COTE 2018

Dutch Disease and Premature Deindustrialization in Small Island Developing States (SIDS) with resource abundance

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Deindustrialization and Premature Deindustrialization

- Deindustrialization has been occurring in advanced economies whereby these countries experience a decline in manufacturing employment with no severe declines in their manufacturing output and an increase in their standards of living.(Rowthorn and Ramaswamy, 1997; Sachs, Shatz Deardoff and Hall, 1994; Saeger, 1997; Škuflić and Družić, 2016).
- For middle and low income developing countries, there has been a decline in both manufacturing employment and output. This occurrence has been demarcated as premature deindustrialization by Rodrik (2015) which increases the chances for income equality amongst countries (Hamid and Khan, 2015).
- Empirical evidence has revealed that premature deindustrialization has been occurring in countries such Brazil, Mexico, India, Pakistan, countries in Sub-Saharan Africa (excluding Mauritius) and Latin American countries (Kahkonen, 2014; Chaudhari, 2015; Hamid and Khan, 2015; Rodrik 2015; Gabrowski, 2017).
- However, limited literature exists on the impact of premature deindustrialization and Small Island Developing States (SIDS).

Effects of Premature Deindustrialization

Economic implications of premature deindustrialization were found to be

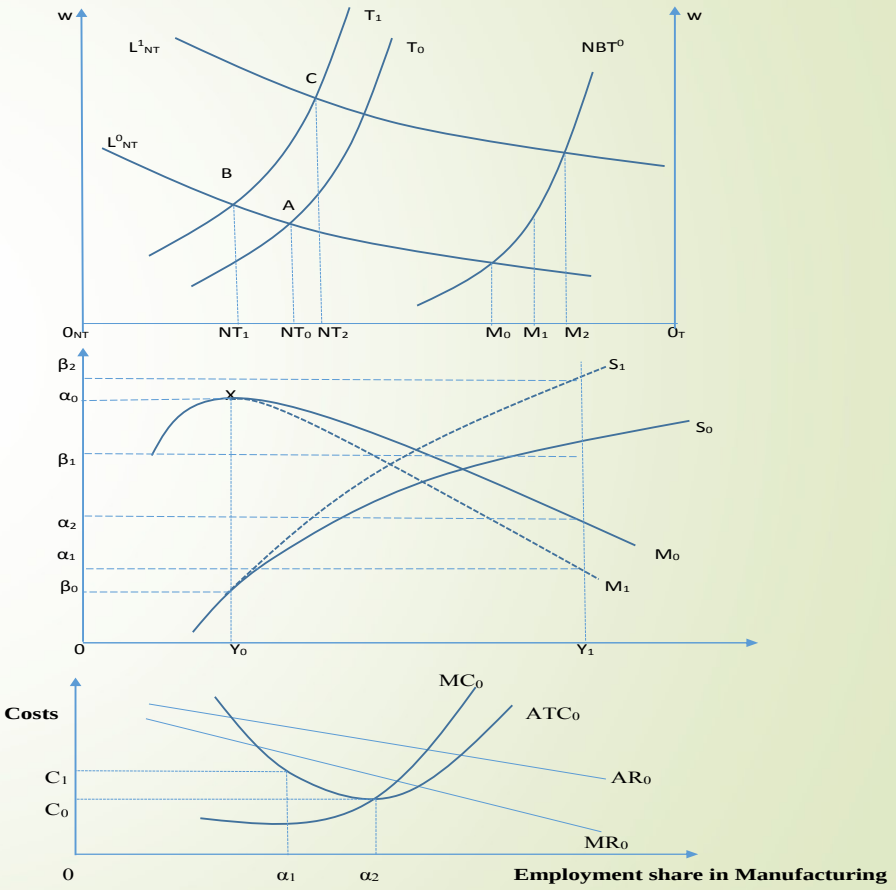
- over-valued exchange rates
- which can lead to foreign currency shortages and rationing
- inequitable distribution of income
- high interest rates
- enlarged informal sector
- overall economic stagnation
- limited prospects to propel growth as less investment is made in the manufacturing sector and development ends prematurely

Dutch Disease and Premature Deindustrialization

- A small open economy with a Tradable Sector (T) comprising of Booming Tradable Sector (BT) and a Non-Booming Tradable sector (NBT)and a Non-traded sector (NT).

