

Globalization, increased FDI flows and Wage Inequality in a Small Petroleum Rich Economy.

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Abstract

This paper investigates the impact of FDI on wage inequality in a small petroleum rich economy. The paper argues that in Trinidad and Tobago, Foreign direct Investment (FDI) by being skills biased, leads to an increase in demand for skills and hence an increase in the returns to skilled labour relative to unskilled labour, the overall consequence of which is an increase in sectoral wages in the FDI predominated sector. The paper also shows that FDI in T&T has encouraged a dualistic wage structure and that the petroleum sector has engaged a greater amount of trade union activity than any other sector.

Introduction

It is well documented that FDI represents an important source of complementary flows to facilitate the development process in developing economies. A current controversial topic, however, remains whether FDI can help to lower the levels of poverty prevalent in developing economies. The answer to this type of question will depend upon the extent of investment income that is remitted and how skilled workers are deployed relative to unskilled workers.

This paper focuses on a subset of this type of problem - the implications of increased FDI flows for wage inequality in Trinidad and Tobago. The paper reviews the experience of the T&T economy, an oil blessed state, and tries to assess the impact of one aspect globalization - greater FDI inflows, on wage inequality.

This paper advances the FDI wage inequality argument in the case of a small petroleum rich economy in the following important ways; in the first instance it extends the empirical research to the case of a small hydrocarbon rich economy and in the second case, investigates the degree of wage inequality between the petroleum and other important sectors. This study also investigates the extent of FDI investment income that is remitted to the foreign country by MNCs operating in T&T.

Globalization and Foreign Direct Investment Flows

FDI, can be defined as investment of a long term duration from one country to another that may take the form of a “composite bundle of capital stocks, know-how and technology” (de Mello, 1997). The implication of courting FDI is that there exists a long-term relationship between the investor and the host country’s enterprise sometimes involving a significant degree of influence by the investor in the governance of the host country’s economy.²

¹ We would like to acknowledge the research assistance of Mr. Rishi Singh.

² Direct investment comprises not only the initial amount of investment between the investor and the enterprise but also all subsequent transactions (Kamara, 1988).

Almost sixty years ago, Sir Arthur Lewis, wrote an essay entitled ‘Imperialism, the Highest Stage of Capitalism’. In this piece, Lewis argued that capitalists in the Western World, in order to forestall the likelihood of a worker’s revolt at home, would commence exporting their capital so that they could extract profits from labor forces in the LDCs. Many LDC governments have in the past taken heed of this type of advice and have sought to restrict their inflows of FDI. However, by the start of the 1980s as the international debt crisis deepened most developing countries began to rethink their approach to FDI, as western banks were not disposed to granting additional loans. In such an environment, developing countries, one might say, decided to woo and fawn upon private foreign capitalists.

As the Berlin Wall fell and the process of globalization intensified fuelled by a neo-liberal ideology of free trade, free investment flows, democracy and markets, the rate of investment globally, rose dramatically.

Table 1a: FDI Flows, US\$m, 1970-2001 and FDI as a percentage of GDP, 1985-2001.

FDI Flows, US\$m, 1970-2001								
	1970	1975	1980	1985	1990	1995	2000	2001
Total World	12586	26580	54945	57596	202782	330516	1491934	735146
Developed countries	9477	16971	46530	42693	164575	203311	1227476	503144
developing countries	3109	9609	8380	14873	37567	112537	237894	204801

Table 1b: Combined inward and outward FDI stocks as a percentage GDP, 1985-2001 (%)								
	1985	1990	1995	1997	1998	1999	2000	2001
World	14.2	19.2	20.5	23.6	27.8	34.0	38.2	39.0
Developed countries	13.6	18.2	21.0	24.4	28.5	33.5	38.4	39.1
Developing countries	15.7	16	20.4	22.4	26.7	38.1	38.2	38.1

Source: Hosein and Tewarie (2003).

During the last two decades, but especially in the 1990s, the presence of FDI in most countries of the world has expanded considerably. As a proportion of world GDP, the stock of inward and outward FDI, increased from 14.2% in 1985 to 39.0% in 2001. The corresponding change in this ratio for developed economies was from 13.6% to 39.1% and from 15.7% to 38.9% in developing economies.

