

“Does learning by importing, self selection of markets and financial innovation matter for exporting firms in special economic zones?”

AUTHORS

Vanessa T. Tang

ARTICLE INFO

Vanessa T. Tang (2015). Does learning by importing, self selection of markets and financial innovation matter for exporting firms in special economic zones?. *Investment Management and Financial Innovations*, 12(1-1), 198-206

RELEASED ON

Tuesday, 07 April 2015

JOURNAL

"Investment Management and Financial Innovations"

FOUNDER

LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

© The author(s) 2026. This publication is an open access article.

Vanessa T. Tang (South Africa)

Does learning by importing, self selection of markets and financial innovation matter for exporting firms in special economic zones?

Abstract

Throughout the world, the establishment of special economic zones (SEZs) has found support among many developing countries. However, few African SEZs have proved successful. It is generally acknowledged that Mauritian SEZs are a model for success, particularly in terms of export diversification and integration into the Global Clothing Value Chains (GCVC). The contribution of this paper is to first examine the Mauritian export diversification policy experience, and for the first time, considers the test of three hypotheses – learning-by-importing, self-selection of markets and financial innovation using two firm-level survey data sets for a pooled sample and inter-firm comparison of exporters operating in the Mauritian clothing and textiles sector. Overall the regression results provide evidence to support two of the three hypotheses in that what primarily matters for performance are the use and productive inputs of labor and imported intermediate inputs consistent with learning-by-importing and the financial innovation capabilities of firms. From a policy perspective, the empirical findings of this study suggest that more careful attention should be paid to the type and allocation of public incentives to boost export performance. Policies that facilitate imported inputs and financial credit can make domestic firms more competitive and better integrated within the global markets.

Keywords: diversification, global value chains, learning-by-importing, innovation, self-selection, special economic zones.

JEL Classification: F10, F14, D21, D24, O55.

Introduction

In the past four decades, there has been a significant change in the international trade structure of developing countries. In the early 1980s, many developing countries (especially those in East Asia) began to significantly increase manufactured exports. By the end of the 1990s, around eighty per cent of exports from developing countries were manufactured goods (Martin, 2003). Collectively, developing countries exports can thus no longer be classified as being primary commodity dependent.

Yet, in Africa, many of the region's countries trade are as dependent on primary commodities today as they were in the 1960s (Farfan, 2005; Jerome and Wohlmuth, 2007). Twenty seven of the 47 countries in Sub Saharan Africa (SSA) are considered primary commodity dependent (Babatunde, 2009). Additionally, in considering Africa's exports and investment trends, Africa's (excluding South Africa) share of both world exports and foreign direct investment inflows remain low at around three per cent (UNCTAD, 2012). The SSA region rich in natural and human resources is still the economically poorest region in the world, with striking growth divergences. Mauritius is an outlier in the region. Despite being a small island economy, it is often hailed as a model for others as it has experienced sustained economic growth over the past three decades (Subramanian and Roy, 2003; Sacerdoti et al., 2005).

Since 1980, Mauritius' real GDP growth has averaged more than five per cent and per capita GDP of Mauritius is currently above US\$16000 (based on purchasing power parity).

Since 2000, the World Economic Forum Africa Competitiveness Reports have ranked Mauritius as one of the top four competitive economies in Africa. And recently, according to the World Bank Africa Competitiveness Report 2013, the country is the second most competitive nation in Africa.

In spite of Mauritius' "barren" natural resources, small domestic market and unfavorable geographic location in relation to major industrialized markets, the country has managed to surpass a number of resource-rich African countries. Geographically, "Mauritius fares the worst at about 25 per cent farther away from the world's economic center of gravity than the average African country and 30 per cent farther than the average developing country" (Subramanian and Roy, 2003, pp. 214-215). Despite this disadvantage, Mauritius has successfully diversified its once mono-crop economy into manufacturing, largely through the establishment of Special Economic Zones (SEZs). It should be noted that in creating the SEZs the government made a pragmatic decision to not geographically restrict these zones, offering investors a locational choice. This has also allowed for employment opportunities to be more evenly spread around the island (Rogerson, 1993, p. 191).

The concept of "zones" is a generic term variously defined in the literature and may take many forms. While popular terms that are used include industrial development zones, industrial free zones, free trade zones, export processing zones, special industrial free zones, spatial development corridors and

© Vanessa T. Tang, 2015.

Vanessa T. Tang, School of Accounting, Economics and Finance, University of KwaZulu-Natal, South Africa.

The author gratefully acknowledges the assistance of Enterprise Mauritius with the survey.

maquiladoras, a number of scholars such as Johansson (1994) and Bolle and Williams (2013) have noted that the general concept is basically the same in the way they function to facilitate trade. In this paper, a SEZ refers to an export area (which need not be insulated from the remainder of the country) strategically linked to a port or airport and supported by special fiscal and non-fiscal arrangements which are often different from those that apply in the rest of the country.