- Panel 1:

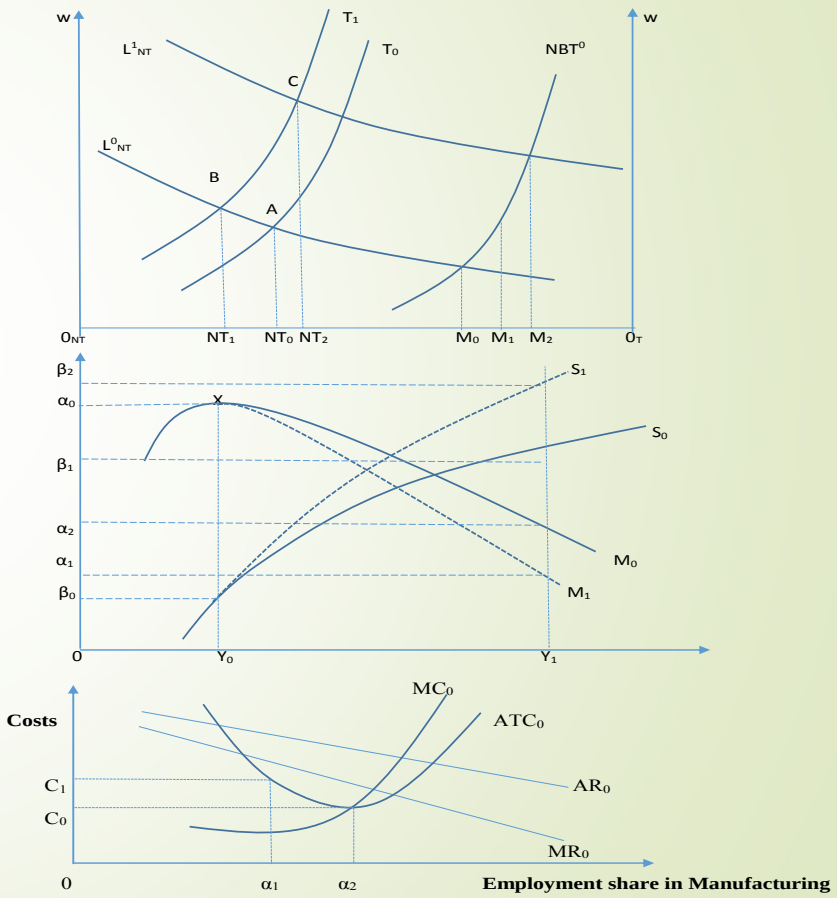
A boom in the traded sector causes the progressing of energy sector and the declining manufacturing sector with a subsequent unsustainable expansion of the Non-traded sector (services). This accounts for the Dutch Disease.



Linking the Dutch Disease to Premature Deindustrialization

- Panels 2 and 3:

M_0 above is representative of the 'normal' process of deindustrialization which takes longer to occur. M_1 is lower than M_0 which occurs due to the loss of labour in manufacturing from the Dutch Disease which leaves the manufacturing sector with other things constant, with spare capacity. There is a decrease in both manufacturing employment and output which is the occurrence of premature deindustrialization.



Premature Deindustrialization in T&T?

Table 1: Employment by Sector for Trinidad and Tobago					
	Employment by Sector (000s)				
Year	Labour Force	Agriculture	Manufacturing	Petroleum and Gas	Employment in other sectors
1991	492.3	41.7	43.7	17.8	389.1
1992	505.2	46.9	42.5	15.3	400.5
1993	504.6	45.8	40.7	14.8	403.3
1994	509.3	51.2	41.5	15.3	401.3
1995	521	45.9	45	15.8	414.3
1996	530.4	42.6	45.4	16.4	426
1997	541	43.7	47.6	16.7	433
1998	558.7	38.9	52.4	17.6	449.8
1999	563.4	39.6	53.6	15.1	455.1
2000	572.9	36.4	55.6	15.9	465
2001	576.5	40.1	53.9	15.5	467
2002	586.2	36.1	56.6	17.2	476.3
2003	596.6	31.4	55.8	16.1	493.3
2004	613.5	26	60.3	18.6	508.6
2005	623.7	25	56.6	19.3	522.8
2006	625.2	25.7	60.3	19.7	519.5
2007	622.4	22.4	56.6	21.5	521.9
2008	626.7	23	56.2	20.2	527.3
2009	620.9	22.9	55.4	19.3	523.3
2010	618.9	21.5	56	18.6	522.8
2011	616.4	21.7	50.2	18.8	525.7
2012	646	22.9	51	20.1	552
2013	650.1	22	51.1	20.7	556.3
2014	658.6	22.9	50.4	21.3	564
2015	645.3	22.3	51.2	20.5	551.3
2016	638.3	19.8	48.3	18.4	551.8
Source: Central Bank of Trinidad and Tobago					

