CENTRAL BANK OF TRINIDAD & TOBAGO

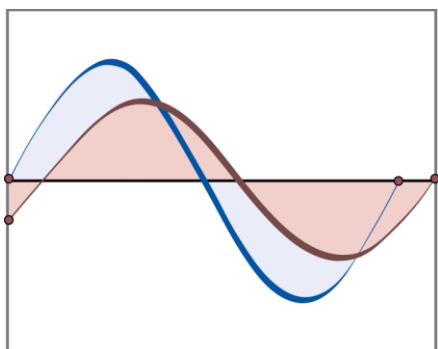# Working Papers

Impact of the Closure of a Large Foreign Direct Investment: The Case of ArcelorMittal in Trinidad and Tobago

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Abstract: Foreign Direct Investment (FDI) is an important source of financial flows, especially for developing economies like Trinidad and Tobago. Although the primary recipient of FDI is the local energy sector, the iron and steel industry was also a beneficiary of inward FDI. ArcelorMittal was Trinidad and Tobago's primary exporter of iron and steel products and the largest earner of foreign exchange outside the energy sector. However, the global oversupply of steel products coupled with low-cost external competition adversely affected the financial performance of the steel company. This, together with domestic factors ultimately, led to its closure in March 2016. There exists limited information on the effects of the withdrawal of a major source of FDI from the host country. This paper provides empirical evidence on the withdrawal of a major foreign direct investor highlighting the socioeconomic spillovers of such a decision. Policy recommendations are also provided to address any reoccurrence of a similar event.

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1. Introduction

Foreign Direct Investment (FDI) plays an integral role in the promotion of a domestic economy's entrance into the global trade and financial markets. Many developing countries see FDI as an important element in their road to economic development and it is considered to be the most significant external source of finance for developing economies (UNCTAD 2018). A gamut of literature is widely available on the economic and financial benefits of FDI in the recipient economy. However, limited information exists describing the failures and also the withdrawal of major foreign direct investors within any economy. Given the withdrawal of ArcelorMittal Steel Company from Trinidad and Tobago, and the wave of uncertainties following this decision, it has become prudent to monitor the relationships between foreign direct investors and the domestic economy as these interactions can open an economy to the adverse effects of sudden policy changes by investors.

Trinidad and Tobago continues to view bilateral investment treaties as an important avenue for allowing FDI to flourish and in this regard has progressively pursued greater market access for domestic investors while encouraging foreign enterprises to invest in the domestic economy. Bilateral investment treaties are an effective avenue for the promotion of global market access to investors and also provide protection for an economy's foreign investments. Bhasin & Manocha (2016), evidenced through the employment of a general method of moments model that bilateral investment treaties have positively contributed to attracting FDI inflows in a developing economy, namely India, by facilitating protection and commitment to potential foreign investors. Similarly, the domestic economy has benefited from bilateral investment treaties since the 1990s through arrangements with developed economies such as the United States of America (USA), United Kingdom, Germany, France and Canada. Treaties have also been negotiated with emerging market economies which include; China, India, Mexico, Republic of Korea and Cuba. Trinidad and Tobago's foreign investment regime encourages investment in all sectors with limited restrictions or disincentives to investment. One key driver in broadening the scope of FDI in Trinidad and Tobago is the continuous negotiation of new investment treaties.

According to United Nations Conference on Trade and Development (UNCTAD 2019), global FDI flows fell by 13.0 per cent in 2018 to US$1.3 trillion, primarily due to large repatriations of accumulated foreign earnings by United States

multinational enterprises (MNEs). Further, flows in developed economies fell by 23.0 per cent while it increased by 2.0 per cent in developing economies. At the same time, FDI flows to Latin America and the Caribbean fell by 6.0 per cent to US$147.0 billion as the economic recovery stalled and external factors weighed on growth prospects (UNCTAD 2019). FDI remains the largest external source of finance for developing economies making up 39.0 per cent of total incoming finance in developing economies as a group (UNCTAD 2018).

In Trinidad and Tobago, FDI is an important source of financial flows. For many years the primary recipient of direct investment has been the energy sector with minor flows being spread to other sectors of the domestic economy. In 1994, there was a filip to inward direct investment of approximately US$70.0 million in the Manufacturing Sector with the privitization of the local iron and steel company to the Ispat Group (Indonesia)[1]. The acquisition signalled a new era in Trinidad and Tobago's economic growth outside of the energy sector and strengthened the domestic economy's foreign position in the international iron and steel market. ArcelorMittal Point Lisas Trinidad (the acquired name of the local subsidiary from the merger of its parent company Mittal with Arcelor in 2006), began to experience the pinch of the global downturn in international steel prices with substantial loses being recorded in 2014 following years of positive performance and contributions to the level of domestic economic activity. The voluntary insolvency of ArcelorMittal Point Lisas Limited and the withdrawal of the direct investor from the domestic economy in the first quarter of 2016 was a consequence of the slowdown in the global iron and steel industry coupled with domestic considerations.

This paper aims to investigate the contributions of ArcelorMittal Point Lisas Trinidad, herein referred to as ArcelorMittal, to Trinidad and Tobago's economy and the subsequent conditions experienced in the aftermath of the company's closure. In addition, the paper will provide guidelines to assist with any similar reoccurrence. The structure of the paper is as follows; Section two provides a review of the international and regional literature on the topic; while Section three examines the background of FDI flows in Trinidad and Tobago with particular emphasis on the iron and steel industry. Subsequently, Section four investigates a methodology to quantify effects of the closure of ArcelorMittal while section five analyses and discusses both the quantitative and qualitative impacts of its closure. The paper concludes in Section six which reiterates the context in which the decision for closure was exercised followed by policy recommendations to be undertaken in anticipation of a future reoccurrence.

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[1] In 1989, Ispat Group signed a ten year lease with the Government to operate the Iron and Steel Company of Trinidad and Tobago (ISCOTT) with the option to purchase the plant after five years. Ispat assumed operations of ISCOTT under the name Caribbean Ispat Limited and exercised the right to purchase in 1994.

