33	(6) DF-27	(7) DF-33
EPZ (t)	1.283		1.156		1.362		1.290
	(1.236)		(1.231)		(1.250)		(1.238)
EPZ (t+2)	0.00981		-0.0464		0.0440		0.0129
	(1.329)		(1.323)		(1.346)		(1.330)
EPZ (t-5)	0.934		1.203		1.018		0.931
	(1.026)		(1.026)		(1.040)		(1.027)
EPZ (t-10)	-1.293		-0.976		-1.207		-1.303
	(0.847)		(0.851)		(0.877)		(0.852)
EPZ (t+5)	0.779		0.754		0.890		0.790
	(1.044)		(1.039)		(1.057)		(1.049)
EPZ (t+10)	-0.693		-0.940		-0.852		-0.694
	(0.751)		(0.753)		(0.771)		(0.751)
Africa Dummy	-0.588	-0.115	0.161	-0.307	0.0855	-0.725	-0.610
	(0.800)	(0.839)	(0.840)	(0.916)	(0.928)	(0.822)	(0.821)
GRULAC Dummy	-1.638**	-1.005	-1.414**	-1.190*	-1.578**	-1.323**	-1.645**
	(0.635)	(0.612)	(0.637)	(0.667)	(0.732)	(0.603)	(0.638)
Asia Dummy	1.647**	2.286***	1.748**	2.253***	1.824**	2.040**	1.641*
	(0.837)	(0.797)	(0.834)	(0.847)	(0.907)	(0.795)	(0.839)
Initial TFP	0.642	-4.052*	-3.949*	-0.0541	0.628	0.0805	0.648
	(1.656)	(2.262)	(2.328)	(1.701)	(1.709)	(1.653)	(1.658)
Initial x/GDP(%)	0.364	0.216	0.0442	0.387	0.224	0.480	0.369
	(0.328)	(0.340)	(0.346)	(0.367)	(0.368)	(0.326)	(0.330)
Ln Income per Worker (t-2)		1.333***	1.469***				
		(0.501)	(0.526)				
Population (000)							
Transport Cost Dummy	0.446	0.547	-0.554	1.069	-0.134	1.413	0.446
	(1.067)	(1.077)	(1.121)	(1.062)	(1.105)	(1.028)	(1.067)
Political Democracy Index (t-2)				0.0442	0.0506		
				(0.0363)	(0.0371)		
Lomé						-0.438	0.0814
						(0.676)	(0.699)
TFP							

Constant	2.601*	4.489**	5.087**	0.116	3.005*	2.716*	2.605*
	(1.543)	(2.187)	(2.270)	(1.593)	(1.595)	(1.534)	(1.544)
Observations	798	798	798	756	756	798	798
R-squared	0.162	0.156	0.171	0.140	0.158	0.149	0.162

+ GRULAC – Caribbean and Latin American countries referred to as Latin America

Dependent variable: Ratio of Manufacturing/GDP(%); (standard errors are in parentheses)

* Indicates significance at different % levels: *** p<0.01(99% CI), ** p<0.05 (95% CI), * p<0.1(90% CI)

OLS for 38 countries using growth rates success measure (cont.)

	(8) DF-27	(9) DF-33	(10)DF-27	(11) DF-33	(12) DF-37
EPZ (t)		1.286		1.267	1.121
		(1.234)		(1.237)	(1.250)
EPZ (t+2)		-0.0108		-0.00188	0.0202
		(1.327)		(1.330)	(1.341)
EPZ (t-5)		1.106		0.925	1.209
		(1.028)		(1.026)	(1.040)
EPZ (t-10)		-1.199		-1.269	-0.920
		(0.847)		(0.849)	(0.884)
EPZ (t+5)		0.792		0.763	0.780
		(1.042)		(1.045)	(1.057)
EPZ (t+10)		-0.916		-0.674	-0.994
		(0.758)		(0.752)	(0.776)
Africa Dummy	-0.516	-0.217	-0.709	-0.508	1.569
	(0.819)	(0.821)	(0.812)	(0.815)	(1.073)
GRULAC Dummy	-1.052*	-1.358**	-1.260**	-1.578**	-0.933
	(0.626)	(0.650)	(0.610)	(0.646)	(0.789)
Asia Dummy	2.243***	1.822**	1.942**	1.614*	1.926**
	(0.805)	(0.840)	(0.796)	(0.840)	(0.922)
Initial TFP	-4.231	-4.479	0.334	0.776	-0.664
	(3.045)	(3.120)	(1.675)	(1.677)	(3.641)
Initial x/GDP(%)	0.353	0.180	0.601*	0.416	0.0571
	(0.336)	(0.341)	(0.337)	(0.343)	(0.397)
Ln Income per Worker (t-2)					2.144**
					(0.911)
Population (000)			6.97e-06	3.94e-06	1.62e-05*
			(7.67e-06)	(7.69e-06)	(8.82e-06)
Transport Cost Dummy	1.124	0.0366	1.440	0.452	-1.331
	(1.043)	(1.086)	(1.026)	(1.067)	(1.175)

Political Democracy Index (t-2)					0.0907**
					(0.0416)
Lomé					-0.0152
					(0.768)
TFP	4.859*	5.754*			-5.890
	(2.883)	(2.973)			(5.578)
Constant	2.628*	2.284	2.404	0.244	10.62***
	(1.533)	(1.549)	(1.572)	(1.594)	(3.579)
Observations	798	798	798	798	756
R-squared	0.151	0.166	0.149	0.163	0.169

+ GRULAC – Caribbean and Latin American countries

Dependent variable: Ratio of Manufacturing/GDP(%); (standard errors are in parentheses)

* Indicates significance at different % levels: *** p<0.01(99% CI), ** p<0.05 (95% CI), * p<0.1(90% CI)

ANNEXURE 5

Country	Average x/GDP	Growth rates	EPZ
Algeria	0.11	1.52	N
Angola	0.85	-0.08	N
Argentina	0.74	-0.47	N
Australia	0.68	1.79	N
Austria	2.88	3.05	N
Bahamas	0.33	1.1	N
Bangladesh	2.06	0.4	Y
Barbados	0.51	2.66	N
Belgium-Luxembourg	7.05	2.72	N
Belize	0.36	2	N
Bermuda	0.01	1.53	N
Bolivia	3.6	-0.07	N
Brazil	0.53	2.78	Y
Brunei Darussalam	0.08	0.01	N
Burkina Faso	0.15	0.99	N
Cameroon	0.84	2.18	N
Canada	1.65	2.16	N
Colombia	0.5		

Colombia	0.5	2.2	Y
Congo	1.1	-1.68	N
Costa Rica	1.04		
Costa Rica	1.05	0.98	Y
Cote d'Ivoire	0.62		
Cote D'Ivoire	0.6	0.88	N
Cyprus	0.83	4.97	N
Czech Republic	2.2		N
Denmark	0.97	2	N
Dominican Republic	1.37	3	Y
Ecuador	0.09	2.25	N
Egypt	1.24	3.6	Y
El Salvador	0.83	-0.04	Y
Fiji	0.57	2.61	Y
Ghana	1.92	1.4	N
Guatemala	0.59	0.97	Y
Honduras	0.65	1.41	Y
Hong Kong	6.86	6.15	Y
Iceland	1.51	3.71	N
India	1.32	2.24	Y
Indonesia	1.16	5.37	Y
Ireland	1.5	2.66	Y
Israel	4	2.08	Y
Italy	1.31	2.9	N
Jamaica	0.22	0.65	Y
Japan	0.96	3.61	N
Jordan	1.28	1.09	Y
Kenya	0.92	0.31	Y
Kuwait	0.5	-4.8	N
Liberia	0.05	-4.3	Y
Libya	-4.5	-9.5	N
Madagascar	0.33	0.11	N
Malawi	0.54	0.69	N
Malaysia	3.5	5.55	Y
Mali	0.09	2.35	N
Mauritius	0.9	4.63	Y
Mexico	0.31	1.8	Y
Morocco	0.68	2.6	N
Netherlands	2.32	2.01	N
New Zealand	1.07	0.82	N
Nicaragua	0.46	-1.55	Y
Nigeria	0.08	0.3	N
Pakistan	3	3.12	Y

Papua New Guinea	0.4	2.26	N
Paraguay	0.32	3.2	N
Peru	1.4	-0.77	N
Philippines	0.68	1.47	Y
Republic of Korea	2.54	6.9	Y
Samoa	0.05	0.94	N
Saudi Arabia	0.09	2.51	N
Senegal	0.67	-0.22	Y
Seychelles	-0.13	5.33	N
Singapore	4.85	6.49	Y
Spain	0.8	2.64	Y
Sri Lanka	0.66	2.85	Y
St Lucia	1.6	3.67	Y
Sudan	0.17	-0.64	N
Switzerland	1.89	1.77	N
Thailand	1.94	5.56	N
Togo	0.81	-0.72	Y
Trinidad and Tobago	0.75	0.13	Y
Tunisia	1.01	2.48	N
Turkey	0.83	2.31	N
Uruguay	1.24	0.42	N
Venezuela	0.61	-0.14	N

17 EPZ countries had average values of $x/GDP > 0.85\%$ compared to 16 for average $x/GDP < 0.85\%$

Similar results are found for average growth rates of real GDP, but for values $>$ or $< 2.18\%$

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CHAPTER 5

THE IMPACT OF THE REMOVAL OF TRADE PREFERENCES ON THE EPZ (EOE) AND THE TEXTILE AND APPAREL SECTORS IN MAURITIUS

5.1 Introduction

One of the direct effects of the Multi-Fibre Agreement (MFA) is the development of many new textile and apparel industries in countries that might not have entered this market in a quota-free environment. Mauritius may be regarded as one of the countries that seized the opportunities offered by the MFA. The country benefited indirectly from the MFA and directly from the Lomé Convention, which gave it duty-free and quota-free access to the EU market. The MFA imposed quota restrictions on countries wishing to enter the EU. The trade preferences that Mauritius enjoyed before 2005 were of significant benefit to the textile and apparel sectors, which represented more than 85% of EPZ exports.

However, after the creation of the WTO in 1995, the MFA was gradually phased out, culminating in the complete removal of all quotas in 2005. The quota-free access that gave Mauritius an edge over low-cost producers of textile and apparel was no longer available. Mauritius was in direct competition for access to the EU market with big low-cost producers such as India and China.

A data analysis of the evolution of the Mauritian manufacturing sector and its various product groups will be carried out in this chapter for the period during and after the MFA phase-out. The chapter will analyse whether those products that were under preferences prior to 2005 experienced a sudden fall in exports after the preferences had been removed. The difference-in-difference estimation technique is used to compare the textile and apparel sectors in Mauritius with other sectors and ascertain the real effects of the removal of the preferences, which will be defined as the treatment effect.

The chapter begins by reviewing existing studies of the effects of the MFA phase-out. These generally reveal net welfare losses for countries such as Mauritius and benefits for

China and India. They also stress the shift in FDIs to low-cost producing countries such as India and China.

The chapter then moves on to an analysis of the two main performance indicators for Mauritius— namely, exports and employment for the period 2000-2010, and looks at how different products have been affected in different ways. Next, a comparison of countries' exports which had EPZs similar to Mauritius is carried out to provide a list of countries that have been or will become direct competitors to Mauritius in the more deregulated global trading environment.

The difference-in-difference estimates comparing changes in textiles and apparel sectors with other sectors are used to analyse further the impact of the preferences removal. The estimates provide an insight into the real differences between these two groups as a result of the removal of preferences. Although the results show without any doubt that removal of preferences had an impact, the negative effect on the performance indicators was less than might have been expected. This chapter therefore shows that, contrary to existing perspectives, Mauritius did not suffer major losses from the phasing out of the MFA. The chapter concludes that the Mauritius textile and apparel sector did not fare as badly as some might have expected, principally as a result of the diversification of the exports towards non-EU markets. Mauritius also moved towards niche products with a new emphasis on quality and high-end products, as proponents of endogenous growth theory would predict.