The general motivation for setting up such zones is to facilitate investment, create labor intensive jobs; boost exports and foster economic development. To enhance the attractiveness and encourage the key export-oriented focus of such zones, special arrangements (which may include laws) include duty free imports, free repatriation of profits, tax holidays, the provision of infrastructure and flexible labor laws.

Throughout the world, there are over 3500 zones and it is estimated that they account for over 66 million jobs (based on the most recent ILO data available) with a global value added trade of more than 500 billion US dollars (FIAS, 2008). Sub-Saharan Africa's share of the world's export zones is estimated at around 2.6 per cent and Asia's share is estimated at approximately a quarter (25.7 per cent)¹. World-wide, the zones have played an important role in the industrialization and economic development of both capitalist and socialist countries (Chen, 1994).

In Africa, according to Brautigam and Tang (2011), about 24 countries (including South Africa) have hosted various forms of SEZs. The development of such zones, are to a large extent a function of Southern Africa's distinctive political economy (Shaw and Fanta, 2013). African successes with the zones are unimpressive relative to the East Asian and Latin American countries (Tang, 2008). It is generally acknowledged however, that the Mauritian SEZs are a model for success, particularly in terms of export diversification and integration into the Global Clothing Value Chains (GCVCs)². Mauritius was the first country to establish SEZs in SSA set up by legislation in 1970 with the intended hope of attracting foreign investment and reducing the country's high unemployment and reliance on its mono-crop exports.

Today, SEZs have become a major part of the structure underpinning the global clothing commodity supply chains. One of the key

hypotheses of the commodity chains literature is that it is the 'type' of firms that drive a commodity chain (Gereffi, 1999). Thus, in the SEZs context, it is plausible that it is indeed the type of export-oriented firms and their behavior that drives the SEZs performance. The empirical section of this study therefore takes an endogenous dynamic approach to a better understanding of SEZs performance.

Recent studies such as Alvarez and Lopez (2005) have provided evidence in support of exporters' exhibiting superior characteristics with potential learning and self-selection effects. In the literature, while the idea that the more efficient firms tend to self-select in international markets and learn-by-exporting are generally well accepted, there is little support and evidence however regarding firms efficiency³ in relation to learning-by-importing and the importance of financial innovation in trade.

The contribution of this paper is to first examine the Mauritian export diversification policy experience, and for the first time, considers the test of three hypotheses – learning-by-importing, self-selection of markets and financial innovation using two firm-level survey data sets for a pooled sample and inter-firm comparison of exporters operating in the Mauritian clothing and textiles sector.

The remainder of this paper is organized as follows: Section 1 reviews Mauritius' export-led diversification strategy, while Section 2 contextualizes the SEZ and evaluates the merits and failings of this policy tool. Section 3 outlines the methodology and data used to assess the performance of firms operating in Mauritian SEZs. A discussion of the empirical results is presented in Section 4 and conclusions are drawn in the Final Section.

1. A review of the Mauritian export-led diversification strategy

Mauritius' experience of an export-led diversification strategy began soon after independence in 1968, when the country set out to diversify its economy with the establishment of SEZs. The Mauritian SEZ approach was simple: to provide a package of fiscal incentives, including tax holidays and credit rebates, the option to repatriate profits and duty exemption on imports in order to attract investors to shift their labor intensive activities to the Mauritian zones and produce for export. Interestingly, the incentives under the zones scheme occurred primarily in the textile-clothing industry, while the main engine of growth in Mauritius, sugar exports, was denied such incentives.

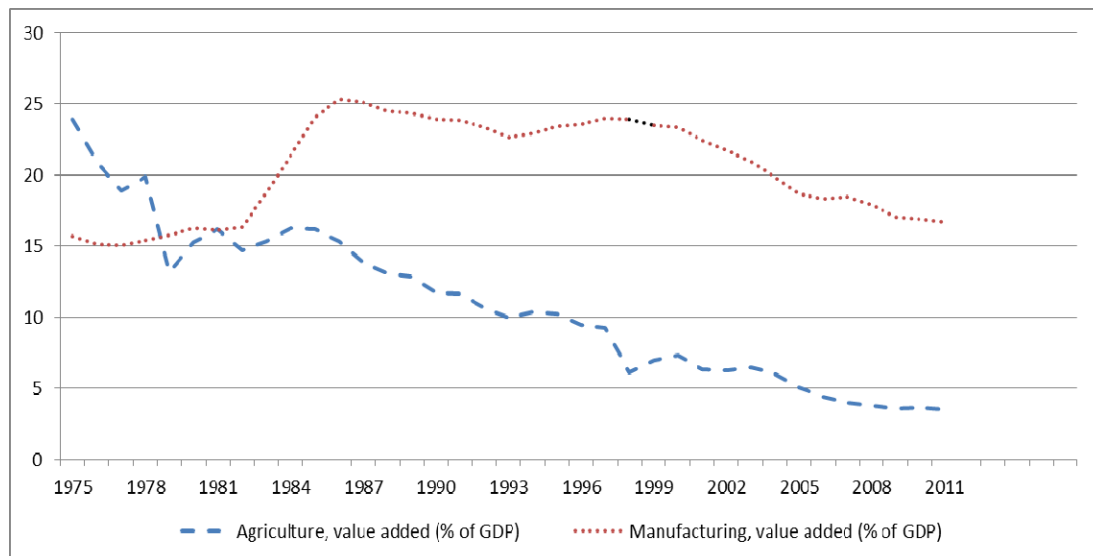
¹ ILO (2007). 'ILO Database on Export Processing Zones (Revised) in Boyenge Geneva', International Labor Organization, April 2007.