Analyzing Manufacturing Sector in T&T

7 Sub-sectors in Manufacturing in Trinidad and Tobago

- Food, Beverages and Tobacco (largest Sub-Sector consisting of consists of alcoholic and carbonated beverages, juices, cereals, chocolate, confectionary, canned foods, baked goods and tobacco products)
- Textiles, Garments and Footwear
- Printing, Publishing etc.
- Wood and Related Products
- Chemicals and Non-Metallic Minerals
- Assembly Type Related Industries
- Miscellaneous Manufacturing

Major Export Partners

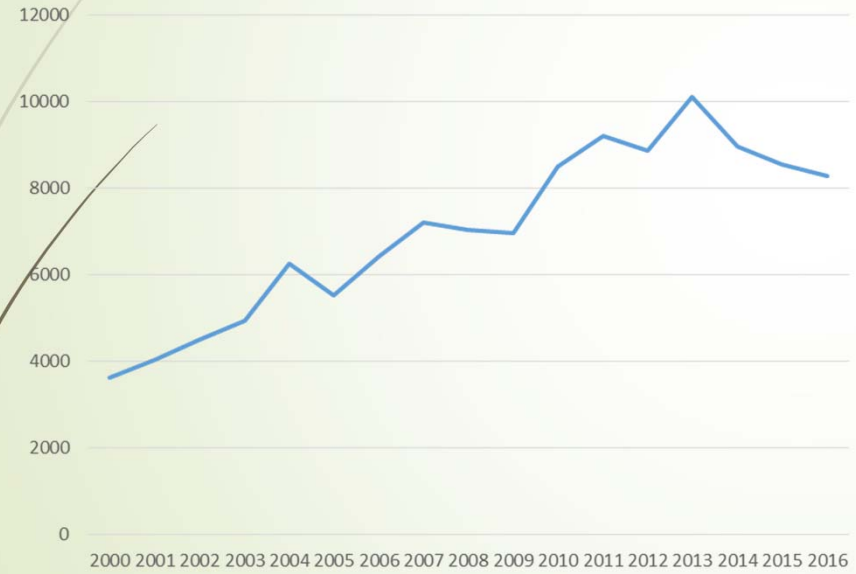
- CARICOM
- USA
- Canada
- UK
- Cuba
- Chile

Main exports of T&T

- Does not consist of manufactured goods but rather liquefied natural gas, anhydrous ammonia, petroleum oils, methanol and floating and submersible drilling and production

Analyzing Manufacturing in terms of GDP and Value Added

Figure 2 shows GDP at Market Prices from manufacturing TT$ Mn



Fidure 3 illustrating MVA (% of GDP) for Trinidad and Tobago the period 1984-2016