5.2 Previous studies

There are several studies available to date on the effect of the phasing out of the MFA on the developing world. Francois and Spinanger (2004) derived a methodology for measuring the level of protection faced by exporters under the pre-2005 quota system, but they do not address the implication of the removal of protection. Their study does mention, though, that the elimination of quotas with the enactment of the Agreement on Textiles and Clothing (ATC) means that the textile and clothing trade is likely to shift dramatically towards China and India. According to Francois and Spinanger (2004), the MFA had been a preference system which helped other developing countries at the expense of India and China. The low-cost character of Chinese and Indian exports would, after 2005, mean lost

market share for most of the other suppliers in the developing world who produced at a higher cost. The high-cost countries could have used the WTO special anti-surge clauses for textiles and clothing (T&C) products. General anti-surge clauses and the treatment of China as ‘a non-market economy’ in anti-dumping cases could have allowed the rest of the developing world to keep up protectionist pressure against China for the next decade, Francois and Spinanger maintained in 2004. The reality has, however, been quite different. Products from China and India have invaded the T&C markets completely since 2005.

Rivera (2004) analysed the welfare implications of full implementation of the ATC for three Sub-Saharan African (SSA) regions. The study finds that the Southern African Customs Union (SACU), other Southern African countries and the rest of SSA all benefited from AGOA preferences on clothing (which is US legislation that the US has signed with African countries, called the Africa Growth and Opportunity Act), with other Southern African countries experiencing the largest benefits. The completion of the ATC reverses these benefits and leads to small net welfare losses compared to pre-AGOA levels.

Evans and Harrigan (2004) have found that MFA quotas have generated significant wage premiums for exporting countries. These have increased the incentives to invest in these countries. This paper looks at the extent and effects of the MFA, making use of a dataset on product-level US import quotas. The findings suggest that the MFA constrained exporters in East Asian countries that had binding quotas (i.e. fill rates that are high enough to keep imports into the USA below what they would otherwise be), especially China and Hong Kong. The MFA thus substantially distorted trade as binding quotas tightly constrained many East Asian exporters, and led to substantially higher import prices in the USA. For those exporters that did not have binding quotas, which includes Mauritius, MFA quotas yielded billions of dollars in quota rents to holders of quota licenses. UNCTAD (2005) suggests that the end of the MFA would change the location of foreign direct investors and cause FDI to leave countries that previously enjoyed quota access and move to countries with lower wages or other production advantages.

The World Bank (2009) suggested that the end of the MFA could mean a decrease in both exports and FDI in countries affected by this regime change.

Wacziarg and Wallack (2004) examine the inter-sectoral employment effects for 25 liberalisation episodes in a set of developing and transition economies. At the one-digit level, trade liberalisation is found to have either no effect or a negative (but insignificant) effect on sectoral employment shares. Considering a five-year window following an episode of trade liberalisation, a typical liberalising sector will sustain a 0.65 percentage point absolute change in employment share in the two years following the liberalisation episode. By contrast, a non-liberalising sector will experience a 0.79 percentage point absolute change. That is, there is more labour movement within sectors, i.e. change in employment share of the different sectors in the non-liberalising sector than in the liberalising sector, though the difference is not statistically significant. At the three-digit level, the employment effects of trade liberalisation are more pronounced. Wacziarg and Wallack (2004) also report that a liberalisation episode five years in the past will reduce the two-year growth in manufacturing employment in a country by 4.02 percentage points. They also find some, though mixed, evidence that labour market rigidities inhibit labour market responses.

Revenge (1997) also finds small employment effects for Mexico: tariff reductions had no statistically significant effect on employment, while removal of import quotas reduced employment minimally. Similarly small employment effects are found in other studies (Pages-Serra & Marquez, 1998; Moreira & Najberg, 2000; Rama, 1994).

Currie and Harrison (1997) explain why such employment effects might be small. They analyse data from Morocco and found that the impact of trade on wages and employment depends on the degree of imperfections in the output market. For competitive markets in which profit margins are small, import penetration reduces employment. By contrast, for those markets with larger profit margins, virtually no change occurs in wages or employment. These results led the World Bank (2009) to conclude that, at least for these cases, increased trade exposure leads to positive outcomes.

5.3 The evolution of EPZ export performance in Mauritius

The focus now turns to analysing the effects of the removal of preferences in Mauritius after the MFA. The emphasis is on determining whether there has been a change in terms of performance measured by employment and exports.

Textiles and clothing products were returned to GATT (General Agreement on Tariffs and Trade) rules over the ten-year period of 1995-2005. *‘This happened gradually, in four steps, to allow time for both importers and exporters to adjust to the new situation. Some of these products were previously under quotas. Any quotas that were in place on 31 December 1994 were carried over into the new agreement. For products that had quotas, the result of integration into GATT was the removal of these quotas. The agreement stated the percentage of products that had to be brought under GATT rules at each step. If any of these products came under quotas, the quotas had to be removed at the same time. The percentages were applied to the importing country’s textiles and clothing trade levels in 1990. The agreement also said the quantities of imports permitted under the quotas had to grow annually, and that the rate of expansion had to increase at each stage. How fast that expansion would be was set out in a formula based on the growth rate that existed under the old Multi-Fibre Agreement’* (WTO,n.d.).

The ATC set a four-stage quota liberalisation schedule which is outlined in Article 2 of the Agreement. Each phase foresaw the integration of a specific percentage of textile categories based on 1990 levels. The first stage lasted three years, the second lasted four years, and the third three years. The final stage was the date of full integration (1 January 2005). As Table 5.1 indicates, the first phase of quota removal (between 1995 and the end of 1997) saw quantitative restrictions lifted from a minimum of 16% of imports, followed by batches of a minimum of 17%, 18% and finally 49% (the remaining categories).

Table 5.1 Steps to MFA phase out

There were four steps over ten years. The example is based on the commonly used 6% annual expansion rate of the old MFA. In practice, the rates used under the MFA varied from product to product.

Step	Percentage of products to be brought under GATT (including removal of any quotas)	Percentage of products to be brought under GATT (including removal of any quotas)
Step 1: 1 Jan 1995 (to 31 Dec 1997)	16% (minimum, taking 1990 imports as base)	From 6% to 6.96% per year (All annual quota growth rates, which existed in respective bilateral agreements prior to the ATC, to be increased by a factor of at least 16%. Thus an annual growth rate of 6 % should be increased to 6.96 %; 5 % to 5.80%; 4% to 4.64%; 3% to 3.48 %; 2% to 2.32%; 1% to 1.16 %.)
Step 2: 1 Jan 1998 (to 31 Dec 2001)	17%	From 6.96 % to 8.7% per year (The annual growth rates resulting from the above formula will be increased further by at least 25 %.)
Step 3: 1 Jan 2002 (to 31 Dec 2004)	18%	From 8.7% to 11.05% per year (The rates resulting from the above (i.e. 1998) will be increased by another at least 27%.)
Step 4: 1 Jan 2005 >Full integration into GATT (and final elimination of quotas). >Agreement on Textiles and Clothing terminates.	49% (maximum)	No quotas left
The actual formula for import growth under quotas was: by 0.1 x pre-1995 growth rate in the first step; 0.25 x Step 1 growth rate in the second step; and 0.27 x Step 2 growth rate in the third step.		

Source World Trade Organisation

(http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm5_e.htm)

Besides regulating quota removal and the integration of the textiles and clothing trade with normal GATT disciplines, the ATC in Article 2(13)-(14) also required a concurrent increase in the remaining quotas. In other words, the ATC sought to ensure not only ongoing liberalisation, but also that the process would be undertaken with some momentum. These increases— expressed as a percentage and shown in the last column in Table 5.1 below – refer to an increase of quota levels beyond the increases foreseen by the MFA. For example, where the annual quota increase foreseen for a particular country and category is 5%, it would have to be increased by 16%, i.e. from 5% to 5.8% (5% multiplied by 16% annual growth), 5.8% to 7.25% (i.e. 5.8% multiplied by 25% annual growth) and 7.25% to 9.21% (i.e. 7.25% multiplied by 27% annual growth) in the third stage. Smaller developing countries are recognised in ATC Article 2(18), in that where a country's restricted exports were 1.2% or less of the volume of a particular importing country's restrictions, such a country should be fast-tracked to benefit from the next stage of quota growth rates.

Products brought under GATT rules at each of the first three stages had to cover the four main types of textiles and clothing: tops and yarns, fabrics, made-up textile products, and clothing. Any other restrictions that did not come under the MFA and did not conform to regular WTO agreements by 1996 had to be made to conform or be phased out by 2005.

We start our evaluation of the impact of these changes with an overview of the Mauritius EPZ (replaced by EOE – Export Oriented Enterprises – after 2005) exports for the period 2000-2010, which provides an indication of the evolution of exports prior to and after preferences.

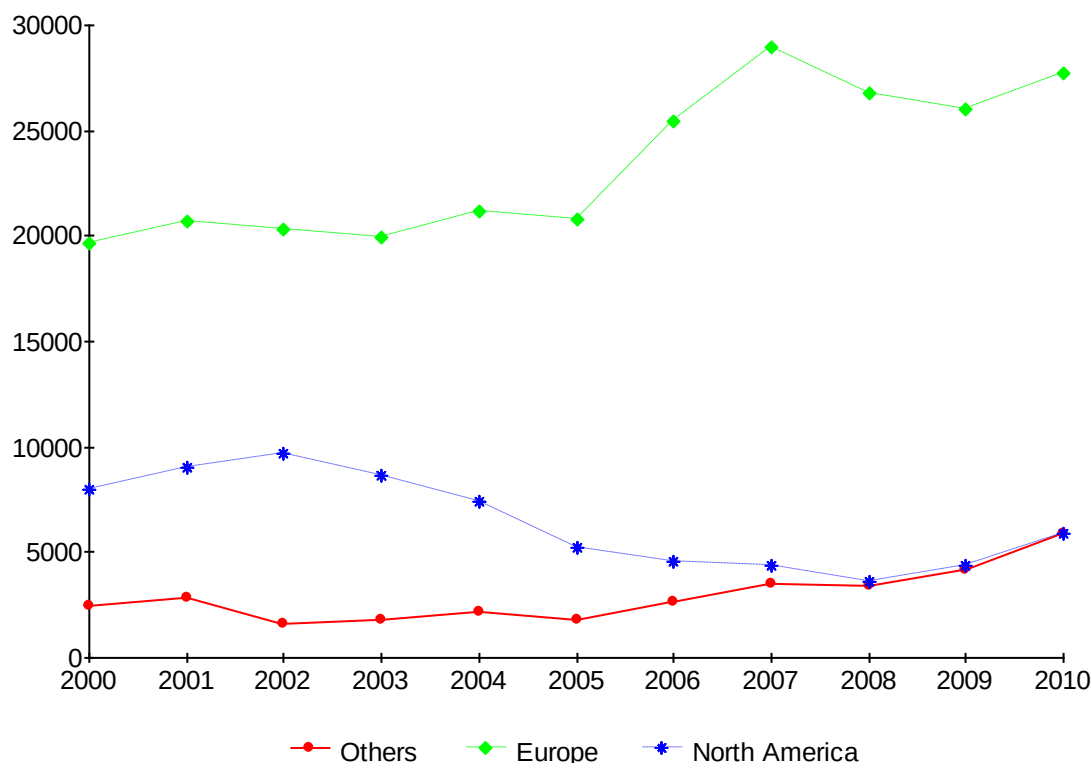


Figure 5.1 EPZ exports in Rs Million (2000-2010)

Source: Central Statistics Office, Mauritius

Mauritian EPZ exports to Europe remained mostly at the same level throughout the period 2000-2004 with a slight decrease in 2005, the year of the complete removal of preferences. After 2005, the exports to Europe surged until 2007 and remained within the range Rs 25,000 million to Rs 30,000 million from 2008 to 2010. Exports to North America decreased systematically from 2002 onwards, which coincides with the beginning of the third stage of tariff removal under the Agreement on Textiles and Clothing (ATC).