² Clothing exports from Sub-Saharan Africa to the European Union are largely dominated by Mauritius and the country remains among the top five Sub-Saharan African clothing exporters to the United States. See the interesting post-quota and post-crisis World Bank study by Staritz (2011) on the Global Clothing Value Chain.

³ Efficiency and performance are used interchangeably in this paper.

This strategy kicked off well and by 1977, 89 firms were operating in the SEZs compared with only nine firms in the first year of operation (Bheenick and Schapiro, 1991). However, despite an aggressive export-led diversification strategy, the Mauritian economy was in turmoil by the end of 1979 due to a series of external and internal misfortunes such as rising real exchange rate, a recession in industrialized countries, the oil crisis, local strikes and the negative effects of two bad cyclones. Thus, along with a number of other African countries, the early 1980s found the island economy in economic distress and adopting Structural Adjustment

Programs (SAPs) to stabilize the macro-economy, with trade liberalization and economic deregulation as their main policy pillars (UNECA and AUC, 2011). In the case of Mauritius, these include the adoption of “exchange rate policies, restrictive credit and monetary policies, reduction of fiscal deficits, reduction in consumer prices, wage restraints and liberal trade policies” (Sobhee and Bhown, 2007, p. 53). These policy prescriptions have arguably aided in transforming the country from an agro-based economy to a diversified industrialized economy as illustrated in Figure 1 below.



Source: Author's compilation based on UNCTAD (United Nations Conference on Trade and Development database, 2012).

Fig. 1. Agriculture vs manufacturing (contribution to GDP)

It should be noted and supported by Figure 1 above, that manufacturing through the Mauritian zones started to play a critical role in the domestic economy from 1980 (Sawkut, Vinesh and Sooraj, 2009). And in 1985, the manufacturing exports earnings in Mauritius surpassed its earnings from sugar exports for the first time (Bheenick and Schapiro, 1991). It is worthwhile noting that the country's exports have benefited from its preferential trading access to the European markets within the framework of the Lomé and Cotonou Conventions. The European Union (EU) as a bloc remains the country's long-standing major export partner.

It is worthwhile noting that Mauritius has recently taken the initiative to further develop its non-traditional exports, including fish and woven cotton fabrics. Today, unlike many of her African sisters, Mauritius is no longer dependent on a single crop for foreign exchange earnings and output growth. This diversification into both manufacturing and non-traditional commodities augurs well for the country as it is engaging in both vertical and horizontal export diversification (Bonaglia and Fukasaku, 2003; ECA, 2007).

2. The theoretical context for SEZs

SEZs have been established in the hope of stimulating economic development through accelerated industrial growth and generating employment. Over the years, the literature on SEZs has debated the merits and failings of this policy tool, using the neo-classical, cost-benefit and new growth theories. The first approach investigates the impact of SEZs within the confines of established theories of international trade such as the Hecksher-Ohlin and the Rybczynski theorem (for example, Hamada, 1974; Miyagiwa, 1986; and Devereux and Chen, 1995). The second approach focuses on determining the costs and benefits associated with the zones Warr (1983, 1984, 1987, 1989). The third and more recent approach, the new growth theory, seeks to emphasize the dynamic gains zones are likely to produce. Its proponents argue that the neo-classical approach did not consider the SEZs' spillages into the host nations' firms (Romer, 1993; Johansson and Nilsson, 1997). This section reviews each approach, points to their shortcomings and provides a synthesis of their ideas.