2. Literature Review

FDI is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy[2]. Furthermore, FDI is a key link in global economic interconnectedness and is widely used to analyze globalization of production, attractiveness of an economy, long-term relationships between economies, technology transfer, and real economic activity generated by foreign companies and investors (Damgaard and Elkjaer 2017). A survey of the literature revealed that there are two main classifications of FDI, namely, greenfield, and mergers and acquisitions. Greenfield investment pertains to the acquisition of capital assets in a foreign country while mergers and acquisitions occurs when a foreign firm acquires and existing firm in another economy. Notably, Griffith, Waithe and Craigwell (2008) indicated that FDI is assuming a significant role in the development and growth strategies of developing and emerging market economies because of inadequate resources to finance development projects. Similarly, Ekholm (2017) highlighted due to inadequate savings and liquidity constraints in developing countries, FDI inflows play an important role in gaining more capital in order to achieve sustainable development.

Proponents of FDI argue that these flows lead to improvements in the host country's balance of payments and fiscal accounts, enhanced human capital, technological transfers, higher productivity, increased competition, lower prices and more efficient resource allocation (Galeza and Chan 2015, Damgaard and Elkjaer 2017, World Bank 2017, OECD 2002 and, Loungani and Razin 2001). Empirically, neoclassical and endogenous growth models have been used to test the hypothesis of FDI-led growth. Neto, Brandão and Cerqueira (2008) indicated that FDI in neoclassical growth models promotes economic growth by increasing the volume of investment and/or its efficiency while endogenous growth models assume that FDI raises economic growth through technology transfer, diffusion, and spillover effects.

The impact of FDI flows on economic growth remains a highly debated area. On the one hand, several studies have indicated the positive impact of FDI on economic growth. For instance, Lamsiraroj and Ulubasoglu (2015) assessed the relationship between FDI and growth in one hundred and forty (140) countries over the period 1970 to 2009. Using econometric analysis, the results showed that FDI positively affected economic growth. Moreover, this association holds globally as strongly as in the developing world. Bosworth and Collins (1999) examined the effect of capital flows on savings and investment in fifty-eight (58) developing countries during the period 1978 to 1995. The results indicated that changes in FDI significantly affect investment.

On the other hand, FDI, which targets domestic sales to consumers, may adversely affect the balance of trade by increasing imports of intermediate goods and eventually may negatively affect domestic investment and savings Fry

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[2] International Monetary Fund (2009), Balance of Payments Manual, Sixth Edition.

(1993). Dritsakia and Stiakakis (2014) examined FDI, exports and economic growth in Croatia from 1994 to 2012 using the AutoRegressive Distributed Lag (ARDL) approach and the Error Correction Model-ARDL model. The findings suggest that FDI did not lead to economic growth in Croatia either in the short-run or long-run. Further, several authors have argued that the impact of FDI on growth is also dependent on economic and institutional development (Neto, Brandão and Cerqueira 2010).

There has been a noticeable slowdown in FDI flows following the global financial and economic crisis in 2008. FDI inflows reached a historic record of US$1.9 trillion in 2007 before declining by 15.0 per cent in 2008 as the crisis affected firms' ability to invest. This was largely on account of reduced availability of finances along with a lower propensity to invest due to gloomy economic and market prospects (UNCTAD 2009). In a later study, UNCTAD (2016) highlighted that the downward trend in FDI flows was mainly attributed to a large number of Multinational Corporations (MNC)in the extractive sector and other sectors reducing both their capital expenditures and medium-term investment plans. The reduction in investment was reflected in several MNCs closing their production facilities in a number of countries. This is consistent with the theory that MNCs are inherently footloose, that is, they can react almost instantaneously to adverse changes in the host country and shift their production facilities, or parts thereof, to another country if the present environment changes to their disadvantage (Görg and Strobl, 2002 and Bernard and Sjöholm 2003).

The closures of MNCs in host countries have adversely affected both developed and developing economies. In the US, Caton (2012) examined inward direct investment and the results indicated that the probability of shut down is substantially higher for US manufacturing plants of foreign MNCs than for non-MNC plants. Similarly, foreign-owned firms have a lower probability of survival as well as the risk of exit is higher (Girma and Gorg 2003, Gorg and Strobl 2003 and Wagner and Gelübcke 2011). In addition, several authors have shown that closures of MNCs adversely unemployment. Sofka, Preto and de Faria (2015) indicated that closures create uncertainty for foreign affiliate employees, impacting their future job opportunities and the economic prospects of entire regions. For instance, in Belgium, Dhyne et al. (2010) showed that over the period 1998 to 2005, among the 87,000 jobs lost due to firms leaving the market, 12,000 were due to foreign multinational firms. Bisztray (2016) estimated the impact of foreign–owned large plant closures on local firms in Hungary during the period 1992 to 2012. Using difference-in-differences estimation, the results indicated that following foreign-owned large plant closures, sales of nearby firms decreased by 6.0 per cent and employment fell by 3.0 per cent on average. In another study, Belderbos and Zou (2005) analyzed the magnitude and pattern of foreign divestment and relocation by Japanese electronics firms in nine East Asian countries during 1995 to 2003. Divestments had a substantial local employment impact, with more than 40,000 local employees involved in the divestment cases identified in the 1995 to 1998 period. Notably, the authors cited labor cost, environmental pressure and increasing competition as the main factors for divestment.

While research has concentrated on both growth and employment impacts of MNCs in host countries, other factors should be considered such as exports, fiscal and environmental effects. In terms of exports, Lapp et al. (1995) found that the real effective exchange rate and demand from its trading partners have a significant impact on exports for G-7 countries whilst in a similar study, but for forty-nine (49) developing countries, Majeed and Ahmad (2007) observed a positive and significant relationship between FDI and exports. They attributed the findings to be primarily due to the export- oriented nature of MNCs which tend to use developing countries as export platforms. Results from Aktar et al (2015) also found that FDI is a major positive contributor to the exports of Pakistan, particularly for manufactured goods. Alvarez and Gorg (2005) indicated that in Chile, foreign firms accounted for more than 30.0 per cent of manufacturing exports and value-added in 2000. While in the UK, in 2016 steel exports declined by 24.0 per cent to £3.7 billion which resulted in a steel trade deficit of £1.5 billion, the largest deficit in twenty years (Rhodes 2018). One of the main contributors to the sharp falloff in steel exports was the closure of the Sahaviriya Steel Industries (SSI) plant which contained the second largest blast furnace in Europe (Rhodes 2018). For the fiscal accounts, the Institute of Public Policy and Research (2016), estimated that the potential cost to the government in 2016/17 was between £0.8 billion and £2.2 million per day reflecting losses from income taxes, Value Added Tax (VAT) and additional benefits following the closure of Tata Steel.