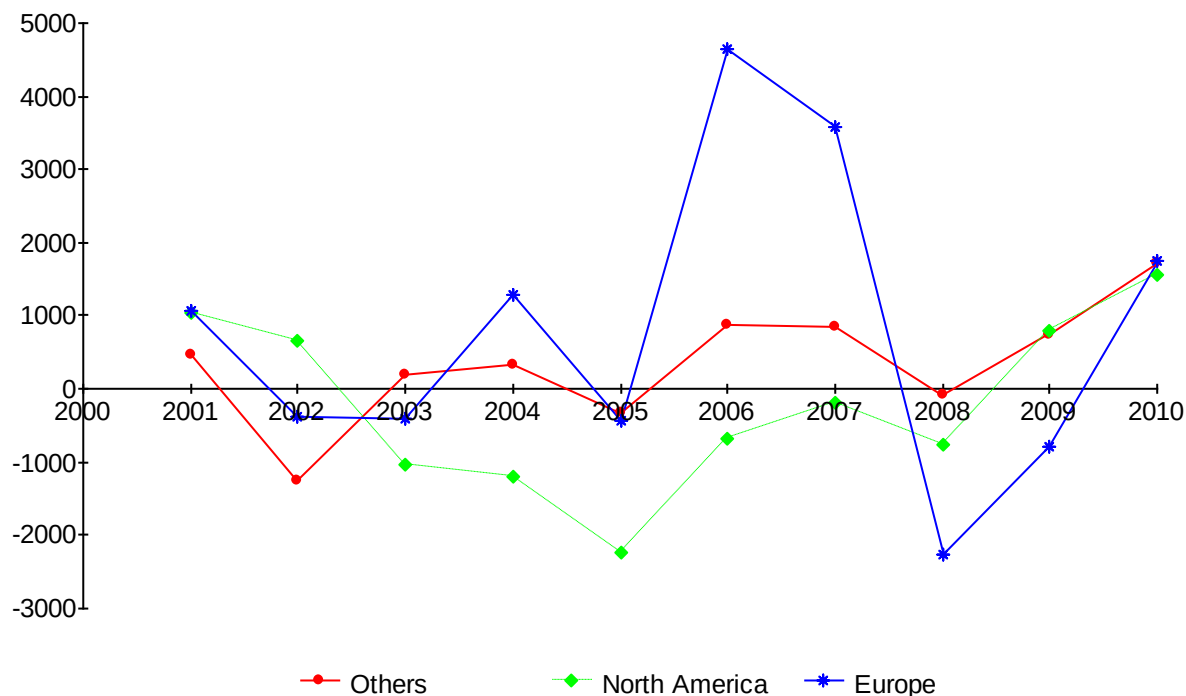


Figure 5.2 Change in EPZ exports in Rs million

Source: Central Statistics Office, Mauritius

Computing year-on-year changes in exports (Figure 5.2) highlights the drastic fall in exports to both Europe and North America in the period leading up to 2005.

Total EPZ exports, illustrated in Figure 5.3, experienced a slight fall from 2001 to 2005, but after 2006 total EPZ exports increased steadily. A sensible explanation for this is the diversification of EPZ exports to countries such as South Africa and Madagascar after 2005. There is also the fact that Mauritian companies restructured and refocused, which made them resilient to a degree.

A key feature of the EU market is the duty-free status accorded to exports originating from ACP countries under the Cotonou Agreement which have continued to provide some degree of protection against cheaper Asian exports. In the absence of such tariff preferences, it is unlikely that Mauritius could have measured up to China (Goliath, 2009:13).

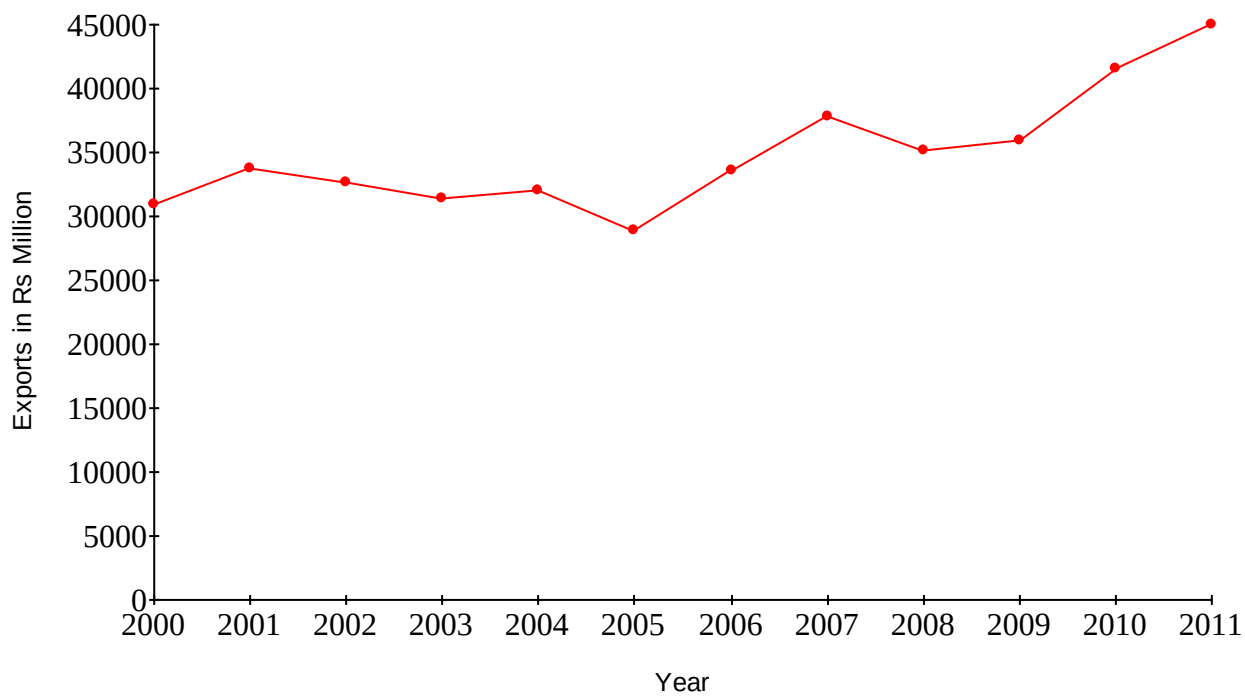


Figure 5.3 Total EPZ exports (2000-2010)

Source: Central Statistics Office, Mauritius

The resilience of Mauritian EPZ exports, which mitigated the impacts of ATC after 2006, could be attributed not only to the effects of the prolongation of AGOA preferences, but also to the fact that Mauritius was quick to move towards improving productivity and competitiveness. Figure 5.4 confirms that labour productivity has been rising at an increasing rate since 2005. This is an indication that those firms in the textiles and apparel sectors that managed to weather the shocks of the removal of the MFA and remained operational after 2005 have restructured on the basis of improved labour productivity and competitiveness.

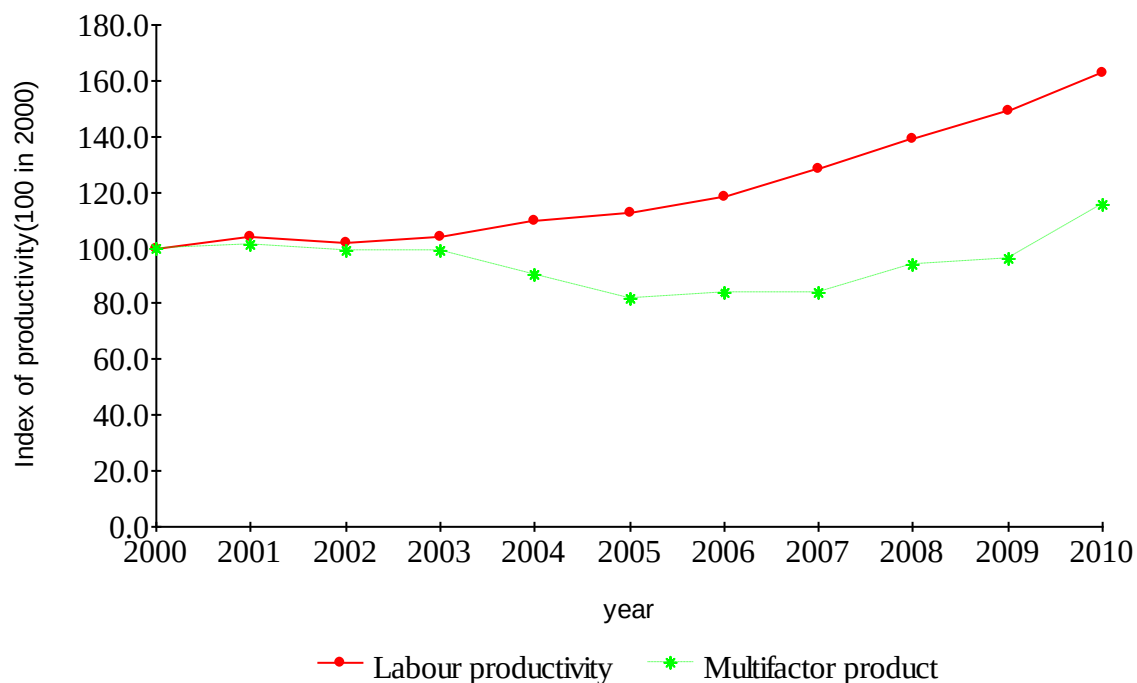


Figure 5.4 Productivity of labour in textiles

Source: Central Statistics office Mauritius

5.4 EPZ employment performance

The other main performance indicator for the EPZ, namely employment, reveals that the number of enterprises in the EPZ remained relatively stable through the period 2000-2005, with a slight fall in 2006 and 2007. This was not something specific to the EPZ, as data on the industrial sector also reveals a decrease for the whole sector in 2005 and 2006.

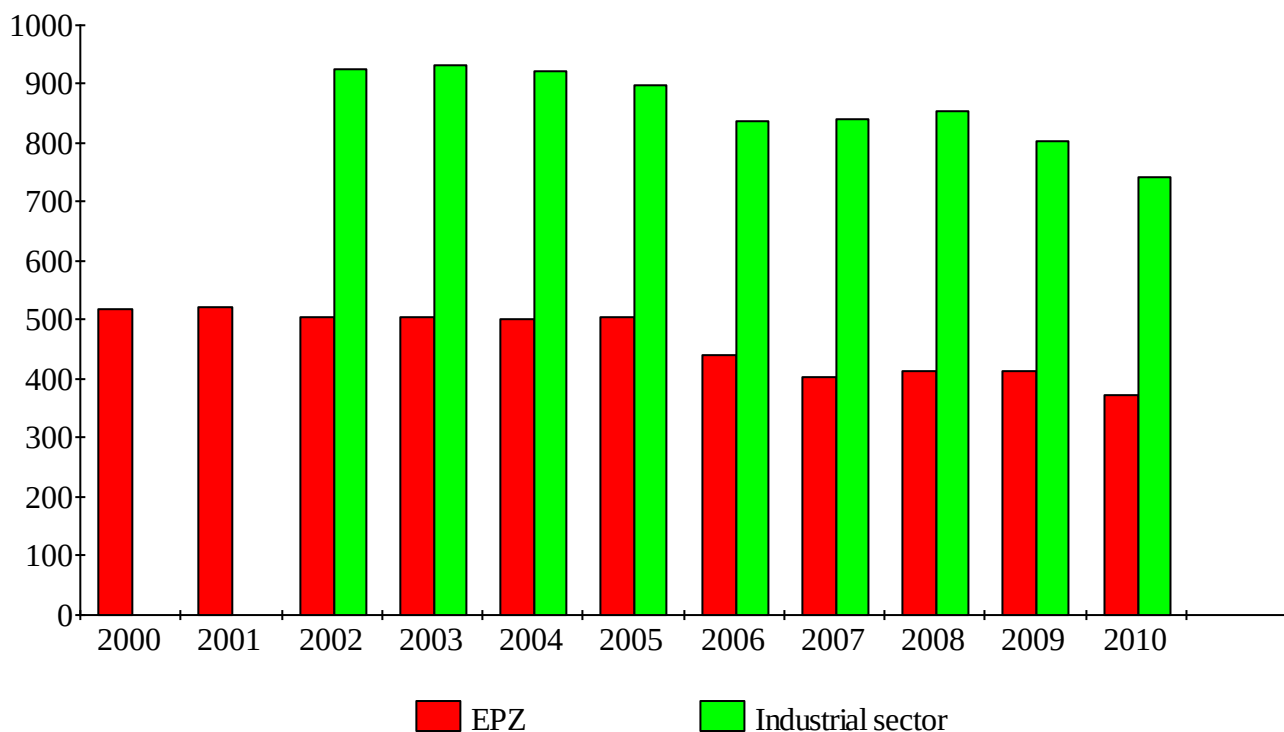


Figure 5.5 Number of enterprises EPZ v/s industry

Source: Central Statistics Office, Mauritius

Employment in the EPZ sector as compared to total employment in Mauritius (Figure 5.6), however, reveals that the fall in EPZ employment from 2002 onwards was EPZ-specific, which contrasts with the increase in employment for the rest of the economy as observed in Figure 5.7.