Corporations invest abroad for several reasons. Firms may invest to exploit natural resources, usually employing specialized and/or technologically sophisticated methods. MNCs may also invest abroad to take advantage of lowly paid but sufficiently skilled labor, which can help to truncate per unit costs and hence assist MNCs to be more cost competitive. Some firms also invest abroad to get access to large domestic markets which may be protected by tariffs. In some cases, MNCs invest abroad to serve as a base for exporting to other countries, and also to sell services, in which case a local presence is normally required. Theories on why MNCs invest abroad follow Coase’s (1937) theory which illustrated how internalizing immediate production processes reduces uncertainty by circumventing market imperfections.³

³ Dunning (1973, 1981) provides detailed analysis on the determinants of foreign direct investment based on ownership, location, and the advantages of internalization.

FDI offers to developing countries a considerable number of benefits, including valuable resources to facilitate their developmental efforts. Some of these benefits include financial capital, technology, physical capital transfers, entrepreneurial talent and access to foreign markets. Many developing countries have recognized the importance of FDI in their developmental thrust and have taken measures to liberalize their investment regimes.

It has also been argued that FDI has invariably led to an uneven income distribution in the host countries (Tsai 1995). FDI normally creates “labour elites” who earn wages well above the average rate. In addition, FDI may induce more capital-intensive production, which worsens unemployment in the traditional sectors.⁴ By creating a dualistic development environment, FDI can have an adverse psychological impact on the people of the host country.

This paper focuses on the influence of FDI on wage inequality in a small petroleum rich economy. It is the first attempt at this type of study for Trinidad and Tobago.

Reflection on the Theory of FDI and Wage Inequality in Developing Countries

An important feature of the globalization process is that it enhances the free flow of factors of production to those parts of the world where they can attract the highest returns. The wave of globalization characterizing the world economy has had something of a paradoxical result in that it has placed increasing pressure on developing economies to drift towards production functions that deploy a greater level of capital and skills biased technology which tend to reduce the relative demand for unskilled labor, the consequence of all this has been growing unemployment, in the informal sector.⁵

Skills biased technological change (SBTC) may be delineated, following Berman (2000), as follows:

$$Y = g(K, S, L, t)$$

Where:

Y: output

K: capital

S: skilled labor

L: unskilled labor

t: time

⁴ For a more detailed discussion in FDI and income inequality, see Tsai (1995).

⁵ In this paper we refer to skill as human capital which has been acquired via education so that someone with a limited amount of education will be classified as an unskilled worker.

The bias induced by technological change may be defined as the change in the elasticity of output (with respect to any factor input i.e. K, S or L), as time changes. If we define $\frac{\delta Y}{\delta f}$,

as the elasticity of output with respect to factor f, then $\frac{\delta}{\delta t} \left(\frac{\delta Y}{\delta f} \right) = \left(\frac{\delta^2 Y}{\delta f \delta t} \right) = \lambda f$ is

technology biased change with respect to the factor f. On this basis we can make the following definitional pronouncement:

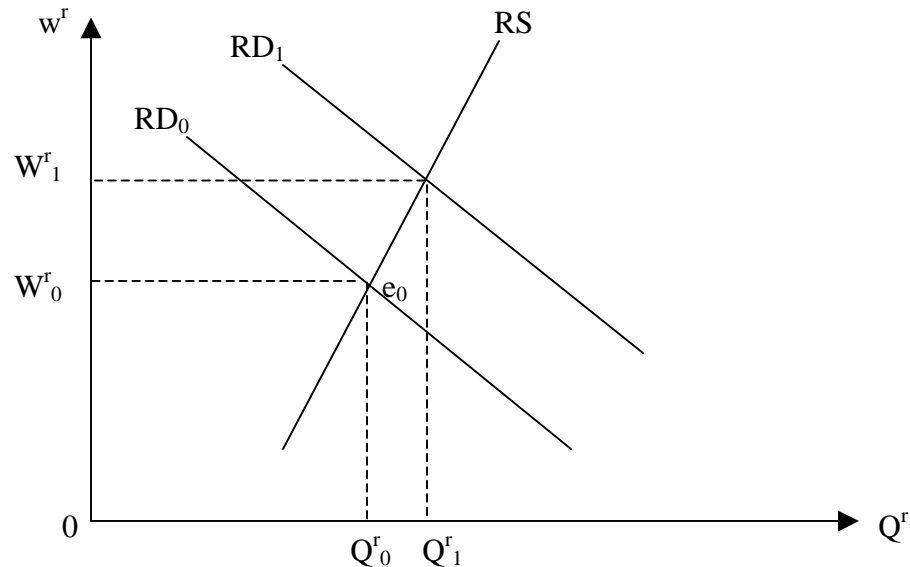
$\frac{\delta^2 \ln Y}{\delta \ln S \delta \ln t} > 0$, then technology change is absolutely skills biased. Absolute skills biased technological change occurs when a change in technology leads to an increased demand for skills because its marginal product has increased.