Finally, the operations of MNCs can negatively impact the environment. For example, within the steel industry, on average, 1.9 tonnes of carbon dioxide (CO_2) are emitted for every tonne of steel produced (World Steel Association, 2018). According to the International Energy Agency (2014), the iron and steel industry accounts for approximately 6.7 per cent of total world CO_2 emissions. Notably, China's steel industry has implemented production cuts with the aim of reducing pollution. China's average daily steel output fell 1.9 per cent in December 2017 from the previous month, the lowest level in a year[3].

Notably, while the literature has identified several impacts relating to the withdrawal of MNCs on host economies, few papers have focused on the Caribbean region. Moreso, the economy of Trinidad and Tobago remains highly dependent on its energy sector which is dominated by MNCs. As such, the following section provides a background of FDI flows in Trinidad and Tobago with particular emphasis on the iron and steel industry.

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[3] Xu and Mason (2018),"China sets record daily steel output for third month in a row," Reuters, July 15, 2018.

3.1 Stylized Facts

Trinidad and Tobago has experienced MNCs divestments from the domestic economy when faced with unfavourable external and domestic conditions. In 1974, Shell — a US based oil company — withdrew its interest in the local economy and sold its assets, including its failing refinery, to the Government and was later renamed, Trinidad and Tobago Oil Company (TRINTOC). Another energy based MNC that divested its interests in the domestic economy was Chevron in 2017 when it sold of its assets to Shell (previously BG) for US$250.0 million, in addition to its stake in Trinling Limited - a Liquefied Natural Gas (LNG) company. This came a few months after Centrica, a UK gas company, divested its entire portfolio of assets to Shell for an initial cash consideration of US$30.0 million. The case of ArcelorMittal, however, is different as there was no continuity of interest through the transfer of ownership or sale of assets as the aforementioned companies but rather a complete shutdown of operations in the large non-energy sector company, a sector crucial for diversification efforts.

ArcelorMittal was one of the largest steelmakers in the Caribbean and subsumed in the 'Brazil segment' of the parent company's operations. The Brazil segment included the Flat operations of Brazil, and the Long and Tubular operations of Brazil, Argentina, Costa Rica, Venezuela, and Trinidad and Tobago. ArcelorMittal produced Direct Reduced Iron (DRI), steel billets and wire rods, mainly for export to country markets in Latin America, Caribbean, the United States, Canada, Europe and North Africa. ArcelorMittal was Trinidad and Tobago's largest contributor to the local iron and steel exports and the single largest foreign earner outside the energy sector. The subsidiary of ArcelorMittal was a MNC with 100.0 per cent ownership (foreign direct investment entity) whose operations were concentrated in the local non-energy sector. Inward foreign investment (liabilities to foreign investors) has traditionally been concentrated in the energy sector. Over the last eight years, there has been a gradual decline in direct investment liabilities from US$ 12,789.4 million at the end of 2011 to US$ 8,646.6 million at the end of 2018. This downward trend was underpinned by lower reinvested earnings in exploration and production activities within the local energy sector. Trinidad and Tobago's energy sector attracted ,on average, 75.0 per cent of FDI over the period, followed by 'Finance, Insurance, Real Estate and Business Services' (8.7 per cent), 'Assembly Type and Related Industries' (8.6 per cent), 'Transport, Communication and Storage' (3.5 per cent) and 'Electricity and Water' (1.8 per cent) to round off the top five (5) recipients of FDI in the domestic economy **(Table 1).** The investments from ArcelorMittal were accounted for in the category of 'Assembly Type and Related Industries'. Although the operations of ArcelorMittal were discontinued, a reduction in net external liabilities in the International Investment Position (IIP) has not been recorded as the facility has not been sold to date.

Table 1: Stock of Direct Investment Liabilities in Trinidad and Tobago (5 Main Sectors)
/per cent/

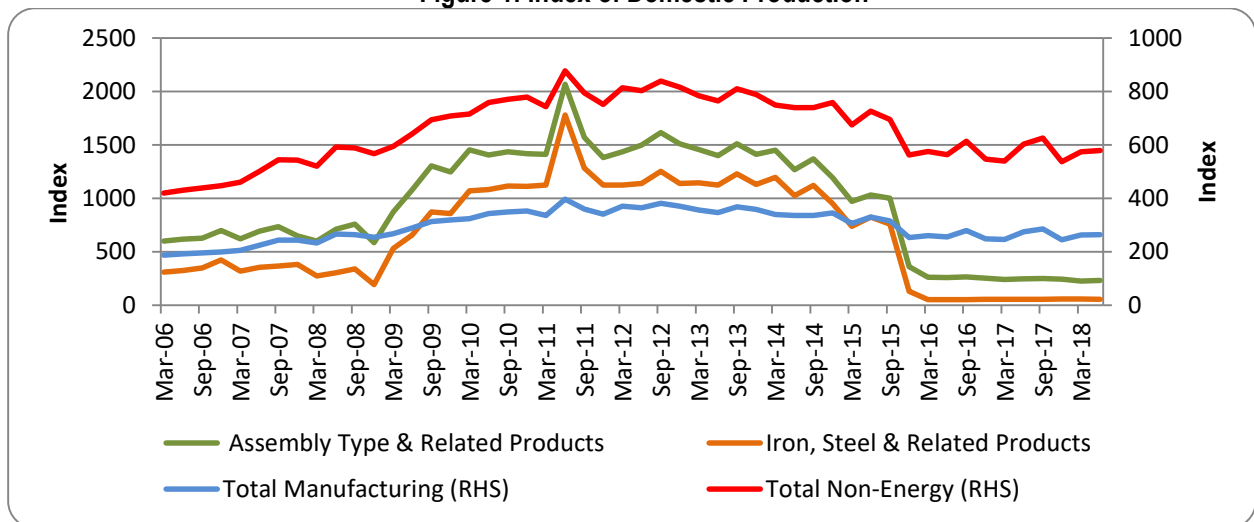| Year	Petroleum Industries	Finance Industries, Real Estate and Business Services	Assembly Type and Related Industries	Transportation, Communication and Storage	Electricity and Water	Top 5 as a per cent of Total
2011	80.3	7.7	6.2	3.1	1.9	99.1
2012	76.5	9.2	7.2	3.6	2.3	98.7
2013	76.9	9.1	6.0	3.8	2.4	98.2
2014	74.6	9.5	9.3	3.4	1.8	98.5
2015	75.0	7.3	9.3	4.1	1.7	97.3
2016	74.7	8.0	9.5	3.4	1.7	97.3
2017	72.4	9.0	10.5	3.6	1.5	97.0
2018	69.7	10.1	11.2	3.2	1.5	95.7
Total	**75.0**	**8.7**	**8.6**	**3.5**	**1.8**	**97.7**