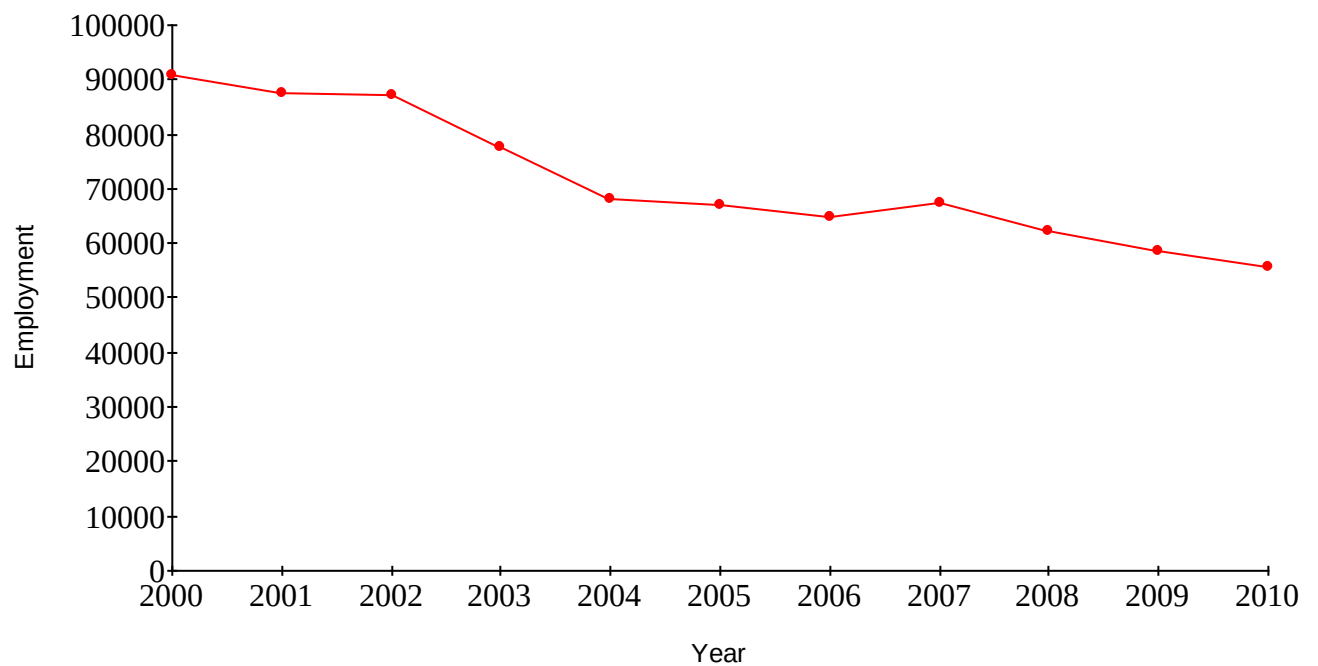


Figure 5.6 EPZ Employment (2000-2010)

Source: Central Statistics Office, Mauritius

Based on the aforementioned, it looks as if EPZ performance in general seemed to have been moderately affected by the gradual removal of preferences, but the drastic changes are concentrated in the period 2002-2005.

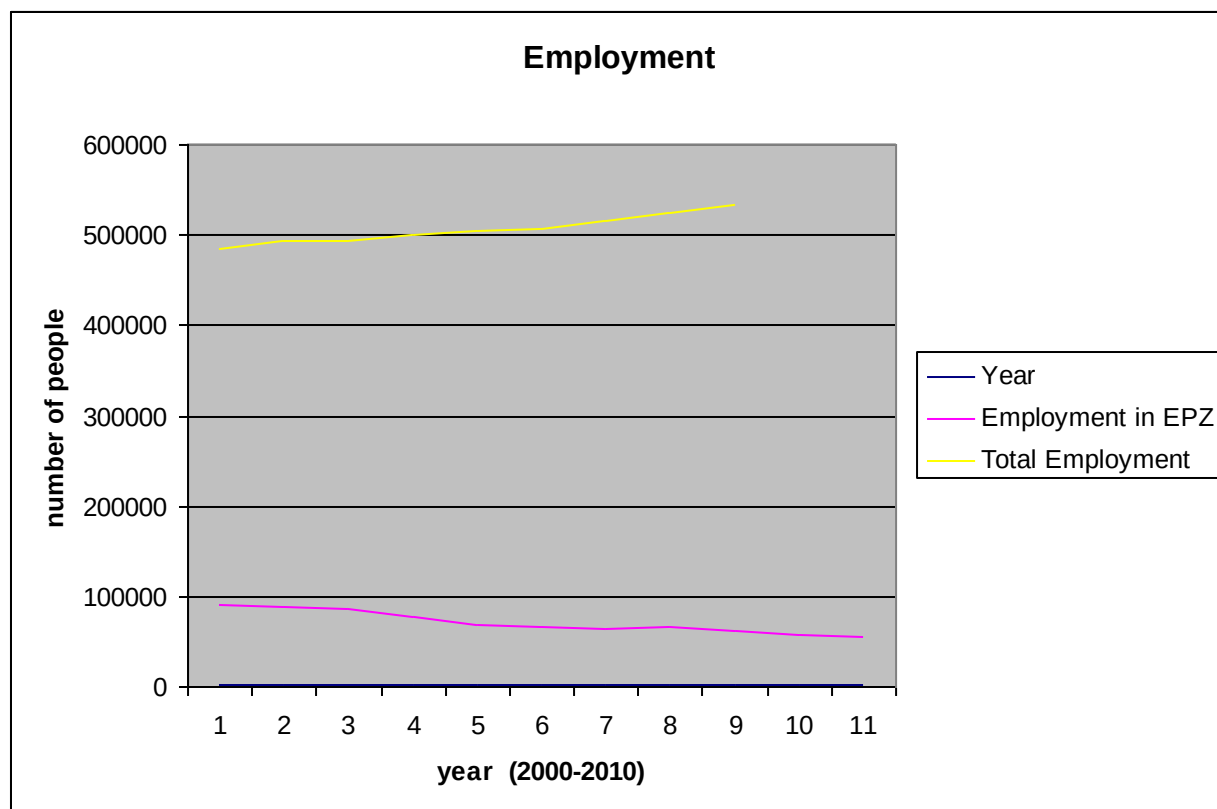


Figure 5.7

Source: Central Statistics Office, Mauritius and ILO websites

5.5 Product specific

Data at product level in Mauritius provide us with an indication of the performance of those manufacturing products in Mauritius that took advantage of the non-reciprocal trade preferences (namely – textiles, yarn, and fabrics and apparel) before and after the preferences were removed for the time period 1995-2010. Those manufactured products will be compared with those products that did not have preferences throughout – for instance, food, flowers, optical goods, jewellery and toys, etc. It will be determined whether the removal of preferences actually made a difference in the performance of these EPZ products. It will also be determined whether those products in the manufacturing sector that never benefited from preferences actually experienced a change in their performance during the post-preference period.

The Central Statistics Office Mauritius divides the manufacturing sector into 11 product groups – namely, No.1: Food, No.2: Flowers, No.3: Textile Yarn and Fabrics, No.4:

Wearing Apparel, No.5: Leather Products and Footwear, No.6: Wood and Paper Products, No.7: Optical Goods, No.8: Electronic Watches and Clocks, No.9: Electric and Electronic Products, No.10: Jewellery, No.11: Toys.

Performance is measured in two ways: (i) employment on a quarterly basis for the periods 1995-2004 and 2005-2010 (e.g. March 1995, June 1995, September 1995, etc.), and (ii) exports on a quarterly basis for the periods 1995-2004 and 2005-2010.

Analysing performance in this way gives an indication of how the different EPZ product groups have been performing in terms of employment and exports. For both performance indicators (employment and exports), Apparel was by far the highest exporters and the biggest employer in the EPZ sector. As regards employment in Apparel, there was an increasing trend until around 2002 but with a sudden drastic decrease as from 2003 when we entered the third stage of the quota removal under ATC, which consisted of four stages as shown in Table 5.2. By looking at the progress of quota removal according to Naumann (2006), under ATC for USA and EU, it is noted that nothing much was done during the first two stages and the number of items where restrictions were removed increased significantly only in stage 3 to drastic removal of quotas during the final stage 4, as shown in Table 5.2.

Table 5.2 Progress of quota removal under the ATC

	No. of restricted items at outset of ATC	Stage 1 Jan1995 – Dec 1997	Stage 2 Jan 1998 – Dec 2001	Stage 3 Jan2002 – Dec 2004	Stage 4 1 Jan2005
USA	758	0	14	43	701
EU	218	0	14	27	167

Source: Naumann(2006)

The removal of quotas from US and EU (Table 5.2), which are the markets for Mauritius's Apparel products, only became effective as from January 2002 and it is therefore not surprising that the performance of Apparel in Mauritius slowed down after 2003.

With regards to EPZ exports by product, the same trend is observed for Apparel, the highest exporter, with very significant falls from 2003-2005 and growth resuming after 2006. Jewellery was also coming up as the second most important product group as from 2005-2006. As far as total exports are concerned (Figure 5.8), there was an upward trend throughout the period 1995-2010, indicating that total exports seemed to be unaffected by the changes in the preference regimes, confining pre- and post-preference effects only to the EPZ sector.

Table 5.3 A comparative table of those African countries (list from Boyenge (2007)) that had an EPZ like Mauritius and which qualified after 2000 under both the Cotonou Agreement and AGOA

Country	EPZ exports as a % of total exports for 2003	No. of EPZ 2003	EPZ exports as a % of total exports for 2007	No. of EPZ 2007
Cameroon	32	1	33	1
Cape Verde	NA	2	NA	NA
Ghana	NA	4	70	4
Kenya	80	6	86.9	43
Lesotho	No EPZ	0	80	8
Madagascar	40	NA	80	NA
Malawi	NA	1	NA	1
Mali	NA	3	80	3
Mauritius	77	Whole island	42	whole island
Mozambique	85	1	85	1
Namibia	80	11	41	1
Senegal	80	NA	NA	NA
South Africa	NA	6	NA	6

Source: Boyenge(2007)

Taking a look at the imports into the USA and EU (from 1996-2012) – the two main markets for textiles and clothing –the graph below plots export trends for the above African countries, as well as trends for some of the major players in the post-preference period – namely, China, India, Bangladesh and Sri Lanka.