$\frac{\delta^2 \ln Y}{\delta \ln S \delta \ln t} < 0$, then technological change is biased (absolutely) against skilled labor.

Skills biased technological change (SBTC) as induced by modern technologies refers to change which leads not only to an increase in productivity, but also to an increase in the employment of more skilled workers. Consequently, employers increase their demand for a relatively greater amount of skilled workers. At the same time, there is a progressive relative decrease in the demand for unskilled workers.

To explain the differences in remuneration between skilled and unskilled workers, we can draw reference to fig 1 below. In this diagram the RD curve represents the national relative demand for skilled labor. The RS curve is the supply of skilled labour relative to unskilled labour. Initial equilibrium in this scenario occurs at the point where $RD_0 = RS$, indicated by e_0 in the diagram.

Fig 1: Relative wage determination in the labor market



In Figure 1, the relative wage of skilled workers to unskilled workers, W_0^r , is given by W^s/W^u where W^s is the wage of skilled workers and W^u is the wage of unskilled workers. Q^r is calculated in the same way and represents the relative employment of skilled workers to unskilled workers. In this setting a skills premium occurs when either RS shifts leftwards and/or RD shifts rightwards.⁶ The RS curve can be influenced to shift by a number of factors, including investment in tertiary level education, and international trade and migration (Slaughter 2000). Investment in tertiary level education can help shift the RS curve rightwards by providing a greater flow of skilled students at every relative wage rate.

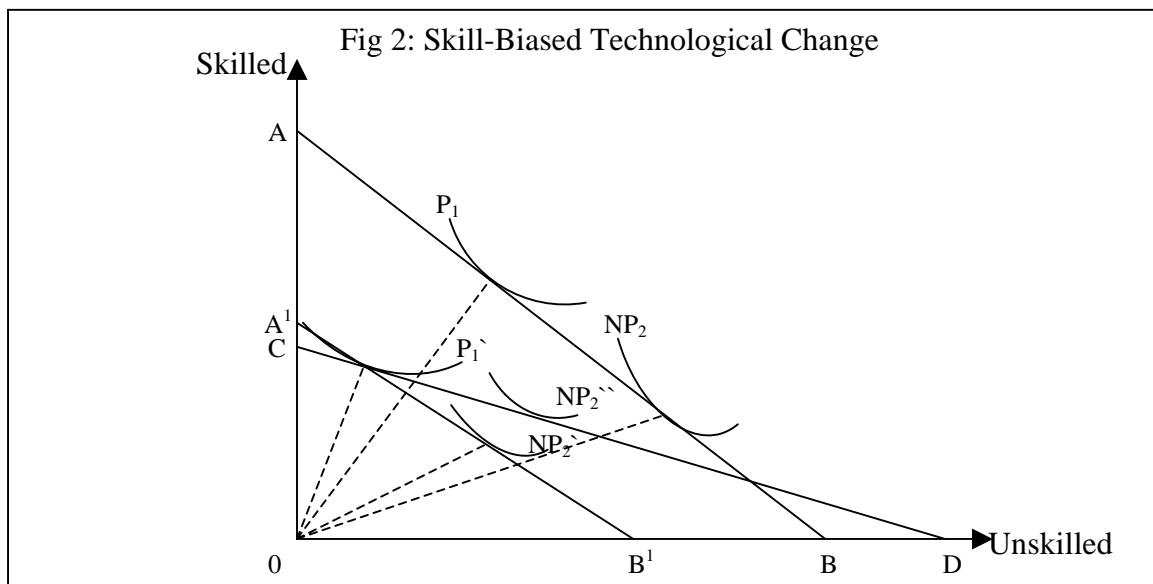
Because factors of production are embodied into trade of goods and services international trade can influence the W^r in an economy. Thus T&T exports ammonia, methanol, urea, LNG and iron steel products are much more skill intensive than unskilled labour intensive. Trade in goods implies trade in factor services. Slaughter (2000) notes that if input-output tables are used, trade flows can be “converted” into “embodied factor services”. The RS curve shifts leftward if the export of skilled labour relative to unskilled labour is greater than imports of the same.