Source: Central Bank of Trinidad and Tobago

In the most recent period prior to the closure of the steel company, that is, 2010 to 2015, Trinidad and Tobago's iron and steel industry accounted for an average of 84.2 per cent of total manufacturing exports, 32.7 per cent of total non-energy exports and 6.1 per cent of total exports **(Table 2).** The termination of ArcelorMittal's iron and steel production not only affected export earnings but also domestic Gross Domestic Product (GDP). The category "Iron, Steel and Related Products" contribution to total GDP is relatively small with a weight allocation of 0.042. The index of production for "Iron, steel and related products" experienced a drastic falloff from the fourth quarter of 2015 coinciding with the idling of the Point Lisas Company **(Figure 1).** The decline in this category was also reflected in a reduction in Assembly Type and Related Products which had a domino effect on manufacturing and non-energy sector's GDP. The effects contributed to the 7.1 per cent contraction of the manufacturing sector output in 2016 compared to a smaller contraction of 4.4 per cent in 2015 and a contraction non-energy GDP by 5.7 per cent in 2016 from a smaller contraction of 1.1 per cent one year earlier.

Table 2: Contribution of Iron and Steel Exports
/per cent/

	Manufacturing Exports	Non-energy Exports	Total Exports
2010	85.6	29.4	5.0
2011	84.0	35.2	5.5
2012	77.5	15.8	3.8
2013	92.2	48.4	9.2
2014	84.2	45.6	7.7
2015	81.5	21.8	5.4
Average	**84.2**	**32.7**	**6.1**