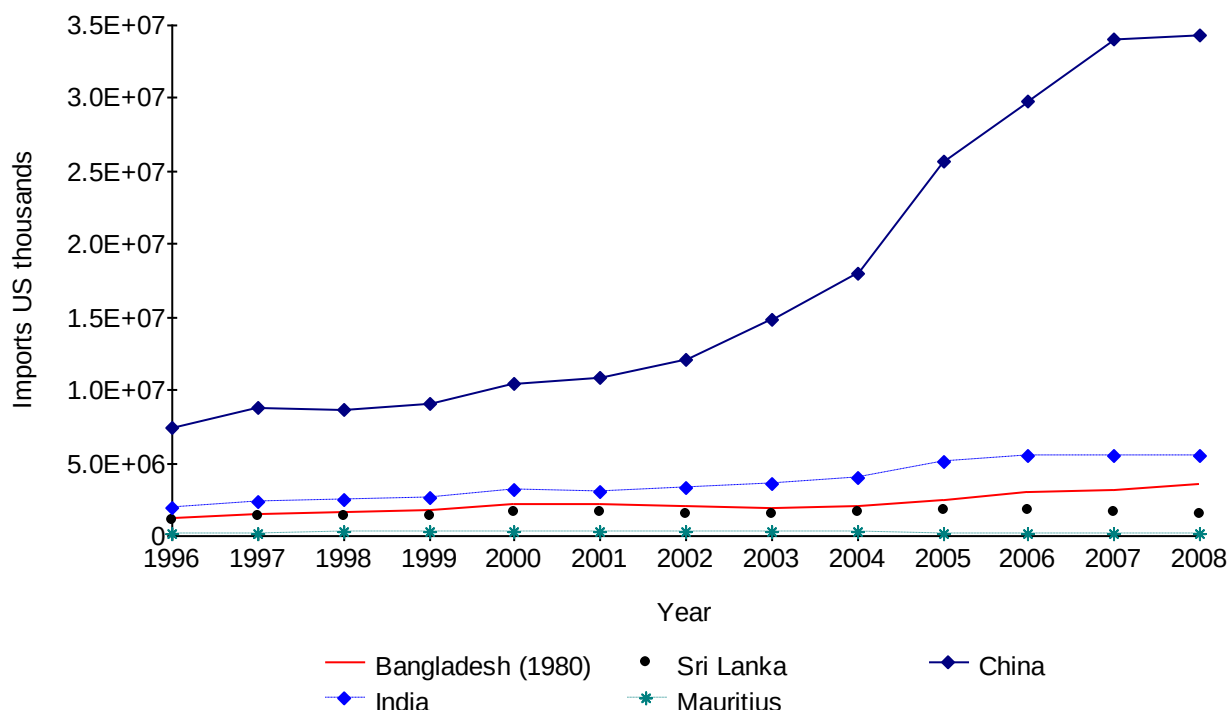


Figure 5.9 Textiles imports in the US

Source: World Integrated Trade Solution (WITS) <http://wits.worldbank.org/>

(Note: Textiles as 26+65+84 of SITC Rev.1)

Chinese textiles exports into the USA (Figure 5.9), which were already at a high level, more than doubled between 2003 and 2006. Bangladesh, Sri Lanka and India also exported more to the USA after 2005, while for Mauritius one can observe a gradual decrease in its exports to the USA after a peak in 2003. The same trend is noted for the other African countries with falls in exports to the USA after 2003/2004.

Table 5.4 Textile imports into the USA from the other African countries (including Mauritius) from 1996-2008 in USD thousands

Trade Year	Ghana	Kenya	Mozambique	Malawi
1996	913	27,820	447	1,488
1997	1,260	31,822	156	276
1998	7,814	33,795	116	246
1999	3,619	39,670	44	1,204
2000	508	44,093	0	7,326

2001	407	64,654	179	12,385
2002	550	126,492	193	11,432
2003	4,505	188,152	2,528	23,173
2004	7,432	277,457	2,255	26,775
2005	5,207	270,872	2,516	22,781
2006	9,564	264,090	694	18,187
2007	3,632	249,999	163	19,830
2008	919	247,077	1	12,677

Source: World Integrated Trade Solution (WITS)

(Note: Textiles as 26+65+84 of SITC Rev.1). Numbers in bold represent imports in the post-preference period

Table 5.5 Textile imports into the USA from the other African countries (including Mauritius) from 1996-2008 in USD thousands (cont.)

Trade Year	Mali	Lesotho	Mada	Mauritius
1996	1,179	64,922	12,177	165,220
1997	278	86,554	16,220	184,586
1998	200	100,183	22,822	233,613
1999	1,866	110,745	46,226	232,104
2000	261	140,060	110,125	244,863
2001	108	216,776	178,877	238,345
2002	121	321,049	90,077	254,640
2003	150	392,490	196,768	269,143
2004	72	456,010	323,885	226,781
2005	78	390,690	277,496	167,014
2006	116	387,242	238,742	119,176
2007	107	383,568	290,628	114,968
2008	102	339,757	279,953	101,691

It is noted that Mauritius (Table 5.5), in contrast to many SSA countries that built their clothing industries on the provisions of the Africa Growth and Opportunity Act (AGOA 2000), was already exporting to the USA under the GSP (Generalised System of Preferences) regime and, additionally, as a beneficiary of the MFA quota system. Thus, clothing exports in 1995 were already high. Goliath (2009:11) shows that while a ‘major proportion of exports shifted to AGOA after 2000, this shift has been gradual and the overall percentage of exports to the US under AGOA has remained small – 52 percent over the period 2001-2005 compared to over 95 percent for most of the SSA exporters (except South Africa). This means that about half of Mauritius’s exports did not enjoy duty-free

access to the US market, which exposed them particularly to the threat of China sweeping over the US market upon the expiry of the MFA'. Furthermore, many apparel exporters were hopeful that Mauritius would be obtaining an extension of the third-country fabric derogation beyond September 2005. When this did not happen during the period 2003-2005, a number of Asian companies that exported exclusively to the USA exited the Mauritian EPZ during 2003-2007. However, Mauritius was able to secure an extension in 2008.

As far as imports to the EU are concerned (Figure 5.10), the situation is similar to the USA trends, but the changes seem to be more drastic, especially regarding the increase in exports from China, India and Bangladesh after 2005 when all preferences were removed and the ATC became operational.

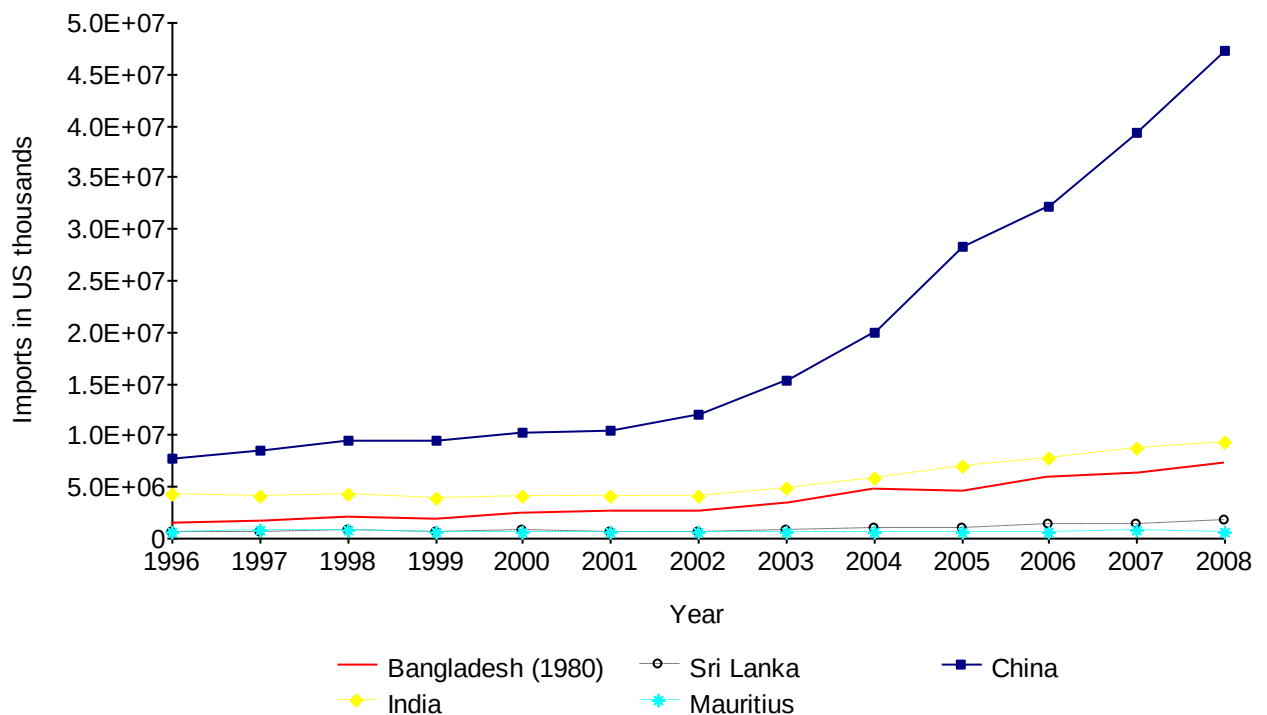


Figure 5.10 Textiles imports in the EU

Source: World Integrated Trade Solution (WITS) <http://wits.worldbank.org/>

(Note: Textiles as 26+65+84 of SITC Rev.1)

Table 5.6 Textiles imports to the EU from the other African countries (including Mauritius) from 1996-2008 in USD thousands

Trade Year	Ghana	Kenya	Mozambique	Malawi
1996	1,592	14,518	20,420	6,454
1997	1,907	17,656	26,399	2,317
1998	594	14,722	25,723	1,921
1999	1,433	11,266	22,969	607
2000	4,232	8,561	20,501	841
2001	3,217	6,246	14,606	584
2002	4,839	7,063	10,014	144
2003	1,835	9,407	14,457	175
2004	3,327	13,848	12,727	261
2005	2,279	12,066	7,748	36
2006	1,606	12,353	7,158	117
2007	1,012	6,133	3,208	14
2008	1,302	5,063	3,376	

Source: World Integrated Trade Solution (WITS) (Note: Textiles as 26+65+84 of SITC Rev.1) Numbers in bold represent imports in the post preference period.

Table 5.7 Textiles imports to the EU from the other African countries (including Mauritius) from 1996-2008 in USD thousands (cont.)

Trade Year	Mali	Lesotho	Mada	Mauritius
1996	79,855	13,182	136,488	643,963
1997	81,299	4,642	177,968	682,661
1998	101,366	843	229,227	721,511
1999	57,195	173	246,846	671,849
2000	40,461	1,652	249,599	627,843
2001	21,340	3,373	247,356	599,972
2002	38,993	1,913	130,382	586,393
2003	34,485	1,496	139,334	623,687
2004	50,354	1,787	196,843	646,425
2005	32,954	812	216,262	562,307
2006	19,304	1,076	279,354	623,191
2007	21,797	2,328	329,147	678,425
2008	8,777	2,725	330,516	639,670

5.7 Average change in performance indicators by product in Mauritius

The change in exports and employment for the different products groups in Mauritius for period 1995-2004 and 2005-2010 are presented in tables 5.8 and 5.9.

Table 5.8 Average% change in EPZ exports by product

Product	Food / live animal	⁴ Crude materials	Chemicals	Textile fabrics	Pearls	Apparel	Optical	Watches	Toys	Jewellery
Period 1995-2004	4.6	44	16	10.1	5.1	3.85	2.9	1.81	14	7.5
Period 2005-2010	7	7	12	3.1	2.7	1.6	7.1	4.1	4.7	10.3

Table 5.9 Average% change in EPZ employment by product

Product	Food	Flowers	Textile Fabrics	Apparel	Leather	Wood Paper	Optical	Watches	Electronics	Jewellery	Toys
Period 1995-2004	1.12	-0.69	0.58	-0.64	-1.76	0.92	-0.52	0.82	0.08	0.59	-0.76
Period 2005-2010	3.04	-2.89	0.09	-1.37	-0.48	0.62	-0.81	-0.31	0.37	-0.27	-3.84

Sources for tables 5.6 and 5.7: Author's own calculations from Central Statistics Office Mauritius data

The apparel and textiles average percentage change in exports (Table 5.8) during 2005-2010 was one third of the average change in 1995-2004, while most of the other products were not affected by the ATC – namely, Food/live animals, Opticals, Watches, Toys and Jewellery. An increase in the average percentage change in exports after MFA was observed. With regard to employment, a fall in the textile sector is noted and an even more significant decrease in the apparel sectors after MFA. Some other products which also had an average percentage decrease were flowers, wood and jewellery, while increases can be observed for food and electronics.

5.8 Computing the double difference

To analyse further the impact of the removal of preferences, the difference-in-differences (DID) estimation is used, which compares the changes of the product groups Textile/Yarn/Fabrics and Apparel (Nos. 3 and 4) with the other sectors. The treatment group will be groups 3+4, while the control group will be the other sectors taken together.

The simplest way would be to compute the average treatment groups and control groups over the two time periods. One of the groups is exposed to a treatment (preferences) in the first period but not in the second period. The second group is not exposed to the treatment during either period. In the case where the same units within a group are observed in each time period, the average gain in the second (control) group is subtracted from the average gain in the first (treatment) group. This removes biases in first period comparisons between the treatment and control group that could result from permanent differences between those groups, as well as biases from comparisons over time in the treatment group that could be the result of trends.