2.1. The neo-classical theory. The neo-classical framework draws largely from the Hecksher-Ohlin model with two goods, two factors and two countries as the constituents. Hamada's (1974) study was the first to assess the welfare implications of SEZs. He used the standard Hecksher-Ohlin framework where the capital intensive good is protected by a non-prohibitive import tariff. Hamada (1974) found that if a small country adopts a protectionist approach with regard to its capital intensive sector but has a comparative advantage in labor intensive industries this may create a welfare loss on the country. As contained in the Rybczynski theorem (Rybczynski, 1955), this stems from the withdrawal of labor from the domestic sector into the capital-intensive sector augmented by foreign direct investment (FDI) flowing into the SEZ. FDI inflows enhance and expand the production of the capital-intensive good at the expense of the labor intensive domestic good, resulting in aggravated distortions which can reduce national welfare. As such, the establishment of an SEZ may lead to specialization that runs contrary to the host country's real comparative advantage and thus negatively impact national well-being.

In contrast with Hamada's (1974) conclusions, Miyagiwa (1986) however, established that the creation of SEZs increases a country's well-being. His model is based on the premise that the government establishes an SEZ with the objective of diversifying the manufacturing sector and offers a subsidy to foreign firms for that purpose. It was constructed from three production factors – land, labor and capital – and three types of goods – food and two types of industrial goods. Miyagiwa (1986) shows, that, by luring FDI inflows that diversify production in the host country, the host nation can improve welfare by establishing an SEZ within the confines of the general theory of second best. This theory argues that if a previously existing distortion (a tariff) cannot be removed completely, the introduction of a countervailing distortion (a subsidy) might improve national welfare. Young and Miyagiwa (1987) reinforced this argument by introducing unemployment of the Harris-Todaro type. They established that the positive impact becomes more apparent and accentuated by adding unemployment into the mix. Thus, the formation of SEZs may be a sound second-best policy that improves national welfare. Similarly, Devereux and Chen (1995) expanded Hamada's (1974) analysis by adding volume of trade and factor terms of trade effects under the conjecture of a much wider variety of circumstances and showed that SEZs are likely to improve welfare more than previously realized. They add that the adoption of SEZs increases the likelihood of liberalization in a tariff regime and decreases the likelihood in a quota system.

The neo-classical analysis has been critiqued on several grounds. Firstly, it is based on the assumption of full employment while most developing countries have to deal with sometimes severe unemployment and underemployment (Madani, 1999). Secondly, the approach does not take into account the spill-overs from FDI in the economy which can be quite substantial depending on the structure of the economy (Johansson, 1994, p. 394). Thirdly, as Warr (1989) argues, the neo-classical approach draws heavily on the classical Hecksher-Ohlin model of production which fails to capture the international mobility of capital goods – which is central to the functioning of SEZs. Thus, he argues that the main conclusion of most of this literature – that SEZs decrease the welfare of countries – is at best irrelevant and at worst, flawed and based on inappropriately designed and defined models (Warr, 1989, p. 66).

2.2. The cost-benefit approach. The cost-benefit approach developed by Peter Warr (1983, 1984, 1987, 1989) estimates the costs and benefits associated with a zone existence. Warr's estimates of the zones aim to determine their net contribution for the host economy. Warr's evaluation results of surveys in the zones are rather mixed. While in South Korea there are large benefits for the host economy, in Indonesia and the Philippines the zones have little to offer. Warr's cost-benefit approach however has certain drawbacks, including the lack of adequate data and taking a static assumption that all market and 'shadow' prices are constant (Sawkut, Vinesh and Sooraj, 2009). In dealing with intangibles, the valuation of costs and benefits may not lend themselves for proper translation into prices. The inclusion of intangibles introduces significant problems as translating the non-quantitative realities into computable data and ultimately into monetary units is extremely cumbersome.

The cost-benefit method loses merit in the domain of public policy where intangibles and long term or multiple objectives are important considerations and also much depends on the subjective personal, political and cultural perspective of the translators (Baissac, 1996). Also, most of these objectives are difficult to quantify and thus, significant challenges confront the cost-benefit approach (Sawkut, Vinesh and Sooraj, 2009).

2.3. The new growth theory. The new growth theory, also termed the endogenous growth theory, incorporate economic issues such as the international distribution of consumption, innovation, and production. While orthodox theories mainly focused on the static aspects of economic activity – welfare outcomes – the new growth theory focuses on their dynamic aspects such as growth and industrial transition outcomes (Tyler and Negrete, 2009).

According to Baissac (1996, p. 50), trade-based approaches to the evaluation of SEZs have fared dismally in addressing issues such as the unrelenting demographic dynamism of these zones, the robust correlation between the use of zones and the development of efficacious export-led growth; and the economic successes of few less developed countries following their deployment of zones as a central component of their growth and development strategies.