Immigration increases the stock of skilled workers whilst emigration reduces the stock. The ‘brain drain’ by reducing the number of skilled workers in an economy can therefore extend the size of the relative wage gap between skilled and unskilled workers.

⁶ Slaughter’s labor market perspective infers that wage inequality between skilled and unskilled workers is the result of the interaction of the demand and supply for skilled labor.

The RD curve can shift to the right if there is a skills biased technology change (SBTC) in the economy. Thus if FDI has led to widespread SBTC then this would lead to an increase in the wage of skilled workers relative to unskilled workers.

Figure 2 below, can be used to supplement the analysis above and is deployed to explain the implications of a change in technology introduced by foreign MNCs on wages in T&T. A substantial amount of the FDI inflows into the T&T economy targets the petrochemical sector and this sector is very skills oriented and capital biased. In the context of T&T, we may hypothesize the influence of SBTC as follows: in initial conditions the economy is characterized by two distinct types of labor – human capital intensive (skills) and physical labor (unskilled), the economy produces two goods, petrochemicals (P) and non-petrochemicals (NP), the production functions characterizing the output of these two goods are concave to the origin. If we let initial conditions be such that petroleum goods (FDI intensive) can be produced using isoquants such as P for the petroleum sector and NP for the non-petroleum commodity.



If we assume that there is a pervasive SBTC change which occurs in all economies in the P good sector, then with SBTC the demand for both skilled and unskilled workers may increase but the relative increase in demand for skilled workers will outstrip that of unskilled workers.⁷ On the other hand, and if we assume that the economy is characterized by homothetic preferences, the end result will be a disproportionate expansion of the good which uses unskilled labour intensively. The consequence of this is a decrease in the production of the good which uses the unskilled factor of production intensively, this change being manifested in the unit cost curves of the firm. With the leftward shift in unit cost curves the relative wages received by unskilled labor will fall and this decline is manifested in a shift in the relative wages of unskilled workers in relation to skilled workers from $A'B'$ to CD. In this context then, Berman et. al., note that

⁷ A measure of skill premium is the ratio of the average annual wage of production workers to non production workers, in the manufacturing sector.

pervasive SBTC is a possible explanation for an increase in skill premium even for small open economies.⁸

Empirical evidence of the impact of FDI on wage inequality in developing economies

There are two broad types of empirical studies on the effect of FDI on wage inequality – these are: macro and micro studies. At the macro level, Feenstra and Hanson (1997) found that rising wage inequality in Mexico is on account of increasing inflows of FDI. For the period 1975-1988, these researchers found that an increase in FDI led to an increase in the relative demand for skilled labor. In those regions where there was a concentration of FDI, the growth in FDI accounted for as much as 50% of the growth in skilled labor's wage share.

Driffield and Taylor (2000), studied the relationship between FDI and wage inequality in the UK focusing on 3 digit industry data for the period 1983 to 1992. Using alternative measures of FDI these researchers, found that FDI had a strong positive influence on wage inequality in both the current time period or even if lags are introduced. In their study, Driffield and Taylor corrected for the influence of technology and trade.

Figini and Gorg (1998), analyzed the FDI wage inequality problem for Ireland. These authors approached the study from an econometric standpoint. Focusing on pooled data for the time interval 1979 to 1995, these researchers proxied skilled workers in manufacturing by administrative and technical staff, and unskilled workers by industrial workers. Figini and Gorg found FDI at first led to an increased degree of wage inequality between skilled and unskilled workers within the same manufacturing sector, although this gap eventually narrowed.

te Velde and Morissey (2001), using data from the 1990s investigated whether foreign firms offered higher wages for workers of the same level of skill and whether the benefits accrued principally to skilled workers. These researchers focused on individual wage rates and found that these increased on average by 20%-40% with foreign ownership. If accommodation was made for the fact that foreign owned firms are generally larger or locate in specific type of industries (higher wage industries) or particular geographic regions (high wage regions)⁹ then the average increase in individual wages was in the range of 8-23%. These authors also found that indigenous firms learned the technologies of the MNCs by imitating them so that previously unskilled workers can eventually earn higher salaries having learnt the new technologies.