Source: Central Statistical Office

Figure 1: Index of Domestic Production

Source: Central Statistical Office

3.2 Background: History of the Iron and Steel Industry in Trinidad and Tobago

The ArcelorMittal local subsidiary was born out of the Iron and Steel Company of Trinidad and Tobago (ISCOTT) which began its official operations with a facility consisting of two Midrex Direct Reduction Iron (DRI) modules; a melting shop comprising two 90-tonne Demag Electric Arc Furnace (EAF) and two four-strand casters; and a Morgan/Stelmor Rod mill. These facilities had a production capacity of 840,000 tonnes of DRI, 600,000 tonnes of billets and 485,000 tonnes of wire rods. In 1980, ISCOTT was commissioned and Trinidad and Tobago emerged into the steel industry which at that time was characterised by falling international prices and increasing levels of trade protectionism. One year later, Trinidad and Tobago entered the global arena for steel products with the exportation of DRI and wire rods.
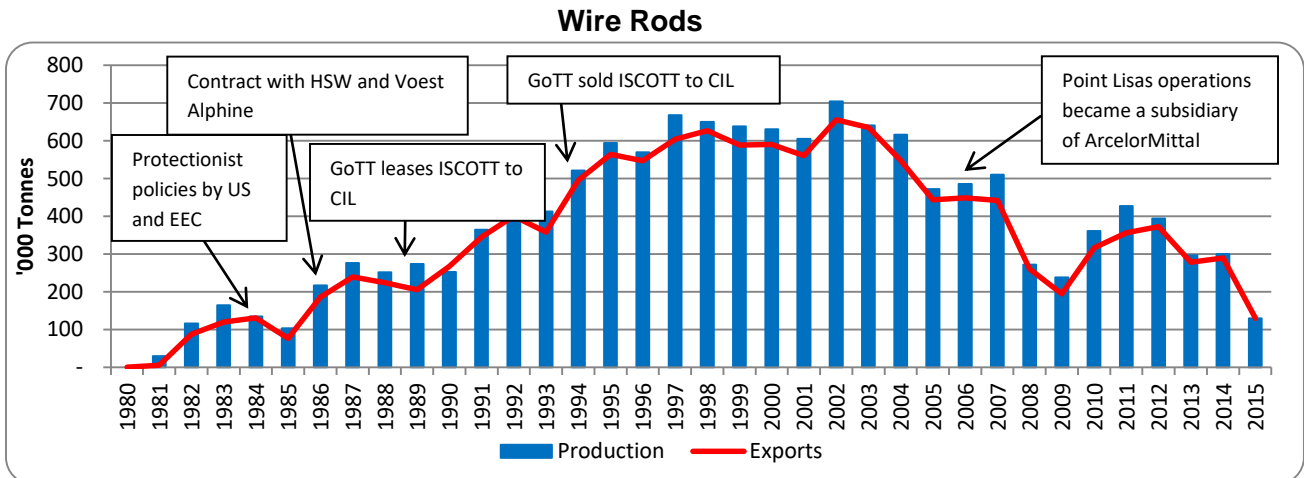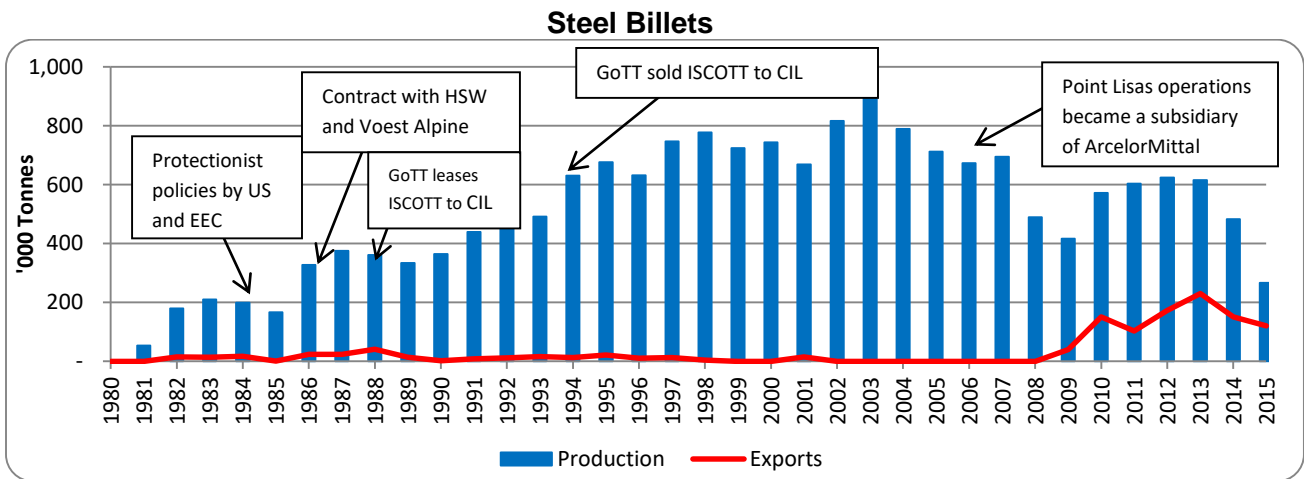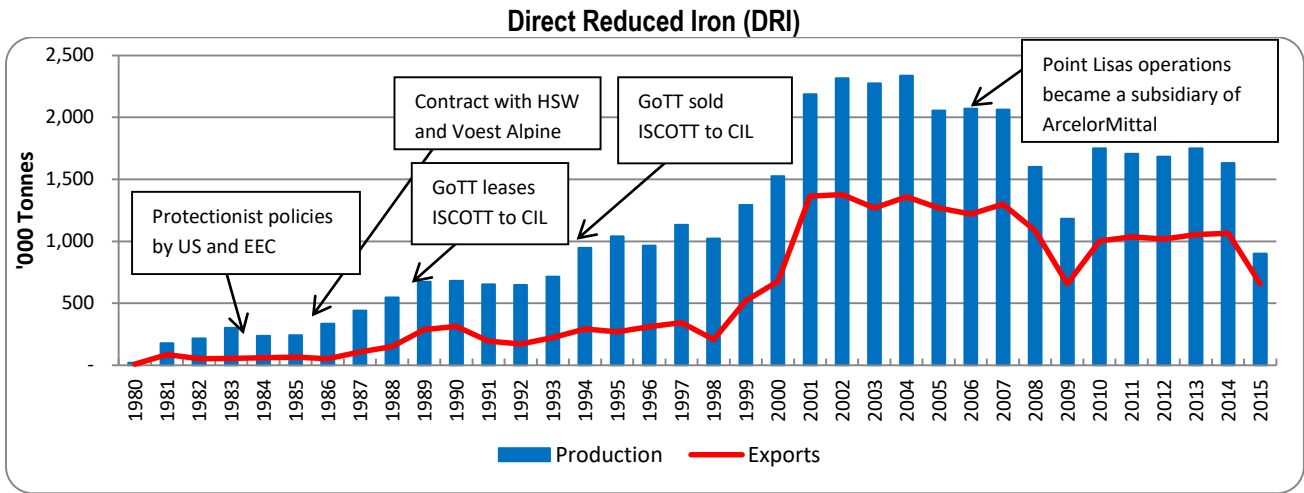
In 1984, there was a 41.0 per cent decline in exports as the USA and the European Economic Commission (EEC)[4] imposed a series of antidumping and countervailing duties on ISCOTT's exports of wire rods. FDI involvement started when the government entered into a two-year contract with Hamburger Stahl Werke (HSW) of Germany and Voest Alpine of Austria in 1986 in an attempt to curb the emanating losses from the mill's operations and the loss of the US market. The agreement improved capacity utilization in the steel plant, however the company continued to amass losses. The expiration of the contract in 1988, led the government to lease ISCOTT to the Ispat Group for US$11.0 million per year. Ispat began operating the ISCOTT facility in 1989 under the name Caribbean Ispat Limited (CIL) and the loss making position was redressed. In 1994, the Government sold its interest in the plant to Ispat for US$70.0 million and CIL continued its operations providing several downstream companies with its products such as Central Trinidad Steel Limited (CENTRIN), Caribbean Steel Mills (CSM) and TRINRICO.

In 2006, the Mittal Steel Company[5] acquired European steel maker Arcelor making the Point Lisas operations in Trinidad a wholly owned subsidiary of the ArcelorMittal worldwide group. By 2008, the company was faced with disruptions across all production lines as a result of industrial action by workers. Despite the modest recovery of external conditions in 2010, worker dismissals, maintenance activity and a major outage led to reduce output of the facility. Downward pressures continued with increased low-cost competition from China and Turkey in the Central American and Caribbean markets, a major export market of its wire rod shipments. In late 2015, the local subsidiary had accumulated debt as much as US$1.3 billion and US$0.2 billion in impairment charges. In October 2015, there was a drastic fall-off in steel production **(Chart 1).** The slowdown in the global iron and steel industry, increased local utility charges, taxes and port fees were cited as reasons for the local subsidiary's cessation of operations in March 2016.

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[4] The US Department of Commerce (DOC), after investigation, imposed an average weighted dumping margin and countervailing duty of 14.2 per cent and 6.7 per cent respectively on wire rods from ISCOTT whilst the EEC imposed a dumping margin of 44.0 per cent on the exports of wire rods from the company.
[5] Ispat International, LNM Holdings and International Steel Group (ISG) merged to form Mittal Steel company limited, the world's largest steel producer, Caribbean Ispat Limited (CIL) was renamed Mittal Steel Point Lisas Limited in 2004 to reflect this development.