Table 5.10 DID estimate of the effect of preferences on $\ln^4$ employment (i.e. $\ln(\text{employment}_t) - \ln(\text{employment}_{t-1})$)

	Average difference in $\ln$ employment (quarterly)		Difference between periods
	June 1995 – December 2004 (preference)	March 2005 – December 2010 (no preference)	
Textile and wearing apparel (group3+4)	-0.0015	-0.0075	0.006
All other sectors	-0.0020	-0.0078	0.0058
Difference between groups	0.0005	0.0003	0.0002-DID estimate

The simple differences are in the two columns, while the difference-in-differences are in the bottom right cell.

⁴ $\ln$ values are used as this is more convenient and easier to tabulate which will give us a straight line if we are to plot the results.

In the second column (Table 5.10) it can be seen that the difference between the two groups in terms of employment during the preference period was 0.0005 and this difference decreased slightly once the preferences were removed, principally as a result of loss of employment in the treatment group. Looking at the difference between periods, it can be noted that slightly more employment was lost in the textile and wearing apparel group than the other sectors after the preferences had been removed. The difference-in-difference (DID) rating is 0.0002, showing that annual growth in employment under preferences was 0.0002 percentage points higher than after preferences.

Looking at exports (Table 5.11), it can be noted that when preferences were still ongoing, the differences between groups were largely in favour of the treatment group with a high of 0.629. When the preferences no longer applied, the differences between groups came down to 0.242. As far as the differences between periods are concerned, the treatment group was slightly affected after 2004, while no change was observed in the control group. The DID estimate of 0.387 shows that the annual growth in exports under preferences was 0.387 percentage points higher than when the preferences were removed.

Table 5.11 DID estimate of the effect of preferences on ln⁵ exports

	Average difference in ln exports (quarterly) Rs million		Difference between periods
	1 st quarter 1995– last quarter 2004(preference)	1 st quarter 2005 – last quarter 2010(no preference)	
Textile and wearing apparel (group3+4)	0.652	0.265	0.387
All other sectors	0.023	0.023	0
Difference between groups	0.629	0.242	0.387-DID estimate

⁵ Ln measures growth rates in exports.

5.9 Using regression to confirm the DID results

From the above analysis it is observed that in practice the impact on apparel exports has been milder than was actually feared. Goliath (2009) found that the prophecy of doom, that predicted that SSA's apparel trade would be swept away by the Chinese tidal wave of cheap exports, was unwarranted. One important factor, according to Goliath (2009), is the remarkable changes in exports by product category, which he illustrates by using Kenya as an example, where exports of T-shirts to the USA declined, while exports of men's and boys' cotton shirts increased strongly.

Mauritian companies were also orienting their strategies towards a model based on market knowledge and innovation of products and services. The purpose was not only to move to more efficient production and marketing of higher-value products and services, but also to move away from traditional markets and towards Africa and the Far East. Looking at the Mauritian export data for products by HS (Harmonised System) codes for the period 2001-2008, one might get an indication of whether Mauritius exports by products actually experienced a change before and after MFA. We may also get an indication of whether Mauritian exports by products actually experienced the same types of changes that have been observed in Kenya.

DID will measure the average difference between the treatment and control groups using the following specifications:

$$y = \beta + \alpha_1 D_1 + \beta_1 dT + \alpha_2 D_1 * dT + \mu \text{-----}(1)$$

where $T=1$, if in treatment group and $T=0$ if in control group

and $D_1 = 1$ until 2004 (with preferences) and $D_1 = 0$ as from 2005 (without preferences)

Time Dimension: from 2001-2004 and from 2005-2008.

y is the outcome of interest, D_1 is the time period dummy variable which captures aggregate factors that would cause changes in y even in the absence of a policy change. The dummy variable dT captures possible differences between the treatment and control groups after preferences have been removed. The coefficient of interest α_2 multiplies the interaction term $D_1 * dT$, which is the same as a dummy variable equal to one for those observations in the treatment group in the period before

2005. The DID approach is used as a way of eliminating unobserved heterogeneity, i.e. it is a way of eliminating fixed factors that might have an impact between treatment and control groups.

To study the impact of preferences on the treatment group, information is used from the Central Statistics Office Mauritius for manufacturing sector exports from the Exports by HS codes from 2001-2008. The table in the document from Central Statistics Office Mauritius contained columns for HS codes, products, country of destination and exports. Figures have been tabulated for exports exceeding Rs 35 million/year, which is equivalent to approximately \$1 million. This brought down the number of observations to 1,215. All textiles and clothing products were in the treatment group with a $T=1$, and year dummies were also inserted in the tabulation. The dependent variable is $\ln$ exports.

A linear regression (Table 5.12) was done to verify the average difference between the treatment and control groups across time (from 2001-2008). This method is a way to eliminate fixed factors that might have an impact between treatment and control groups. The regression for the average difference between $\ln$ exports before and after preferences were removed to demonstrate that the removal of preferences did have an impact on exports. The T coefficient is significant at $p < 0.01$ with a coefficient of 27.2%, meaning the exports in the treatment group changed (decreased) by a significant percentage after the preferences had been removed (see Table 5.10).

5.10 Including covariates into the regression

Including the AGOA variable, which takes a dummy of 1 when the export destination is the USA, shows that it has an influence on the outcome variable. The T coefficient in the third column is lower but still significant, while the AGOA control variable adds 37.9% to exports during preferences and is thus less by 37.9% after preferences, principally as a result of the preferences being removed on textiles and apparel.

Using non-EU members as another dummy in column 4, it is noted that the T coefficient becomes even lower at 0.230 while remaining still significant, while the non-EU variable has a negative coefficient of -0.38 and is significant, which means that non-EU members' contribution to exports were lower with preferences and increased by 38% after preferences had been removed.

Column 5 shows the effects of both AGOA and non-EU with the T still significant, but with a coefficient decreasing to 0.223. Thus, when the effects of AGOA and non-EU member countries are highlighted, a fall is noted in exports after preferences have come down to 22.3% from an initial decrease of 27.5%. It shows that the removal of preferences did have an impact on the treatment group, but its effect was less pronounced when non-EU and AGOA were included in the equation.

Table 5.12 Difference-in-differences estimation for treatment group post-2004 (after removal of preferences)

Variables	Lnexports	Lnexports	Lnexports	Lnexports
AGOA_USA		0.379***		0.310***
		(0.0990)		(0.0999)
T(Treatment effect)	0.272***	0.258***	0.230***	0.223***
	(0.0644)	(0.0643)	(0.0644)	(0.0644)
d2001preferencedummy	-0.637	-0.572	-0.398	-0.365
	(0.630)	(0.628)	(0.627)	(0.625)
d2002	-0.577	-0.513	-0.368	-0.334
	(0.629)	(0.627)	(0.625)	(0.624)
d2003	-0.558	-0.479	-0.345	-0.297
	(0.647)	(0.644)	(0.643)	(0.641)
d2004	-0.554	-0.494	-0.328	-0.302
	(0.646)	(0.644)	(0.642)	(0.641)
d2005	-0.550	-0.466	-0.283	-0.236
	(0.643)	(0.641)	(0.640)	(0.638)
d2006	-0.497	-0.415	-0.231	-0.184
	(0.642)	(0.640)	(0.639)	(0.638)
d2007	-0.604	-0.510	-0.320	-0.267
	(0.642)	(0.640)	(0.639)	(0.638)
d2008	-0.588	-0.491	-0.309	-0.254
	(0.642)	(0.640)	(0.639)	(0.638)
Non-EU			-0.380***	-0.347***
			(0.0776)	(0.0785)
Constant	18.94***	18.83***	18.79***	18.71***
	(0.639)	(0.636)	(0.634)	(0.633)
Observations	1,215	1,211	1,213	1,209
R-squared	0.017	0.029	0.036	0.044

Standard Errors in brackets

5.11 Move towards high-end products

From Table 5.13 it is observed that while in 2001 the top Rs 100,000 (Mauritian Rupees) of textile and clothing exports from Mauritius were to Europe and the USA, in 2008 UAE joined the list of top export markets. As regards products, Mauritius was now exporting a large quantity of HS (Harmonised Systems) code product 62052090, consisting of other men's or boys cotton shirts (which included woven, knitted and crocheted) to the USA. It therefore seems that Mauritius was moving towards the high-end cotton luxury market.

Table 5.13 EPZ exports: 2001 and 2008 for export values exceeding Mauritian rupees Rs 100,000,000

HS code	Year	Product description	Country of destination	Exports – FOBvalue(rs)
61091000	2001	T-shirts, singlets and other vests of cotton, knitted or crocheted	France	2,979,710,386
61091000	2001	T-shirts, singlets and other vests of cotton, knitted or crocheted	UK	2,245,191,970
62034200	2001	Men's/boys'trousers ,bibs,shorts etc. of cotton –not knitted/crocheted	US	2,190,689,545
62046200	2001	Women's/girls' trousers,bibs,shorts etc. of cotton – not knitted or crocheted	US	2,157,281,964
62052000	2001	Men's/boys'shirts of cotton – not knitted or crocheted	US	1,834,219,286
16041400	2001	Prepared or preserved tuna, skipjack and Atlantic bonito	UK	1,574,697,113
62046200	2002	Women's/girls' trousers,bibs ,shorts etc.of cotton – not knitted or crocheted	US	3,022,004,238
17011100	2008	Raw cane sugar in solid form, not flavoured or coloured	UK	7,092,773,154
61091000	2008	T-shirts, singlets and other vestsof cotton, knitted or crocheted	UK	4,727,635,158
16041400	2008	Prepared or preserved tuna, skipjack and Atlantic bonito	UK	3,565,073,253
61091000	2008	T-shirts, singlets and other vestsof cotton, knitted or crocheted	France	2,760,697,504
62052090	2008	Other men's/boys' shirts of cotton	US	1,907,907,326
85171200	2008	Telephones for cellular networks or for other wireless networks	UAE	1,622,477,534

16041400	2008	Prepared or preserved tuna, skipjack and Atlantic bonito	Italy	1,112,061,612
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Source: Central Statistics Office Mauritius

As Table 5.11 shows, 2008 saw the revival of the textile and apparel sectors in Mauritius, which occurred as a result of innovation in ideas, in R&D and high-quality products and the diversification of exports towards non-EU markets.

5.12 Conclusion

With the creation of the WTO and the complete removal of preferences, the future of the Mauritian EPZ, in particular the textiles and clothing sector (which constituted the bulk of EPZ exports), seemed very uncertain. Most previous studies on the removal of preferences on textiles and clothing generally reveal welfare losses for countries such as Mauritius. This chapter analysed the evolution of the Mauritian manufacturing sector and its various product groups during and after removal of preferences to see whether there actually was a sudden fall in exports and employment (the two performance indicators) that was specific to textile and clothing products once the preferences were removed.

Starting with an analysis of EPZ export performance, the chapter showed that Mauritius EPZ exports to the EU did not seem to have been affected by the removal of preferences. However, exports to North America decreased systematically after 2002. As far as total EPZ exports are concerned, the data reveal a slight fall from 2000-2006, but a steady increase after 2006 principally due to diversification of EPZ exports towards South Africa and Madagascar, the prolongation of AGOA preferences and increasing productivity in the textiles and clothing sector.

As regards the employment performance indicator, the analysis showed that EPZ employment fell slightly after 2005, but this was not specific to the EPZ, as employment in the whole manufacturing sector was actually also falling during that same time period. However, employment for the rest of the economy was rising, which indicates diversification away from manufacturing.

A detailed look at the various product groups in the manufacturing sector showed that in terms of exports, apparel was by far the highest exporter in the EPZ sector but with very significant falls from 2003-2005 and with growth resuming after 2006. Jewellery came up as the second most

important product group as from 2005-2006. As far as total exports are concerned, the analysis showed an upward trend throughout the period 1995-2010, indicating that total exports seemed to be unaffected by the changes in the preference regimes, confining pre- and post-preference effects only to the EPZ sector.

As regards employment, apparel was also the biggest employer and the statistics showed an increasing trend until around 2002, but with a sudden drastic decrease from 2003 when we entered the third stage of the quota removal under ATC. In general, there was a fall in the textile sector and an even more significant decrease in the apparel sectors after MFA.

Next, a comparison of the exports of countries which had EPZs similar to that of Mauritius was carried out to provide a list of countries that have or will become direct competitors to Mauritius in the more deregulated global trading environment. A look at imports in the USA and EU, which are the two main markets for textiles and clothing, showed that China, Bangladesh, Sri Lanka and India exported more to the USA after 2005, while Mauritius and other African countries experienced a fall in exports to the USA after 2004. A similar trend was observed as far as imports into the EU were concerned.