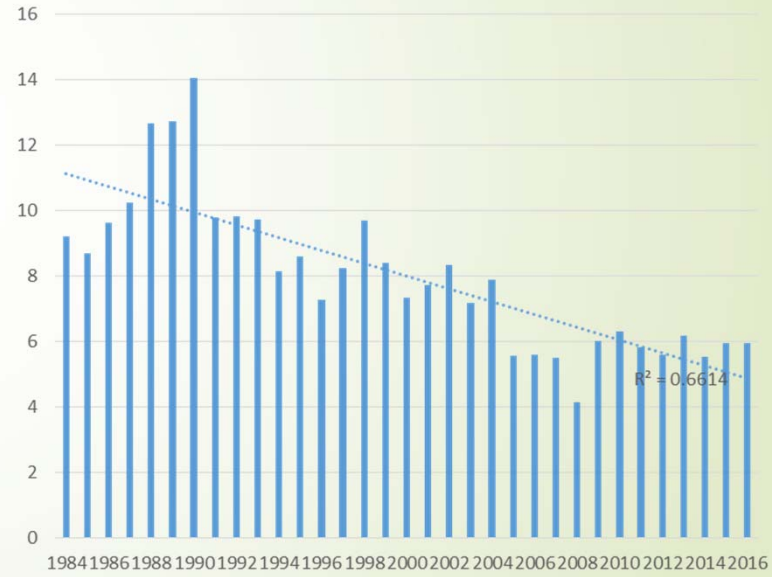
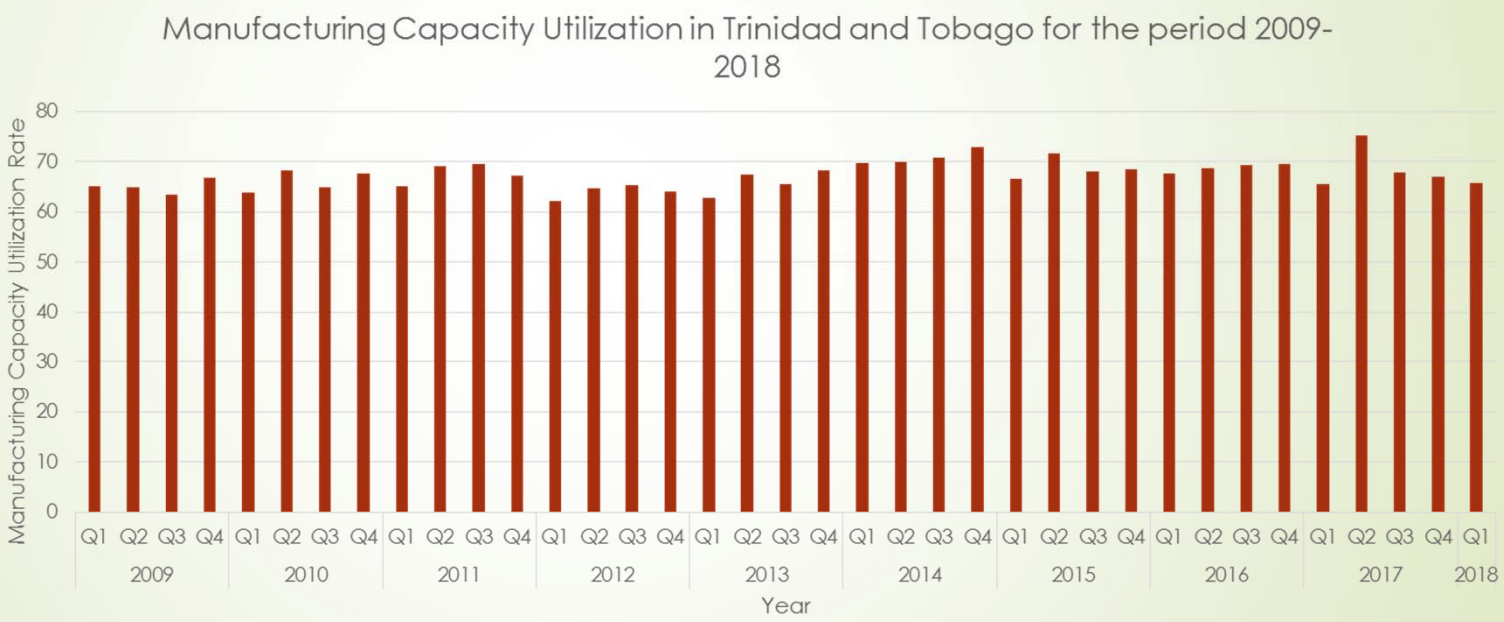