Chart 1 : Trinidad and Tobago Steel Industry's Production and Exports of DRI, Billets and Wire Rods
(1980-2015)

Direct Reduced Iron (DRI)

Steel Billets

Wire Rods

Source: Central Bank of Trinidad and Tobago

4. Methodology

ArcelorMittal faced several micro and macroeconomic challenges leading to its closure in 2016. A scenario analysis was required to analyze the alternative outcome of continued operations of the iron and steel company. In order to estimate Trinidad and Tobago's loss of foreign exchange earnings from ArcelorMittal over the period 2016 to 2018, it was necessary to model the export demand function of the company. Based on the literature for modelling exports (Lapp et al. 1995; Majeed and Ahmad 2006; Aktar et al. 2015), the variables were selected. Annual data for the period 1980 to 2015 was obtained from various sources such as the IMF, Central Bank of Trinidad and Tobago, Central Statistical Office and ArcelorMittal. A logarithmic time series specification was employed in order to infer elasticities for the explanation of the results.

$$LNEX_t = f\ (FDI,\ RGDP, FXR,\ TP,\ PRO) \qquad\qquad (1.0)$$

Where FDI is inward Foreign Direct Investment, RGDP is real Gross Domestic Product, FXR is Trinidad and Tobago's bilateral exchange rate with the US, TP represents the GDP of the major trading partners (export market) of ArcelorMittal Point Lisas and PRO is ArcelorMittal's steel production. Inward FDI was chosen as it is important source of funding for companies while ArcelorMittal's production is a supply side determinant of exports. The exchange rate influences relative prices as a depreciation in the domestic currency makes exports cheaper in international markets and the trading partners GDP was selected as it represents the foreign economic conditions under which ArcelorMittal's major export markets are able to demand the local subsidiaries exports. Exports are also affected by domestic factors, hence the inclusion of real GDP.

Prior to estimating the equation, the stationarity of the individual variables was examined via the univariate Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) unit root tests. The logs of the variables were found to be stationary after first differencing i.e. I (1). The optimal lag length of one lag was chosen for the model and in an effort to determine whether the variables were cointegrated, the null hypothesis of no cointegrating equation was tested via the Johansen procedure, however it could not be rejected[6]. Consequently, given the integration of order one as well as the non-existence of a cointegrating equation, an unrestricted Vector Autoregression (VAR) model was suitable for estimating the equation. To ensure and verify the stability of the model selected, several tests, namely the inverse AR roots, serial correlation LM test, and the heteroskedasticity tests were conducted and confirmed the stability and robustness of the model **(see Appendix).**

An out-of-sample dynamic forecast was implemented in order to estimate ArcelorMittal's export volume for the period 2016 to 2018. In order to disaggregate the estimated export volume by product type (DRI, billets and wire rods), a 10-year historical contributions to overall exports (2006 to 2015) was applied to total exports derived from the model. The

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[6] At 1% significance level.

prices for various steel products were obtained from the observed prices in the market. However, due to the unavailability of DRI prices, it is assumed that prices remained constant over the three year period, consistent with the marginal movements in the price of its main input – natural gas. Therefore, the value for export earnings were estimated by the product of the disaggregated volumes of iron and steel exports with its respective international prices. The scenario assumes that the conditions for ArcelorMittal remain unchanged, in that the facility continued to produce instead of shutting down.

5. Results and Analysis

Current Account

The VAR model was employed to give an insight of ArcelorMittal's forgone contributions to non-energy export earnings as well as the impact on Trinidad and Tobago's external current account. The results estimated by the VAR model indicated that total iron and steel export volume would have declined in 2016 and moderately increase in 2017 and 2018, mainly for DRI and billets. In contrast, wire rods exports would have increased over the three year period. It must be noted that although estimated steel exports would have increased in the 2017 and 2018, total export volume was lower when compared to historical figures. Despite the comparatively lower exports, ArcelorMittal's contribution to export earnings over the period would have positively impacted on the current account as over the period international steel prices increased and the domestic exchange rate was relatively stable. Moreover, the model indicated that the exchange rate and ArcelorMittal's production had a positive and significant effect on estimated export volume.

Based on the methodology, the estimation of the potential export earnings forgone by the domestic economy were, on average, US$146.3 million from DRI, US$25.3 million from steel billets and US$87.5 million from wire rods over the three years **(Table 3)**. Moreover, an annual average of US$259.2 million in exports was estimated to have been lost from the permanent closure of the ArcelorMittal operations.

Table 3: Iron and Steel Exports

Period	Export Volume /'000 tonnes/			Prices /US$/			Export Earnings /US$ million/		
	DRI	Billets	Wire Rods	DRI	Billets	Wire Rods	DRI	Billets	Wire Rods
2016e	601.7	59.8	180.1	240.7	323.7	373.0	144.8	19.3	67.2
2017e	604.1	59.9	180.8	240.7	430.9	485.9	145.4	25.8	87.9
2018e	618.3	61.4	185.1	240.7	501.6	580.7	148.8	30.8	107.5
Average	608.0	60.4	181.9	240.7	418.7	479.9	146.3	25.3	87.5

Sources: Authors' Calculations

The findings suggest that if ArcelorMittal remained in operation, non-energy export earnings would have increased, resulting in a smaller current account deficit of US$748.2 million in 2016 compared to US$979.5 million. The current account surplus would have further improved in 2017 and 2018 to US$1,495.2 million and US$2,260.5 million compared to US$1,236.1 million and US$1,190.7 million, respectively **(Table 4).** It must be noted that improvements to the current account from higher export earnings may have been offset by the repayment of ArcelorMittal debt to external parties.