The empirical evidence that FDI promotes wage inequality is not, however, unchallenged. te Velde and Morrisey (2002) investigated the FDI-wage inequality problem by focusing on 5 East Asian economies for the period 1985-1998. Using an ILO

⁸ This type of technological change is treated in the literature as occurring with a greater degree of computerization of the workplace in some of these countries.

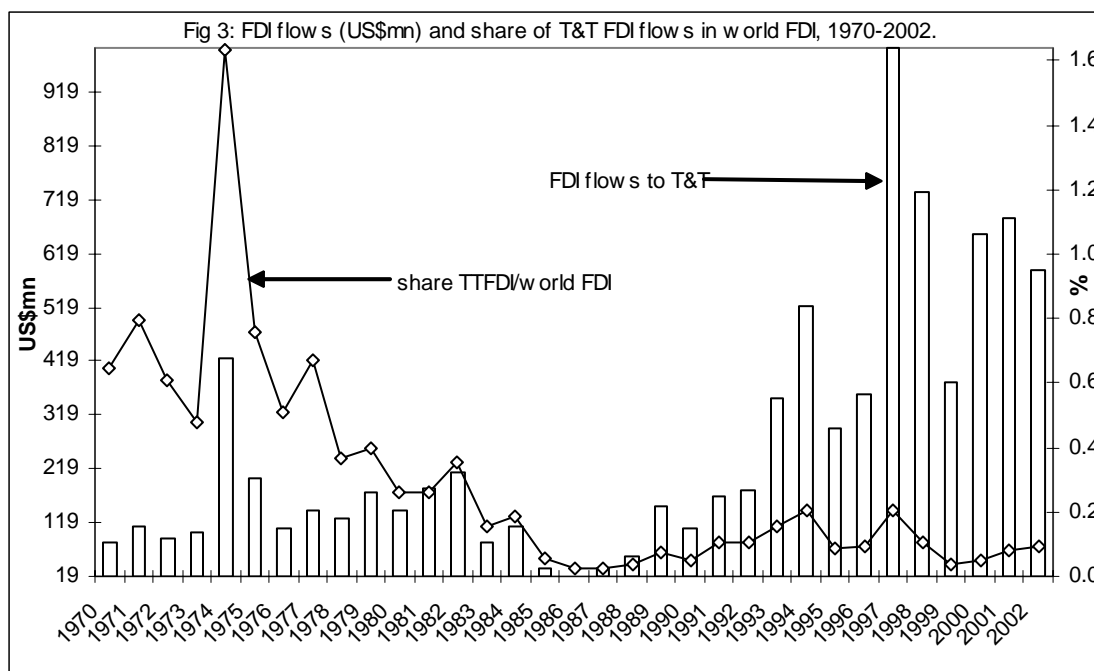
⁹ Studies which make these type of disaggregate analysis have been referred to by the ODI Briefing Paper (2002) as micro studies. The more aggregate studies are macro studies.

database these researchers found that FDI did not lead to a reduction of wage inequality in these East Asian Economies.

In another study, Matsuoka (2001), found evidence which suggest that foreign firms offered a higher salary to non-production employees than to production (skilled) workers. Matsuoka's study was based on 5,122 manufacturing firms in 1966 and in 1998 on 2,407 firms. Matsuoka did not find any significant difference in labor productivity between foreign and local firms, and he concluded that this difference is attributed to imperfections in the labor market such that the market for skilled labor is controlled by large MNCs. In this regard, therefore, differentials in wage levels is due to the relative bargaining strengths of the more skilled workers rather than skill specific change associated with foreign ownership.

Other authors, however, have not found similarly convincing evidence. For example, Blonigen and Slaughter (1999) and Slaughter (2000), in reviewing the effects on wages of FDI in flows and outflows from the USA, did not find any significant influence of FDI on relative shifts in the demand curve for US labor. Further, Blonigen and Slaughter (1999), focusing on the US economy did not find a significant correlation between FDI and skill upgrading (and hence wage inequality) in that economy. Freeman et. al. (2001) found no consistent evidence to support the notion of a relationship between FDI and wage inequality for a large bloc of developing economies.