In their criticism of the neo-classical approach to the assessment of the welfare effects of the SEZs, Johansson and Nilsson (1997) argued that this approach does not take into account the SEZs' spillages into the host nation's firms that occur in two main forms – human capital enhancement and demonstration and catalyst effects. Some scholars argue that these spillages are amplified if the host country pursues sound macroeconomic and realistic exchange rate policies (Romer, 1993; Alter, 1991). Human capital enhancement can occur on two fronts. The first is through the increased productivity of previously unskilled workers via job training and learning by doing at the supervisory level, with local employees becoming privy to new organizational and managerial methods, negotiation and marketing skills, general business know-how, foreign contacts and entrepreneurship. On the second front, this may occur through various catalyst and demonstration effects on the host economy (Rhee, 1990; Rhee and Belot, 1990). Together with the training of labor, technology transfer and the creation of linkages, these effects may be the zones' lasting contributions to the host country (Rhee and Belot, 1990; Madani, 1999). Thus, the neo-classical approach arguably omits many positive externalities and the potential gains emanating from SEZs (Johansson and Nilsson, 1997).

The new growth approach has also attracted criticism, although not to the same extent as the neo-classical and cost-benefit approaches. Madani (1999) argued that the benefits of skills acquisition are limited as most production processes are low-skilled and low-tech – a fact that the theory fails to appreciate. Furthermore, Cling, Rafafindrakoto and Roubaud (2005, p. 786) note that, spill-over effects and externalities are probably limited due to the SEZs' low level of integration with the local economy, the low skills of the labor employed, and the potential volatility of foreign investment. Nonetheless, the new growth theory has introduced a fresh perspective on SEZs by stressing the dynamic gains these zones are capable of producing.

3. Methodology and data

The empirical analysis of this study is based on the use of two firm-level survey data sets of firms operating in the Mauritian clothing and textiles sector. The primary survey data was gathered from an on-site research in Mauritius during three trips, in the months of December-January 2008, 2009 and 2010. A pilot study and interviews were carried out in 2008 with a set of questions that seek responses from owners/managers/accountants of the exporting firms on their business profile, employment, capital, trade and markets. The pilot study and interviews were useful as it indicated areas of limitations in data responses and the feedback received have led to reframing and more concise questions. A stratified survey sampling by size (Small Medium Enterprises (SMEs) and Large enterprises) was taken.

This stratified sampling is more representative of the population and reduces the likelihood of bias. In this respect, the survey also considers and addresses the measurement bias. In our pilot study, when one asks the owner of a firm "what is the Rupee value of your capital?" the measurement bias is high. However, when one asks the firm about their intermediate inputs; the answer received is more reasonable. Jones (2011) study has shown how intermediate inputs yield an output measure close to that of capital in the Solow growth model. In fact, considering that "intermediate goods are just another form of capital" (Jones, 2011, p. 2), the response on 'intermediate inputs' is thus set as the value of 'capital'.

To the end, much of the primary data were collected over the period December 2009-2010 with 75 per cent of survey respondents (out of a 100 sampling size relative to a total population of around 400 exporting firms). This is potentially representative of the 'population', with an approximate 32 per cent representation (a total of 75 observations gathered out of around 60 per cent of the total population surveyed). The empirical analysis of the survey was supplemented by relevant 'trade' and 'finance' enterprise data in garments for Mauritius, sourced from the 2009 World Bank Enterprise survey.

In Tables 1 and 2 we present some descriptive statistics regarding the size and age of firms surveyed.

Table 1. Firms size

Type	Size (%)
Small and Medium (0-50 employees)	53
Large (>51 employees)	47

Table 2. Firms age

Age	Youngest (yrs)	Oldest (yrs)
Small and Medium (0-50 employees)	1	30
Large (> 51 employees)	2	39

Assuming output (q) is produced by capital (k) and labor (l). We begin with the Cobb-Douglas production function, a widely acceptable two-input production function with the following specification:

$$q = f(K, L) = AK^\alpha L^\beta \cdot e^\varepsilon,$$

where q -our dependent variable is the value of output (value of sales), k is our proxy for the capital employed (value of intermediate inputs) and l is our proxy for labor (value of labor) by each firm in the sample. In fitting the Cobb-Douglas production function to the data, we use the production function in logarithmic form. Subsequently, we tested for our three hypotheses: learning-by-importing, self-selection of markets and financial innovation on a pooled and inter-firm sample using two multi production models with several explanatory variables namely firm size, age, factor inputs, market selection and financial innovation.

The size of the firm is measured by the number of people employed, and age in production is the accumulated experience proxied by the number of years in operation. Our measure for imported inputs is the ratio of 'material inputs and/or supplies of foreign origin' (42.2% of firms in garments surveyed used foreign inputs based on the World Bank Enterprise dataset) to the total value of intermediate inputs. The measure of the self-selection hypothesis is a dummy variable equal to one if the firm exported to 'Northern' markets. Our measure for financial innovation is backed up by the ratio of "working capital financed by supplier credit and/or banks" (29.9% of firms in garments used credit based on the World Bank Enterprise dataset) to the total value of inputs.