Table 4: Trinidad and Tobago Current Account Balance
/US$ million/

	Closure of ArcelorMittal			Continued Operations of ArcelorMittal		
	2016	2017	2018	2016e	2017e	2018e
Current Account	(979.5)	1,236.1	1,190.7	(748.2)	1,495.2	2,260.5
Goods and Services	(560.9)	880.5	2,050.6	(329.6)	1,139.6	3,120.5
Goods, net	1,215.7	2,994.0	3,693.4	1,447.0	3,253.1	3,980.5
Exports	8,304.4	9,445.7	10,311.2	8,535.7	9,704.8	10,598.2
Energy	6,449.9	7,668.8	8,855.3	6,449.9	7,668.8	8,855.3
Non-energy	1,854.5	1,777.0	1,455.9	2,085.8	2,036.1	1,743.0
Imports	7,088.7	6,451.7	6,617.8	7,088.7	6,451.7	6,617.8
Fuels	1,542.3	1,617.7	1,755.4	1,542.3	1,617.7	1,755.4
Other	5,546.4	4,834.0	4,862.4	5,546.4	4,834.0	4,862.4
Services, net	(1,776.6)	(2,113.6)	(1,642.8)	(1,776.6)	(2,113.6)	(1,642.8)
Primary income, net	(428.2)	75.8	(765.7)	(428.2)	75.8	(765.7)
Secondary income, net	9.6	279.9	(94.2)	9.6	279.9	(94.2)

Sources: Central Bank of Trinidad and Tobago and Authors' Calculations

e-Estimate

Fiscal Accounts

Trinidad and Tobago's economy continued to be dominated by its energy sector, and as a result, the falloff in international energy prices negatively affected the fiscal accounts. The fiscal accounts have recorded successive deficits since 2011, while public sector debt has risen steadily. More specifically, lower iron and steel prices would have also contributed to ArcelorMittal incurring losses, and as a result, the company did not remit corporation taxes[7].

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[7] Trinidad and Tobago's Corporation Tax Rate is 30.0 per cent; Business Levy is 0.6 per cent of gross income; Green Fund Levy is 0.3 per cent of gross income.

Furthermore, the closure of ArcelorMittal will affect the fiscal accounts going forward as the Government will not benefit from corporation taxes, business levy tax, green fund levy, Value Added Tax (VAT) and property taxes. The potential loss of revenue to the government is in line with the findings of the Institute of Public Policy and Research (2016).

It should be noted that the closure of this company will also impact the revenue streams of statutory boards and similar bodies such as the Water and Sewerage Authority (WASA) and Trinidad and Tobago Electricity Commission (T&TEC) and state enterprises such as National Gas Company (NGC). In the case of T&TEC[8], the Commission indicated that the closure of ArcelorMittal will lead to a decline in revenue by $96.0 million per year and is expected to cost the Commission $1.0 billion over a ten (10) year period.

As it relates to NGC, the Ministry of Energy and Energy Industries[9] indicated that in 2013, NGC sold natural gas on the domestic market mainly to the ammonia manufacturing sector (14.0 per cent), methanol manufacturing sector (14.0 per cent), the power generation sector (8.0 per cent) and the iron and steel sector (3.0 per cent). Therefore, the closure of ArcelorMittal represents a potential loss to NGC. However, given the high demand for gas in Trinidad and Tobago, NGC can divert natural gas to another company and mitigate the impacts from the closure of the steel company.

Inflation

Trinidad and Tobago's inflation rate is affected by both domestic and external factors. Ramrattan and Cheong (2015, 15-18) examined the determinants of inflation using a Vector Error Correction Model (VECM) and quarterly data from 1995 to 2014. Based on the results, the authors concluded that government spending, money supply and imported inflation were short run influences on inflation. During the period 2006 to 2015, local sales from the iron and steel industry averaged 4.9 per cent of total iron and steel production. As a result of this, the potential increase in imports for iron and steel owing to the closure of the ArcelorMittal is expected to be small. Therefore, imported inflation resulting from an increase in iron and steel imports is anticipated to be modest.

Additionally, Bloomberg's hot-rolled coil steel price forecast indicated that steel prices are expected to decline over the medium term. Furthermore, the iron and steel industry is challenged by modest increases in global steel demand coupled with excess global capacity, which continues to weigh on prices. The World Steel Association (2018) indicated that global steel demand is expected to increase by 3.9 per cent in 2018 and 1.4 per cent in 2019 owing to high confidence, strong investment levels and a recovery in commodity prices. However, Top (2018) asserted that despite a slight narrowing of the gap between global capacity and production, global excess capacity remains a concern. New

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[8] Public Accounts Committee. "Sixteenth Report of the Public Accounts (2012-2015)." Parliament of the Republic of Trinidad and Tobago.
[9] Ministry of Energy and Energy Industries.

investment projects continue to take place around the world and global steelmaking capacity could increase by 2.0 per cent between 2018 and 2020 (Top 2018). As a consequence, the impact on domestic inflation would be contained.

Labour Market

Over the ten year period 2006 to 2015, ArcelorMittal and the representative trade union, Steel Workers Union of Trinidad and Tobago (SWUTT), received judgements from the Industrial Court of Trinidad and Tobago regarding employee terminations and compensation packages on numerous occasions. In 2009, two high profile trade disputes were recorded between the steel company and the SWUTT concerning the termination of employees at the Point Lisas steel mill. The first case highlighted the retrenchment of forty-nine (49) contract employees and the non-payment of severance benefits. The second case, which occurred in the latter half of 2009, cited the retrenchment of one hundred and two (102) employees at the steel mill. In response to these cases, the Court found ArcelorMittal in breach of proper industrial relations and the company was ordered to reinstate the retrenched workers with appropriate compensation being awarded for the period of termination.

In the first quarter of 2015, seven hundred and nineteen (719) persons were employed at ArcelorMittal's steel mill. This figure represented 0.1 per cent of total employment in Trinidad and Tobago and 1.3 per cent of employment in the manufacturing sector. During 2015, right on the brink of what would later be known as ArcelorMittal's eventual closure; the steel mill faced industrial action from the SWUTT on behalf of workers at the company. The trade union filed a complaint at the industrial court stating that the company engaged in illegal industrial action, failed to acknowledge the union as the Recognized Majority Union and failed to treat with the union in good faith regarding collective bargaining and the resolution of disputes. The matter, which was heard in early 2016, was ruled in favour of the union and ArcelorMittal was ordered to pay workers their wages in full for the duration of the complaint period along with reinstating their vacation leave. Immediately following this decision by the court, ArcelorMittal announced the closure of its operations at the Point Lisas steel mill resulting in the unemployment of all workers at the plant. The company stated that economic challenges due to the volatility of the international steel market have affected its profitability, with the parent company funding short falls in operating expenditure, including wages and salaries of the workforce.