Overall then, the jury is still out from an empirical perspective concerning the impact of FDI on wage inequality.



FDI trends and policy in T&T

Figure 3 above illustrates the trends in FDI flows in T&T and the share of T&T's FDI flows as a proportion of world FDI flows. Specifically, in 1970 T&T received US\$83.2m in FDI flows or 0.64% of global FDI flows. In 1974, T&T received US\$102.7m or 1.64% of international FDI flows. After 1974, however, FDI inflows to T&T moderated at first and then fell in the aftermath of the decrease in oil production.¹⁰ In 1986, T&T received a mere US\$29.9m in FDI inflows or 0.023% of world FDI flows. After 1986 there was a resuscitation of FDI flows into the T&T economy with US\$587mn flowing into the economy in 2002 or 0.09% of world FDI flows.¹¹

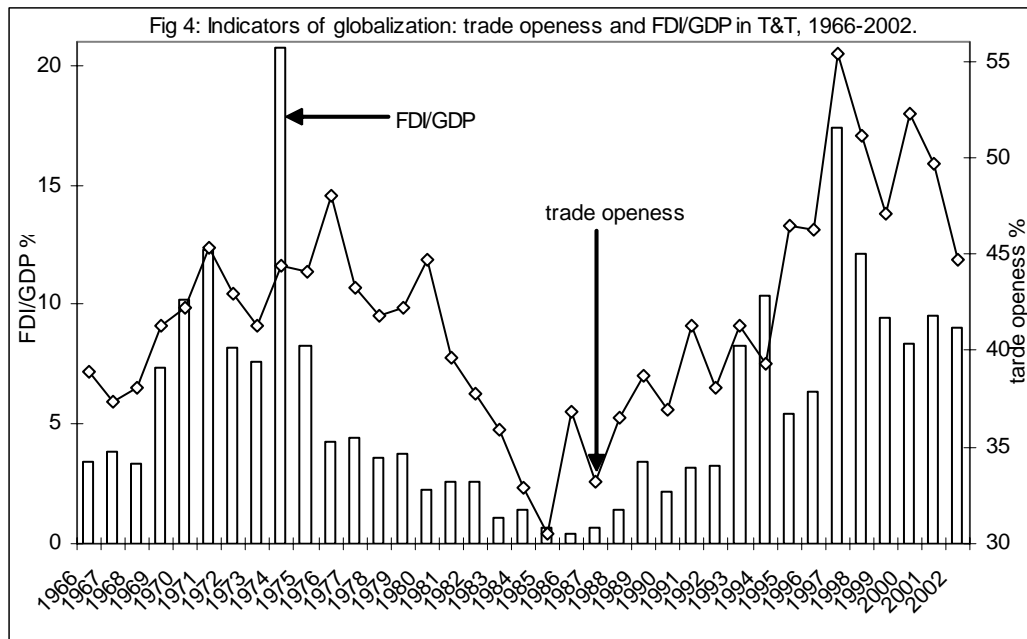


Figure 4 above provides two differing indicators of the extent of globalization in the Trinidad and Tobago economy engages. These variables are: FDI as a percentage of GDP and trade openness. These variables are very closely correlated and especially after the mid 1980s, both variables simultaneously indicate a greater element of integration of the T&T economy with the global economy. The correlation between these two variables is 70% for the period 1966-2002 and 84% for the period 1986-2002!

¹⁰ T&T is a price taker in the international crude oil market. In terms of production, for the period 1966-2002, oil production peaked in 1978 but then decreased continuously until 1998, beyond which a resuscitation of FDI inflows and increased exploration and production activity led to several new oil discoveries.

¹¹ In 1997, T&T received US\$1bn in FDI inflows. This FDI was targetted at the construction of a Liquidified Natural Gas Plant. The main partners are British Petroleum (UK), Tractabel (Italy), British Gas (UK) and a local state owned firm the National Gas Company.