We tested for multicollinearity and hetero-scedasticity. Whilst the correlation analysis suggests the absence of multicollinearity, the White test revealed the presence of heteroscedasticity (we reject the null hypothesis of homoskedasticity at five per cent). Subsequently, we estimated the production functions using the feasible generalized least squares (GLS).

4. Empirical results and analysis

The inter-firm and pooled estimated results are presented in Table 3 and Table 4 respectively. The adjusted R^2 ranges 0.73 to 0.77. What is interesting in Table 3 is that for all three types of firms in the industry, the results show that what consistently matters for firm's performance are the use and productive inputs of labor and imported intermediate inputs consistent with learning-by-importing and financial innovation of firms.

It is also noted that relatively, it is the large firms that are more financially innovative and that the use

of imported inputs have a larger positive effects on the small and medium firms. It is also worth highlighting that while the estimated coefficients of factor inputs (imported capital and labor) are both highly significant and positive, labor's contribution to output is relatively larger than that of capital. This finding is reasonable given that this industry is generally more labor intensive. Nevertheless, it is worth pointing out that the firms in the zones seem to use a rather large share of working capital embodied in intermediate inputs. This "labor saving" scenario may suggest that production is moving "up-market".

On the other hand in Table 4, while the pooled results also provide evidence to support the learning-by importing and financial innovation theses, surprisingly, both the estimated coefficients of firm size and age are not significant but positive. It is well accepted that size is positively related to performance and thus for this industry, the size of firms is arguably not a major determinant of performance. However, it is acknowledged based on the relative results on size in Table 3, that an increase in size allows firms to exploit economies of scale in production and produce to the high standards of price, quality and delivery demanded by foreign buyers (Wignaraja, 2002). Age in production however shows no significance in both inter-firm and pooled results and, consistently a positive sign. At this juncture, it is worthwhile noting the possibility of a negative result on age which can be justified as according to Liu, Tsou and Wang (2010), the age of a firm can have two opposing effects on firm performance; besides the positive learning effect, there is the possibility of a negative backward compatibility in technology.

While it is well accepted that the self-selection of international markets can have a positive effect on firm's performance, however the results of this study do not support the positive relevance of the self-selection effects. The negative self-selection results of this study could be due to the level of sunk costs into the northern export markets.

To this end, perhaps the most important empirical finding is the significantly positive association between total factor inputs (the use of imported capital and labor) and the financial innovation of firms on efficiency. This observation potentially captures the expectations of the endogenous new growth theory. More specifically, we are referring to the concept and implications of "learning by doing" (Arrow, 1962) whereas in our model and those of Johansen (1959), Solow (1960) and Arrow (1962) learning is a "by-product" of production activities.

Table 3. Inter-firm regression results (dependent variable) – firms export performance

	Model one (small and medium)		Model two (large)	
	Coefficient	z-ratio	Coefficient	z-ratio
Constant	2.229218	12.16652***	2.338200	3.420863***
Imports	0.286426	20.47469***	0.233768	8.994931***
Labor	0.703015	38.31011***	0.748041	11.58534***
Size	-0.009099	-0.022480	0.014473	0.163445
Age	0.037396	1.759341	0.009001	0.174914
Mkt-Selection	-0.012755	-0.456263	-0.010717	-0.119850
Fin-Innovation	0.995424	37.50703***	1.056520	15.09965***
AR ²	0.77		0.73	
Observations	40		35	

Note: *Significant at 10 per cent **Significant at 5 per cent ***Significant at 1 per cent.

Table 4. Pooled regression results (dependent variable) – firms export performance

	Pooled model	
	Coefficient	z-ratio
Constant	2.220211	11.48437***
Imports	0.288502	29.17459***
Labor	0.700260	37.88237***
Size	0.009368	0.494052
Age	0.029971	1.690355
Mkt-Selection	-0.013375	-0.484361
Fin-Innovation	0.980453	38.85414***
AR ²	0.77	
Observations	75	

Notes: *Significant at 10 per cent. **Significant at 5 per cent. ***Significant at 1 per cent.

Conclusion

One of the most important policy issues confronting many African countries is how to successfully

diversify and industrialise their economies. Many countries have used SEZs as a policy tool to meet this challenge. While success stories of African SEZs are few, the establishment of SEZs hold merit, as in the case of Mauritius, in contributing to their diversification and growth. However, their implementation and special incentives alone will not be adequate to deliver higher value-added growth.

From a policy perspective, the findings of this study suggest that more careful attention should be paid to the type and allocation of public incentives to boost export performance. Policies that facilitate imported inputs and financial credit can make domestic firms more competitive and better integrated within the global markets. Future research should consider and measure the gains that accrue as intra-zones' trade increases.