Downstream companies which depended on the output from the steel mill to carry out their production process were forced to control expenditure following the closure of ArcelorMittal. This resulted in the retrenchment of large sections of their workforce. CENTRIN is one such company that purchased wire rods and billets from ArcelorMittal to manufacture its steel products which included roofing sheets, decking sheets, chain-link wire and welded wire mesh. In order to continue production, CENTRIN had to import raw materials that were previously sourced from ArcelorMittal. Subsequently, two hundred (200) of CENTRIN's employees received retrenchment notices as the company attempted

to reduce operating costs. Additionally, Tube City IMS, an international contractor that provides onsite industrial mill services for steel manufacturers globally, also has to reduce its labour force from its Trinidad and Tobago subsidiary in response to the termination of the company's contract with ArcelorMittal- its largest employer in Trinidad and Tobago.

Environmental Issues

During its tenure at the Point Lisas Industrial Estate ArcelorMittal was accused of environmental negligence. Over the period 2007 to 2016, several reports were undertaken to investigate complaints by the Point Lisas Industrial Port Development Corporation Limited (PLIPDECO) against ArcelorMittal regarding the emissions of particulate matter from the company's production facilities. In 2016, the matter was elevated to the High Court with the following breaches; particulate emissions of dust into the atmosphere in excess of standards stated by the World Health Organization (WHO)[10]. This caused both a nuisance to other tenants at the estate as well as substantial damage to PLIPDECO's machinery and equipment at the port. The judgment from the High Court granted an injunction against ArcelorMittal to restrain from activities that encourage the emissions of dust, effluent and particulate matter and also to compensate PLIPDECO the sum of $1.6 million for damages.

6. Conclusion and Recommendations

This paper sought to examine the impacts of the closure of a large foreign investor, the case of ArcelorMittal in Trinidad and Tobago. Following the downturn in the international iron and steel industry along with increased competition and domestic considerations, ArcelorMittal ceased operations in the domestic economy in March 2016. Furthermore, the outcomes of this paper showed that the closure of the steel company resulted in an estimated average fall in non-energy exports of US$259.2 million over the period 2016 to 2018 and a forgone improvement in the external current account balance. Additionally, the fiscal accounts will not benefit from corporation taxes, business levy tax, green fund levy, Value Added Tax (VAT) and property taxes with the closure of this company. With respect to inflation, while it is expected that iron and steel imports will increase, global prices are forecasted to decline and as a consequence, the impact on inflation is expected to be minimal. Over seven hundred persons lost their jobs as a direct and indirect consequence of the closure of the plant. Finally, the revenue streams of several statutory boards and similar bodies, and state enterprises such as T&TEC, WASA and NGC were also adversely affected. On the other hand, the closure of this steel company resulted in a reduction in pollution, which positively affected the environment.

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[10] World Health Organization (2015), "Health and the Environment: Addressing the Health Impact of Air Pollution," Sixty-Eight World Health Assembly.

The closure of ArcelorMittal highlights the need to strengthened labour market policies. The International Labour Organization (ILO) stresses the role of skills development and active labour market policies to ensure the smoothest transition for dismissed workers from an unemployed status to one of being re-employed. These policies are aimed at providing income support for job loss such as unemployment insurance as well as facilitating the return to work through employment programmes, including employment-intensive programmes, skills development and entrepreneurship-support measures. In countries where unemployment insurance programs are not available consideration should be given to designing and implementing a contributory unemployment insurance scheme. Additionally, skill training agencies/programmes can link training to occupations that are experiencing shortages (manufacturing sector) or where future job growth is projected.

Finally, foreign investment is guided by polices outlined in bilateral investment treaties. One observation has been that while investors are protected from various forms of state actions, these treaties do not always outline the responsibilities of investors. Countries need to reassess their model bilateral investment treaties to ensure the best outcomes for their economies.

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Appendix

	Augment Dickey Fuller			Phillips Perron			Decision
	Intercept	Trend and Intercept	None	Intercept	Trend and Intercept	None	
LNEX	0.0000***	0.0001***	0.9529	0.0000***	0.0007***	0.9431	
D(LNEX)	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	I(1)
LNPRO	0.0000***	0.0000***	0.9310	0.0000***	0.0002***	0.9134	
D(LNPRO)	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	1(1)
LNTP	0.1576	0.9862	1.0000	0.1986	0.9821	0.9993	
D(LNTP)	0.1291	0.0002***	0.2087	0.0001***	0.0001***	0.0002***	I(1)
LNFXR	0.0124***	0.0964*	0.5454	0.2314	0.9475	0.9607	
D(LNFXR)	0.7254	0.7947	0.1017*	0.0000***	0.0000***	0.0000***	I(1)
LNRGDP	0.9426	0.1688	0.9359	0.9609	0.5481	0.9769	
D(LNRGDP)	0.0622*	0.1262	0.0679*	0.0701*	0.1118	0.0151***	I(1)
LNFDI	0.5860	0.5660	0.6620	0.0973*	0.0639*	0.5150	
D(LNFDI)	0.0008***	0.0442**	0.0000***	0.0000***	0.0000***	0.0000***	I(1)

Notes: Significance level-*1%, **-5%, ***-10%

Table A.2: Serial correlation LM Tests-Exports

VAR Residual Serial Correlation LM Tests

H_0: no serial correlation at lag order h

Lag	LM Statistic	Probability
1	43.19618	0.1908
2	51.18679	0.0482

Table A.3: Heteroskedasticity Test

VEC Residuals Heteroskedasticity Test: No Cross Terms (only levels and squares)

Joint Test		
Chi-sq	**df**	**Prob.**
250.8577	252	0.5085

Table A.4: AR Roots Graph

Inverse Roots of AR Characteristic Polynomial