To analyse in more detail the real impact of the removal of preferences, difference-in-difference estimates were used, which compare the changes in the textile and apparel sectors with other sectors. The results show that the removal of preferences did have an impact on the textile and apparel sectors, but the negative effect was less than expected. Therefore, contrary to existing perspectives, Mauritius did not suffer major losses from the phasing out of the MFA. This was principally a result of the diversification of exports towards non-EU markets.

Mauritius also moved towards niche products with a new emphasis on quality and high-end products, as proponents of endogenous growth theory would predict. In fact, the period 2006-2008 saw the revival of the textile and apparel sectors in Mauritius, characterised by innovation in ideas, in R&D and high-quality products which had a significant influence on the growth of the sector. Mauritius was now in line with Romer's endogenous growth theory, which focuses on ideas and technology. In Mauritius the initial stage of EPZ industrialisation involved only labour-intensive, low-skill firms with little requirement for technology support systems (Gray, 1995). During the

1990s, Mauritius upgraded its activities with the use of more capital-intensive tools such as knitting, which makes use of machinery. With liberalisation and the phasing out of preferential arrangements and the emergence of new low-cost producers in India and China, the competitiveness of Mauritius was tested despite the growth in capital intensity during the 1990s. As Gray (1995) argues, it is no longer just access to labour and acquisition of machinery that are important determinants of competitiveness; know-how has become critical. To be competitive, Mauritian firms need to know how best to adapt technologies to the local environment and to find new ways of improving product quality and design. In an interview in the *Mauritius Times* newspaper (2008), Romer states that the easiest way to improve quality is to copy ideas from the rest of the world, which will give Mauritius an advantage by facilitating catch up without having to work through the technology all over again. But he was quick to point out that to do this Mauritius would need a world-class education system that would significantly improve the country's human capital levels. Local companies are very well aware that their future success depends on how they adapt to new technologies and some are already implementing changes. The future of the Mauritian Textile and Clothing (T&C) lies in investment in technology and human capital that would give workers the capacity to manage new machines that will produce the luxury goods which would give Mauritius an edge over its competitors.

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CHAPTER 6

CONCLUSION

6.1 Introduction

The primary research question posed by the thesis was: “**What was the contribution of the Export Processing Zone (EPZ) to the economic growth of Mauritius?**” To do this, after the introductory chapter 1, chapter 2 identified the political economy factors that contributed to the successful creation of the EPZ in Mauritius. Chapter 3 provided an overview of the contribution of EPZ to GDP prior to and during the take-off phase. It also sought to identify the trade theory most suited to explain the EPZ story of Mauritius. Using the identified trade theory, the possible factors contributing to the success of the Mauritius EPZ, which made Mauritius an exception in Africa, were identified. In chapter 4, cross-country data from EPZ and non-EPZ countries were used to investigate empirically whether EPZ on its own was a guarantee for success, or whether success was determined by other factors. Chapter 5 looked at the impact of the removal of preferences on the EPZ sector in Mauritius and how the sector is coping with the changes in the international environment.

6.2 Findings

This section brings together the main findings of the study. The findings are chapter-specific and will be synthesised by providing answers to the five main research sub-questions of the thesis. They are:

(i) What are the political economy factors that created the enabling environment for the creation of the successful EPZ in Mauritius?

In Chapter 2 the political economy factors which facilitated the creation of the EPZ in Mauritius were identified based on previous studies and recent literature. These factors are inclusive institutions (prior to and after independence), ideas, luck, leadership, a dual-track economic strategy, ethnic diversity and ethnic ties to other continents and compromises around vested interests. All these factors contributed to the unique framework within which the Mauritius EPZ was created. All the factors had their own weight, though some were more important than others. It was found that at a very early stage the government decided to deal with demands from its constituents by moving towards inclusive political institutions where, instead of power being vested in a narrow group, the government would encourage a broad coalition of many groups to

share power. The inclusive institutions of democracy, a British-style parliament and a constitution which emphasised the protection of property rights provided a guarantee that there would be no expropriation of the Franco-Mauritians' sugar plantations. This helped in securing the support of colonial elites.

This strategy also made it possible for Mauritius to promote new elites without having to adopt the concept of 'creative destruction', as the sugar plantation elites kept their privileges, while newcomers benefited from the advantages offered by the ISI and EPZ. This led to an increase in the number and ethnic composition of the elites. One could also see that the protection of vested interests played an important role in determining the strategy of Mauritius to move to adopting the EPZ. As a result of its design, the development of the EPZ was made compatible with the interests of the ruling elites.

Thus, EPZs are not as ideal an economic solution as full liberalisation, but they can help in that they take political considerations into account. The presence of democratic institutions in Mauritius were vital as they pushed elites into a compromise solution without which the country could probably have been stuck with only sugar exports and ISI.

(ii) What was the contribution of EPZ to the country's economy at the time of take-off?

Chapter 3 showed that the growth of the Mauritian economy during the period 1983-1990 was found to be driven strongly by growth in the EPZ sector. The average EPZ growth for the period was 19.2% of GDP, while that of the sugar sector was at -1.3% of GDP. Also, the evolution of growth in the EPZ, the sugar sector and the GDP growth at constant prices of the Mauritian economy for the same period showed that growth rates in the EPZ sector and GDP growth were positive throughout the period, and EPZ growth rates were consistently higher than the GDP growth rates until 1989, meaning that the EPZ contribution to economic growth was strengthening during that period.

EPZ as a percentage of GDP also grew steadily and more than doubled in three years (1983-1986). Between 1976 (when the EPZ was still in its infancy) and 1983 (when the EPZ can be said to have taken off), total exports of goods and services more than doubled from Rs 2,705 million to reach

Rs 5,953. This also gave an indication that the EPZ made an increasingly important contribution to total exports.

Finally, it was noted that EPZ exports soared in 1987 with a threefold increase over 1984, surpassing sugar. As a percentage of total export earnings, the EPZ sector accounted for 56.0% in 1987 and more than two thirds of total exports in 1997. This confirmed the boom in EPZ exports and the fact that the EPZ sector at take-off was contributing significantly to GDP and to exports.

(iii) Which trade theory best explains the EPZ take-off in Mauritius?

In Chapter 3, the neoclassical and new trade theories were reviewed to find out which one of them was more appropriate to explain the factors behind the success of EPZ in Mauritius.

The H-O model stipulates that a country will produce and export only those goods which intensively use the factor of production with which it is relatively well-endowed. In terms of this model, Mauritius would to this day have only two sectors in which the country has a comparative advantage (i.e. sugarcane plantations, which make use of the abundant agricultural labourers, and perhaps the tourism sector, for which the country had good potential) and would be importing those products in which it did not have a comparative edge, in this case manufactured goods from the USA and EU.

However, in practical terms the H-O model did not seem to fit the Mauritian reality during the 1970s, as foreign investors seemed to show a lot of interests in the new EPZ, where employment was expanding rapidly, but not at the expense of the sugar sector.

Also, the growth in the EPZ did not cause any distortion to the sugar sector, which continued to experience sustained growth throughout the period. In fact, the increase in employment in EPZ did not lead to an automatic decrease in employment in the sugar sector, principally because the EPZ was targeting more school leavers, in particular the first batch of girls who had benefited from free education at secondary level since 1976.

As regards real GDP growth, it remained positive throughout the period, which showed that there was no drastic fall in national income at international prices, as asserted by the Hamada model.

Given that the H-O model is unable to explain the Mauritius EPZ story, an alternative trade theory was tested to see whether it would be more suitable to account for what happened in Mauritius. The new trade theory proposed by Krugman and Venables (1995), with its emphasis on transport and wage costs, seemed to fit the Mauritius EPZ story better. Geography is central to the theory developed by Krugman and Venables (1995). It includes transport costs; the inclusion of transport costs in international trade theories contrasts with the H-O model which assumed that transportation was costless.

The Krugman/Venables model also stresses the fact that increasing returns create economies of scale, and the consequences of the scale economies and the assumption of labour immobility will lead to goods being produced in specific locations. And if cost of production is assumed to be the same in all countries, then the decisive factor in location is transport costs. With increasing returns, the assumption of common wages also needs to be relaxed, meaning that wage differentials will also be a determining factor for location. Thus the Krugman and Venables model clearly incorporates the effects of transport costs and wages on the gains from trade.

Although, with limited data on transport costs, we have been unable to conclusively provide evidence that falling transport costs contributed to the success of the EPZ, stronger evidence has been provided of the role played by low wages in the EPZ take-off.

To see whether the low wages factor was causal in the success of EPZ in Mauritius, a comparison was made of the wages in Mauritius with those in other African and Asian countries that had operational EPZs in the 1980s – namely, Egypt, Liberia, Mauritius, Morocco, Senegal, Togo, Tunisia, Bangladesh, Hong Kong, Philippines, Malaysia, Sri Lanka and Singapore. Wages per day (in US dollars) in manufacturing during the period 1981 to 1987 in these countries was used. The results showed that Mauritius was the third cheapest location, overtaken only by Sri Lanka and Bangladesh which, it should be noted, did not benefit from the preferences that Mauritius received under the Lomé II Convention (after 1980). On the other hand, Egypt also had the same preferences and an EPZ, but their wage rates were much higher. For instance, for the years 1982-1985 immediately preceding and following the EPZ take-off in Mauritius, the average wage for that period in Mauritius was 2.45 USD/day compared to 4.70 USD/day in Egypt.

In trade theory terms it is therefore clear that the successful implementation of the EPZ was much more the result of factors identified by the new trade theory of Krugman and Venables than relative factor endowments in terms of the H-O theory. The weight of the factor, i.e. low wages in the EPZ take-off, was significant but the success would not have taken on such proportions if Mauritius did not use the preferential access that Mauritius had to the EU and US markets through the Lomé Convention in a timely manner. It is important to highlight that all of this would not have been possible if Mauritius did not possess the political economy factors identified earlier, which were probably unique to Mauritius and which provided the integrated framework on which the EPZ evolved.

(iv) What is the association between EPZ and success?

Chapter 4 demonstrated that from a general perspective, countries that had an EPZ seemed to be more successful. The empirical analysis undertaken here sought to shed light on the direction of this association: is it the adoption of EPZs that lead to success, or does economic success lead to the adoption of EPZs, or are there other contributing factors to success? First of all, the probit results indicated that those countries that would adopt the EPZ within the next five years were already performing well in terms of exports and political democracy, and they were competitive in terms of income per worker and purchasing power parity (PPP).

From the OLS it was found that EPZ (t+5) and (t+10) were associated with success in terms of the success measure rate of manufacturing exports to GDP (x/GDP), but success was also seen to depend quite significantly on $\log(\ln)$ income per worker, which is used as a proxy for wages and TFP. Also, when the political stability index is added to the equation, it has no effect on the EPZ coefficients. The OLS results suggest that EPZ was associated with success of countries measured in terms of x/GDP . However, from the various control factors that could have also been associated with success, $\ln$ income per worker and TFP are also seen to have been major determining factors.

When we controlled for selection of countries into the sample to see whether the results obtained from the 80 countries are different from those of the sample limited to 38 countries, the results showed that EPZ (t+10) is significant for both 80 countries and 38 countries using the success measure x/GDP , while there does not seem to be any significant EPZs for either the 80 or the 38 countries for the alternative measure of success, showing that the coefficients are not very different

between the broad 80 countries and the sample of 38. This leads to the conclusion that there may not have been a selection bias in choosing the 38 out of the 80 countries.

From the OLS estimates, the probability of EPZ (especially EPZ (t+10)) affecting x/GDP seems to be significant with a very high coefficient. However, the probit results indicate that EPZ may be endogenous and thus related to factors such as Predisposition to Exports, Political Democracy, Income per Worker and PPP. Even though EPZ (t+10) was treated as an independent variable, it is known that it may be a function of other factors and its coefficients may be biased.