Table 3: Contribution to GDP for the various sectors in the T&T Economy

	Indicator for Trinidad and Tobago						
Year	Agriculture, forestry, and fishing, value added (% of GDP)	Manufacturing, value added (% of GDP)	Services, value added (% of GDP)	Oil rents (% of GDP)	Natural gas rents (% of GDP)	GDP growth (annual %)	REER (2010 = 100)
1984	1.326744	9.194834	64.03556	11.12897	1.087016	-5.75091	123.6449
1985	2.43484	8.698924	63.59139	11.74907	1.261665	-4.12131	129.2894
1986	2.763036	9.630527	66.27057	5.878151	1.202551	-3.28183	89.44348
1987	2.768064	10.23049	63.77605	10.53756	0.620172	-4.56142	82.8893
1988	2.716228	12.66445	64.4258	7.669796	0.781266	-3.91762	77.86679
1989	2.450335	12.70894	60.75165	13.5	1.073151	-0.82702	77.1423
1990	2.540972	14.03524	54.95566	16.57855	1.425623	1.508416	79.23169
1991	2.477104	9.793344	57.5377	8.082543	1.429474	2.68205	79.2795
1992	2.535676	9.823888	60.44571	7.995301	0.897334	-1.6472	80.94976
1993	2.514918	9.734843	59.99344	8.834417	1.296101	-1.45348	73.05724
1994	2.222321	8.129699	55.81423	7.468454	1.113675	3.565901	68.09212
1995	2.31283	8.593418	57.72894	7.834594	1.108945	4.657153	66.48972
1996	2.084911	7.272547	57.76428	9.721607	1.626024	7.134477	67.2573
1997	2.167228	8.242546	59.98127	7.816714	1.939313	7.522855	65.8004
1998	2.058059	9.688064	64.68173	3.124794	1.256612	8.124564	68.38854
1999	1.935923	8.395065	63.04702	5.982562	1.268004	8.024818	69.54311
2000	1.357194	7.3473	56.35099	9.938345	2.758763	6.90136	71.14008
2001	1.286377	7.712504	59.06081	5.935437	3.222164	4.168524	75.13555
2002	1.398472	8.339534	60.12222	6.802636	3.068604	7.93671	77.06195
2003	0.947885	7.187735	52.79518	7.215064	3.619898	14.44142	75.7718
2004	0.761484	7.896966	49.31093	7.645774	4.974845	7.949594	74.84608
2005	0.483999	5.548356	45.09665	11.47926	6.840245	6.208993	76.46094
2006	0.566877	5.598221	43.12793	11.56657	9.855374	13.20806	79.45761
2007	0.371662	5.483161	45.45905	8.471628	10.26642	4.75419	81.61205
2008	0.365514	4.158503	41.40097	8.61028	10.26077	3.390421	86.93496
2009	0.595146	6.005036	54.80882	5.47952	8.383261	-4.39059	94.64058
2010	0.520146	6.298	49.33849	6.55724	5.562315	3.323331	100
2011	0.456543	5.831649	46.08454	8.511629	8.478337	-0.29435	99.02453
2012	0.364138	5.592267	47.46939	7.177609	11.18807	1.293979	107.0886
2013	0.371829	6.18501	50.05244	6.516776	10.49918	0.98085	111.1819
2014	0.348943	5.542354	50.68377	5.886931	10.07368	-0.25216	117.1282
2015	0.446716	5.955765	59.60103	2.113647	5.599045	1.517163	129.7033
2016	0.49716	5.938311	61.98709	2.278495	4.742029	-5.95706	128.2712
2017	0.477871		59.64591			-2.33601	125.2634

Source: WDI Indicators

Manufacturing Capacity Utilization



Potential for Import Substitution Industrialization for T&T (2017)

Table 5: Import Substitution Industrialization Manufacturing Potential for Trinidad and Tobago (2017)					
Imported manufactured commodities	Import Value US dollar	% of Total Imports	Export Value US dollar	Max Import Substitution Value	Max Import Substitutes as a % of Total imports
Machinery, boilers etc.	839554	14.9%	100063	100063	
Electrical, electronic equipment	382646	6.8%	18830	18830	
Vehicles	403838	7.2%			
Plastics and articles thereof	181730	3.2%	31181	31181	
Ores, Slag, Ash	256562	4.6%	20780	20780	
Iron and Steel	158219	2.8%	568766	158219	
Furniture	86899	1.5%	11589	11589	
Cereals	64607	1.1%			
Railway or tramway and locomotives	59783	1.1%	10574	10574	
Beverages, Spirits and Vinegar	58768	1%	88706	58768	
Pharmaceutical Products	57141	1%			
Total Imports	5621012	45.2%		410004	7.29%

Trends in Corruption, Crime, Ease of Doing Business and Global Competitiveness

Table 4: Trends in the Corruption Perception Index, Crime, Ease of doing Business and Global Competitive Index for Trinidad and Tobago

Year	Corruption Perception Index	Crime as represented by the Murder Rate	Ease of Doing Business	Global Competitiveness Index
2008	36	550	78	3.88
2009	36	509	81	3.85
2010	36	485	76	3.9
2011	32	354	68	3.97
2012	39	383	63	4
2013	38	408	66	4
2014	38	403	85	3.91
2015	39	410	92	3.95
2016	35	463	96	3.94
2017	41	494	102	3.93
2018			102	4.09

Reindustrialization Potential using a Trade Competitiveness of Nations indicators (TradeCAN Analysis) for TT exports in CARICOM and Non-CARICOM countries