References

- Alter, R. (1991). Lessons from the export processing zone in Mauritius, *Finance and Development*, 12 (91), pp. 7-9.
- Alvarez, R. and Lopez, R.A. (2005). Exporting and Performance: Evidence from Chilean Plants, *Canadian Journal of Economics*, 38 (4), pp. 1384-1400.
- Arrow, K.J. (1962). The Economic Implications of Learning by Doing, *The Review of Economic Studies*, 29 (3), pp. 155-173.
- Babatunde, M.A. (2009). Export Performance in Sub-Saharan Africa: An Explanation, *Journal of Economic Theory*, 3 (3), pp. 41-52.
- Baissac, C. (1996). A critique of cost-benefit analysis in the evaluation of export processing zones, *Journal of the Flagstaff Institute*, 11 (25), pp. 28-38.
- Bheenick, R. and Schapiro, O. (1991). The Mauritian Export Processing Zones, *Public Administration and Development*, 8 (3), pp. 263-267.
- Bolle, M.J. and Williams, B.J. (2013). U.S. Foreign-Trade zones: Background and Issues for Congress Research Service Report. Available at: <http://www.fas.org/sgp/crs/misc/R42686.pdf> [Accessed 6 February 2014].
- Bonaglia, F. and Fukasaku, K. (2003). Export Diversification in Low-Income Countries: An International Challenge after Doha. OECD Development Centre.
- Brautigam, D. and Tang, X. (2011). African Schenzen: China's Special Economic Zones in Africa, *Journal of Modern African Studies*, 49 (1), pp. 27-54.
- Chen, X. (1994). The Changing Roles of Free Economic Zones in Development: A Comparative Analysis of Capitalist and Socialist Cases in East Asia, *Studies in Comparative International Development*, 29 (3), pp. 3-25.
- Cling, J.P., Razafindrakoto, M. and Roubaud, F. (2005). Export processing zones in Madagascar: a success story under threat? *World Development Journal*, 33 (5), pp. 785-803.
- Devereux, J. and Chen, L. (1995). Export Zones and Welfare: Another Look, *Oxford Economic Papers*, 47 (4), pp. 704-713.