To test this, a two-stage least squares (2SLS) estimator was used. The first stage uses x/GDP, EPZ (t+10) and the usual control variables, namely Ln Income per Worker, Political Democracy Index, Lomé, TFP and PPP. The second step uses the same variable but with the addition of Sino Population (the term used in Mauritius for the population group whose descendants came from China) of >1% of total population for each country. The reason for the addition of the Sino Population is that in the success stories of many EPZ countries, especially in Africa, it seems that most of the initial investments and groundwork was done by the Chinese immigrants who maintained diaspora links with China. The instrument Sino Population may thus have an effect on EPZ but not on the success measures x/GDP and growth. With the result obtained, the null hypothesis could be rejected that EPZ is exogenous and it could be confirmed that the EPZ is endogenous and its coefficient biased. The 2SLS results indicated that EPZ was itself endogenously determined by other factors, which may have biased upwards its influence on success.

To analyse whether there is a real difference in the success measures with and without an EPZ, all 80 countries were taken and divided into 2 groups; the first 40 are those countries that had an average value greater than or equal to 0.85% for x/GDP measure of success and the second group are those countries with an average value x/GDP less than 0.85%. A similar exercise was done for the alternative measure of success, i.e. growth rates of real GDP, with the first group consisting of those countries that had an average growth rate of 2.18% or higher. The results for both success measures indicated that 17 out of 33 countries that had EPZ were in the first group of successful countries, while the remaining 16 were in the second group of less successful countries for both success measures. This raised serious questions about whether EPZs in themselves had any real impact on the economic success achieved by individual countries.

Finally, considering the types of EPZ zones and whether one type was yielding better results than another, it was found that countries that provided more facilities were not necessarily more successful in terms of our measure of success, i.e. ratio of x/GDP . The incentives appear to act more as a facilitator for the establishment and smooth running of the EPZs rather than being causal in the success of EPZs. Similar results were obtained with the types of EPZ incentives compared.

The empirical results confirmed that there is no general association between EPZ and success. But this should not stop one from thinking about possible scenarios regarding the effect of EPZ on success. The first scenario, which was confirmed by the probit results, is that those countries that were successful and had an EPZ would have experienced some success anyway – with or without an EPZ. The second is the possibility that EPZs were adopted by countries that were already set up for success but EPZs nevertheless contributed in some way to the scale of success. Though the empirical results do not show an association between EPZ implementation and success, the question remains as to whether Mauritius would have been as successful as it has been if it had not adopted the EPZ. To attempt a response to this question, a further study may be needed on the relationship between only those countries that implemented an EPZ effectively and success.

(v) How did the removal of preferences affect the Mauritian EPZ?

In Chapter 5, it is noted that with the creation of the WTO and the complete removal of preferences, the future of the Mauritian EPZ, in particular the textiles and clothing sector (which constitutes the bulk of EPZ exports), seemed very uncertain. Most studies related to the removal of preferences on textiles and clothing generally reveal welfare losses for countries such as Mauritius. Chapter 5 analysed the evolution of the Mauritian manufacturing sector and its various product groups during and after the removal of preferences to see whether there was in fact a sudden fall in exports and employment (the two performance indicators), and whether that fall was specific to textile and clothing products once the preferences were removed.

Starting with the EPZ's export performance, the analysis showed that Mauritius EPZ exports to the EU did not seem to have been affected by the removal of preferences. However, exports to North America decreased systematically after 2002. As far as total EPZ exports are concerned, the data reveal a slight fall from 2000-2006 but a steady increase after 2006 principally due to the

diversification of EPZ exports towards South Africa and Madagascar, the prolongation of AGOA preferences and increasing productivity in the textiles and clothing sector.

As regards the employment performance indicator, the analysis showed that EPZ employment fell slightly after 2005, but this was not specific to the EPZ as employment in the whole manufacturing sector was actually also falling during that same period. However, employment for the rest of the economy was rising, which indicates diversification away from manufacturing.

A detailed look at the various product groups in the manufacturing sector showed that in terms of exports, Apparel was by far the highest exporter in the EPZ sector, but with very significant falls from 2003-2005 and growth resuming after 2006. Jewellery also came up as the second most important product group as from 2005-2006. As far as total exports are concerned, the analysis showed an upward trend throughout the period 1995-2010, indicating that total exports seemed to be unaffected by the changes in the preference regimes, confining pre- and post-preference effects only to the EPZ sector.

As regards employment, Apparel was also the biggest employer and the statistics showed an increasing trend until around 2002, but with a sudden drastic decrease as from 2003, the beginning of the third stage of the quota removal under ATC. In general, there was a fall in the textile sector and an even more significant decrease in the apparel sector after MFA.

Next, a comparison of countries' exports which had EPZs similar to those of Mauritius was carried out to provide us with a list of countries that have or will become direct competitors to Mauritius in the more deregulated global trading environment. A look at imports into the USA and EU, which are the two main markets for textiles and clothing, showed that China, Bangladesh, Sri Lanka and India exported more to the USA after 2005, while Mauritius and other African countries experienced a fall in exports to the USA after 2004. A similar trend was observed as far as imports by the EU were concerned.

To analyse in more detail the real impact of the removal of preferences, difference-in-difference (DID) estimates were used, which compare changes in textiles and apparel sectors with other sectors. The results show that the removal of preferences had an impact on the textile and apparel

sectors, but the negative effect was less than some might have expected. Although regression analysis confirms that the DID results showed a fall in exports of 27.2%, which was significant for the textiles and apparel group, it is still maintained that contrary to existing perspectives, Mauritius did not suffer major losses from the phasing out of the MFA. This was principally achieved through the diversification of the exports to non-EU markets which, when taken into consideration, shows the fall in exports to be 22.3%.

6.3 Contribution to Knowledge

Previous studies have identified some of the factors contributing to Mauritius' EPZ success, but they have not provided a theoretical framework within which all the factors contribute to a unique framework underpinning success. The approach used in chapter 2 brings together all existing explanations and assesses their contribution towards an integrated political economy framework that can explain the success of the EPZ. Thus, though factors have been recognised – such as inclusive institutions, ideas, luck, leadership, dual-track economic strategy and ethnic diversity – in the choice of creating an EPZ in Mauritius, there was also a strong component of compromise-based politics that entered into the Mauritius equation which guided the decisions of the government. In this way a more comprehensive political economy explanation for the EPZ successes achieved in Mauritius has been provided.

In Chapter 3 it was noted that previous analyses of Mauritius's EPZ did not investigate trade theories to see how they could actually be used to explain the success of the EPZ in Mauritius. The chapter contributed towards filling this gap by providing an assessment of the neoclassical and new trade theories to see if they could be useful in explaining the factors behind the EPZ take-off in Mauritius. It was concluded that the Krugman and Venables theory, which falls within the new trade theory approach, is more appropriate for the task of explaining the Mauritius EPZ and its determinant factors, in particular labour costs.

On the basis of the approaches employed in Chapter 4, it seems that although those countries adopting an EPZ tend to be globally more successful in terms of two success measures – x/GDP and growth rates – a more in-depth analysis shows that this hypothesis cannot be proved statistically, and adopting an EPZ does not necessarily lead to the general effect of bringing success to a country.

In Chapter 5 it was shown that existing literature on the effects of the MFA phase-out generally acknowledges net welfare losses for countries such as Mauritius to the benefit of China and India. They also stress that exports will definitely be affected, while effects on employment will be minimal. Although the results show without any doubt that removal of preferences did have an impact, the negative effect on the performance indicators was less than expected. The contribution of this chapter to the existing literature is that it shows that Mauritius's losses after MFA were actually quite small. Exports remained at satisfactory levels for two main reasons – namely, diversification of exports towards non-EU markets, and the emphasis on niche products targeting the high-end market.

Most analyses of the EPZ story in Mauritius have a tendency to link the EPZ with success. But, as indicated above, the fact is that the empirical evidence does not show a direct association between EPZ and success. What is clear, however, is that the success of Mauritius can be explained because the country had an inclusive political economy framework at the time of the creation of the EPZ – it had cheap labour and made optimal use of the preferences at the right time. The country was also able to diversify and develop resilience after the preferences had been removed, as there was no significant negative impact on the textile and clothing sector in Mauritius, which to date remains one of the most important contributors to Mauritius's GDP.

To draw lessons from the success of the Mauritius EPZ, it is therefore necessary to take all the factors explored within this thesis into consideration within a broad framework. The thesis shows that, while EPZs can make a vital contribution to economic success and produce positive development outcomes, they are not 'silver bullets', able to generate positive outcomes regardless of the context in which they are implemented.

6.4 Recommendations

To create a successful EPZ it is absolutely indispensable to have the necessary political economy factors that will produce an environment conducive to the evolution of an EPZ. It is also clear that vested interests were strongly present in Mauritius, but luckily the pursuit of these interests was accommodated in such a way that other sections of the population were not left out in the process. The core recommendation of the political economy chapter is that it is normal for vested interests to exist. However, in the process of bringing change one should ensure that the vested interests of

the current political elite are taken into account, while, at the same time, building opportunities for others to move up the income ladder and expand the size and diversity of the elite. This is the only way that will ensure a peaceful and productive transition.

The importance of inclusive political and economic institutions on which the foundation of any EPZ rests should also be present and functioning before a decision to create an EPZ is taken. Although one can argue that even without inclusive institutions, which is the basis for a democratic society, countries like China have been able to successfully adopt the EPZ concept. It can be said that the issue is that within a democratic dispensation it is more likely that an EPZ will be pursued effectively, because it becomes a way to include members of the electorate without directly challenging entrenched interests. Thus, when all the political economy factors analysed in Chapter 2 are in place, then only can we look at how to use the advantages that the country has to offer to try and obtain a competitive edge over others. Africa has a lot of reason to be optimistic, as many countries on the continent have the necessary human resources and relatively cheap labour to get into the textile and clothing industry productively. However, first they must ‘get their house in order’ by making sure that they have the right institutions, which could provide the political economy framework within which the industry can evolve.

What does the future hold for the textile and apparel industry in Mauritius? In line with the findings of Chapter 5, it can be noted that human capital and technology have helped to mitigate the impacts of the removal of preferences. Now the government needs to develop these trends further. The government of Mauritius has embarked on an ambitious project with the objective of building a knowledge hub. The first step was the creation of a separate Ministry for Tertiary Education, whose function is, *inter alia*, to attract the best universities to open antenna campuses in Mauritius.

As a first option, Mauritius should focus on the areas where its universities could provide courses best suited for the needs of Mauritius. It is highly recommended that with a view to increase the competitiveness of the Mauritian labour forces, the government should continue to support higher education in Mauritius and provide incentives for students to enrol in advanced courses. The country should be able to produce high-quality graduates within the next ten years, if it is to compete effectively with countries such as India and China, and if it is to remain in the business of exporting its textiles and apparel. In this highly liberalised world, suppliers will now look for high-quality products. To give Mauritius a competitive edge, now that it is no longer in the low-

cost producers group, the country needs highly qualified middle- and top-level cadres in the Mauritian apparel industry, whose daily activities will be to focus on innovative ideas to give the industry an edge. If this is to happen, Mauritius will then have the ability to develop textile and apparel companies employing the latest technologies with a pool of well-paid professionals running these companies. At the same time, of course, new, skills intensive export opportunities could open up if Mauritius continues on this course.

The second option for Mauritius is to do away with the traditional markets and focus much more on countries in the region. There has been a move in recent years to export to non-EU and some African markets. But Mauritius needs to display more initiative and adopt a more proactive approach to the emerging African markets. More market research needs to be channelled towards the Eastern and Southern African markets. By virtue of its membership to the SADC, Mauritius should tap the opportunities offered by these markets. The Mauritius government and private sector should consider these markets that still have cheap labour where infrastructure and the political economy factors are still lacking, before the Chinese hegemony becomes firmly established. The country has a long experience in Export Processing Zones, its own EPZ has been in operation for 43 years, which very few countries in Africa can claim to rival. Mauritius has the capacity to provide high-quality products to the growing African middle class as well as guidance on how to put in place the necessary political economy factors essential to create confidence among investors. Mauritius should also be able to provide consultancy services to put in place the necessary transport and communications infrastructure essential for the setting up of manufacturing businesses for the textiles sector in African countries. Mauritius can thus become a hub for high-value products into Africa. Mauritius may also look towards the Eastern European markets, which are providing a lot of incentives for outside countries to penetrate their markets now that the Eurozone is in financial difficulty. Rather than seeing the Euro crisis as a threat, Mauritius should seize the opportunity to enter the Eastern European region, whose doors are now wide open to investors from Africa.

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