	Share of Product in World Trade	
Share of Country's export in world trade	Rising (dynamic)	Falling (Stagnant)
Rising (Competitive)	Rising Stars (gaining market share in fast growing products)	Falling Stars (market shares are rising but not in dynamic products)
Falling (Non-competitive)	Lost Opportunities (lost market share in dynamic products)	Retreat (stagnant products that have limited growth possibilities)
Source: TradeCan User Guide (1999)		
Figure 5 illustrates the Matrix of Market Positioning used for the TradeCAN analysis		

Reindustrialization Potential using a Trade Competitiveness of Nations indicators (TradeCAN Analysis) for TT exports in CARICOM and Non-CARICOM countries

TradeCAN for the period 2000-2015	CARICOM countries Number of export areas	Non-CARICOM Number of export areas
Declining Star	59	29
Rising Star	32	34
Retreat	90	84
Missed Opportunity	51	92

Table 6: TradeCAN analysis for T&T exports to both CARICOM and Non-CARICOM countries

Examples of 'Rising Star' areas from TradeCAN for TT Export Market to CARICOM countries

Examples of Rising Star Areas for TT Exports to CARICOM
Cheese and curd
Chocolate food preparation cocoa n.e.s
Spices
Oil Seeds and oleaginous fruits
Fuel woods and wood charcoal (excluding wood waste)
Pulp and waste paper
Other man-made fibers suitable for spinning
Crude fertilizers (excluding those in division 56)
Plates, sheets, films, foil and strips of plastics
Telecommunications equipment and parts n.e.s

Examples of 'Rising Star' areas from TradeCAN for TT Export Market to Non-CARICOM countries

Examples of Rising Star Areas for TT Exports to CARICOM
Alcoholic beverages
Crude fertilizers (excluding those of Division 56)
Natural gas, whether or not liquefied
Inorganic chemical elements; oxides and halogen salts
Fertilizers (other than those of group 272)
Other plastics in primary form
Insecticides and similar products for retail sale
Pigiron and spiegeleisen, sponge iron, powder and granu.
Tubes, pipes and hollow profiles, fittings and iron and steel
Works of art collectors pieces and antiques

Facilitation of increasing Manufacturing Potential: Specialized Economic Zones (SEZ's)

- Wang (2009) postulates that a specialized economic zone (SEZ) is a geographical area in a country that is used for industry, manufacturing and services for export that benefit from more liberal and economic laws than that of the country itself.
- SEZ's are said to increase per capita foreign direct investment, prevent overcrowding of domestic industries and capital stock, increases total factor productivity growth, introduce advanced technology and capital to a country.
- SEZ's allow for the development of infrastructure, currency exchange, technological development, increased investment, employment and economic growth in a country (Pakdeenurit et al, 2014)

SEZ's and relation to T&T: E-TecK Parks

- It was identified that 135 countries across Asia, Africa, Latin America and Europe utilized over 3000 SEZ's to increase foreign capital, exports, employment, stimulate industry and improve infrastructure.
- Zeng (2015) states that SEZ's can be effective in promoting industrialization referencing to developing East Asian countries.
- EtecK initiative is "to drive the non-energy sectors for the sustainable long-term growth and development of diversified and knowledge-based economy that contributes to the creation of high quality jobs." Following 2013, e TecK would be refocused on asset management and the development and facilitation of economic zones.
- The company also has the responsibility improving the infrastructure of existing economic zones, commercialize existing industrial parks.
- There are currently 19 E-TecK parks throughout T&T.

Conclusion

- Trinidad and Tobago shows evidence of experiencing both the Dutch Disease and Premature Deindustrialization.
- There has been a decline in manufacturing output and employment, the existence of spare capacity based the manufacturing capacity utilization rate and there is limited potential for import substitution industrialization currently in Trinidad and Tobago.
- Investments in manufacturing sector may also be affected from areas such as increasing crime, as well as decreasing ease of doing business and global international competitiveness. Therefore, the development of this sector may end prematurely if measures to curb these issues are not put into place.
- TradeCAN analysis provided 'rising star' areas in which the country can in crease the potential for the reindustrialization of the manufacturing sector.

Policy Recommendations

- Policy implementation can be made to boost export areas in relation to areas in the TradeCAN analysis which narrow export areas that are considered 'rising star' which aims to increase market share for fast growing products.

- A boost in these areas can be actively propelled by further policy implementation and streamlining of resources in the E-Teck Parks designated for manufacturing in the country given the many benefits and successes of SEZ's around the world in promoting manufacturing.