13. Economic Commission for Africa ECA. (2007). *Accelerating Africa's Development through Diversification*. United Nations Economic Commission for Africa, Addis Ababa, Ethiopia. Available at: <http://www.uneca.org/era2007/> [Accessed 3 May 2013].
14. Farfan, O. (2005). *Understanding and Escaping Commodity-Dependence: A Global Value Chain Perspective*. International Financial Corporation, the World Bank, Washington D.C. http://www.cggc.duke.edu/pdfs/093005_Farfan_Commodity_Dependency_Uma_WB.pdf [Accessed 3 May 2013].
15. FIAS (2008). *Special Economic Zone: Performance, Lessons Learned, and Implications for Zone Development*, The World Bank, Washington.
16. Gereffi, G. (1999). International Trade and Industrial Upgrading in the Apparel Commodity Chain, *Journal of International Economics*, 48 (1), pp. 37-70.
17. Hamada, K. (1974). An Economic Analysis of the Duty Free Zone, *Journal of International Economics*, 4 (3), pp. 225-241.
18. Jerome, A. and Wohlmuth, K. (2007). Nigeria's Commodity Dependence and Options for Diversification. An Introduction. In: Wohlmuth, K., Eboue, C., Gutowski, A., Jerome, A., Knedik, T., Meyn, M. and Mama, T. (Eds.) *Africa – Commodity Dependence, Resource Curse and Export Diversification*, *African Development Perspectives Yearbook*, Transaction Publishers London, pp. 199-251.
19. Johansen, L. (1959). Substitution vs Fixed Production Coefficients in the Theory of Economic Growth: A Synthesis, *Econometrica*, 27 (9), pp. 157-176.
20. Johansson, H.L. (1994). The Economics of Export Processing Zones Revisited, *Development Policy Review*, 12 (4), pp. 387-402.
21. Johansson, H.L. and Nilsson, L. (1997). Export Processing Zones as Catalysts, *World Development*, 25 (12), pp. 2115-2128.
22. Jones, C. (2011). Intermediate Goods and Weak Links in the Theory of Economic Development, *American Economic Journal*, 3 (2), pp. 1-28.
23. Liu, J.T., Tsou, M.W. and Wang, P. (2010). Workforce Composition and Firm Productivity: Evidence from Taiwan, *Economic Inquiry Journal*, 48 (4), pp. 1032-1047.
24. Madani, D. (1999). *A review of the role and impact of export processing zones*, World Bank Policy Research Paper, 2238, Washington, DC, World Bank.
25. Martin, W. (2003). Developing Countries' Changing Participation in World Trade, *The World Bank Research Observer*, 18 (2), pp. 187-203.
26. Miyagiwa, K.F. (1986). A reconsideration of the welfare economics of a free-trade zone, *Journal of International Economics*, 21 (3), pp. 337-350.
27. Rhee, Y.W. (1990). The catalyst model of development: lessons from Bangladesh's success with garment exports, *World Development*, 18 (2), pp. 333-346.
28. Rhee, Y.W. and Belot, T. (1990). *Export catalysts in low-income countries: A review of eleven success stories*, World Bank Discussion Papers 72, Washington, DC: World Bank.
29. Rogerson, C.M. (1993). Export Processing Industrialization in Mauritius: The Lessons of Success, *Development Southern Africa*, 10 (2), pp. 177-197.
30. Romer, P.M. (1993). Idea Gaps and Object Gaps in Economic Development, *Journal of Monetary Economics*, 32 (3), pp. 543-573.
31. Rybczynski, T.M. (1955). Factor endowment and relative commodity prices, *Economica*, 18 (2), pp. 336-341.
32. Sacerdoti, E., EL-Masry, G., Khandelwal, P. and Yao, Y. (2005). *Mauritius: Challenges of Sustained Growth*, International Monetary Fund, Washington, D.C.
33. Sawkut, R., Vinesh, S. and Sooraj, F. (2009). The net contribution of the Mauritian export processing zone using benefit – cost analysis, *Journal of International Development*, 21 (3), pp. 379-392.
34. Shaw, T.M. and Fanta, E. (2013). Introduction: Comparative Regionalisms for Development in the 21st Century: Insights from the Global South. In E. Fanta, T.M. Shaw and V.T. Tang (eds), *Comparative Regionalisms for Development in the 21st Century: Insights from the Global South*, Farnham: Ashgate, pp. 1-17.
35. Sobhee, S.K. and Bhowon, V. (2007). *Deepening Integration in SADC-Mauritius Achievements and Coming Challenges*, Gaborone, Frederic's Ebert Foundation.
36. Solow, R.M. (1960). Investment and Technical Progress. In: Arrow K.J., Karlin, S. and Suppes, P. (Eds.) *Mathematical Methods in the Social Sciences*, California: Stanford University Press, pp. 89-104.
37. Staritz, C. (2011). *Making the Cut? Low-Income Countries and the Global Clothing Value Chain in a Post-Quota and Post-Crisis World*, International Bank for Reconstruction and Development, World Bank, Washington, D.C.
38. Subramanian, A. and Roy, D. (2003). Who Can Explain the Mauritian Miracle? Meade, Romer, Sachs or Rodrik? In: Rodrik, D. (Ed.) *In Search of Prosperity: Analytic Narratives on Economic Growth*, New Jersey: Princeton University Press, pp. 205-243.
39. Tang, V. (2008). Zoning in on South Africa's Industrial Development Zones. TIPS AnnualForum October 2008 [Online] Available: <http://www.tips.org.za/publication/zoning-south-africas-industrial-development-zones>. [Accessed 12 June 2013].
40. Tyler, W.G. and Negrete, A.C.A. (2009). Economic growth and export processing zones: An empirical analysis of policies to cope with Dutch disease, *World Development*, 18 (2), pp. 220-241.

41. United Nations Economic Commission for Africa UNECA and African Union Commission AUC Economic Report on Africa (2011). *Economic Report on Africa 2011*, Addis Ababa: Economic Commission for Africa.
42. United Nations Conference on Trade and Development UNCTAD. (2012). *Statistical Database*. [Online], available at: <http://unctadstat.unctad.org/TableViewer/> [Accessed: 02 January 2013].
43. Wignaraja, G. (2002). Firm Size, Technological Capabilities and Market-oriented Policies in Mauritius, *Oxford Development Studies*, 30 (1), pp. 87-104.
44. Warr, P.G. (1983). The Jakarta export processing zone: benefits and costs, *Bulletin of Indonesian Economic Studies*, 19 (3), pp. 28-49.
45. Warr, P.G. (1984). Korea's Masan free export zone: benefits and costs, *The Developing Economies*, 22, pp. 169-185.
46. Warr, P.G. (1987). Export Promotion via Industrial Enclaves: The Philippines Bataan Export Processing Zone, *The Journal of Development Studies*, 23 (2), pp. 220-241.
47. Warr, P.G. (1989). Export Processing Zones: The Economics of Enclave Manufacturing, *World Bank Research Observer*, 4 (1), pp. 65-88.
48. Young, L. and Miyagiwa, K. (1987). Unemployment and the Formation of Duty-Free Zones, *Journal of Development Economics*, 26 (1), pp. 397-405.