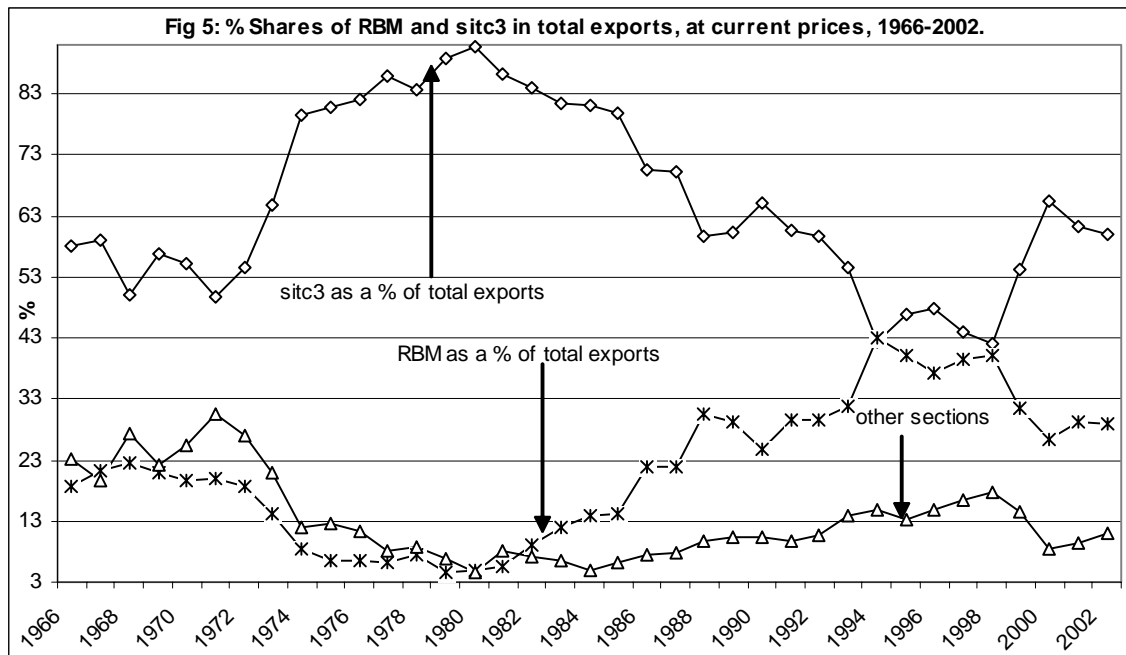
Table 2: Net FDI inflows, US\$m, 1975-2001.

Item	Petroleum Industries	Food Drink and Tobacco	Chemicals and Non-Metallic Minerals	Assembly Type and Related Industries	All Other Sectors	Total
1975	216.96	1.38	1.66	0.14	-22.07	202.81
1976	104.47	1.72	-15.98	1.84	14.59	107.01
1977	104.17	12.67	2.88	7.75	7.96	140.08
1978	108.42	2.08	1.33	3.71	6.46	126.96
1979	147.33	8.00	5.08	0.21	6.83	173.58
1980	102.75	0.21	11.00	8.08	10.08	136.96
1981	301.04	-2.33	1.50	2.21	2.46	304.33
1982	210.04	11.00	9.71	4.33	15.13	257.25
1983	90.00	11.50	3.08	-1.25	8.08	115.08
1984	101.58	4.92	2.33	0.96	3.42	113.21
1985	36.04	0.25	2.71	-0.42	12.13	50.71
1986	30.83	22.36	4.22	-2.19	-35.3	19.92
1987	24.17	2.72	0.83	1.39	4.03	33.14
1988	55.4	4.6	0.3	-1.2	4.3	63
1989	86.7	2.4	-0.5	0.1	59.7	148.9
1990	64	4.9	-2.9	0	42.9	109.4
1991	125.1	2.7	-0.5	0.4	16.7	144.1
1992	153.2	-0.5	0.3	0.3	16.1	171
1993	348.9	1.9	0.1	-0.4	17.9	372.6
1994	274.87	5.7	128.59	-1.9	112.31	520.57
1995	266.1	3.2	1.7	-0.4	19.01	295.81
1996	334.7	4.3	2.3	0.7	9.9	356.3
1997	954.2	8.4	2.3	-0.1	31.7	999.6
1998	559.7	9.1	2.2	-0.1	119	731.9
1999	467.7	3.8	2.9	0.1	169.3	643.3
2000	613.7	-21.3	1.8	-18.4	102	679.5
2001	816.3	-18.1	-0.3	-18.1	31	834.9

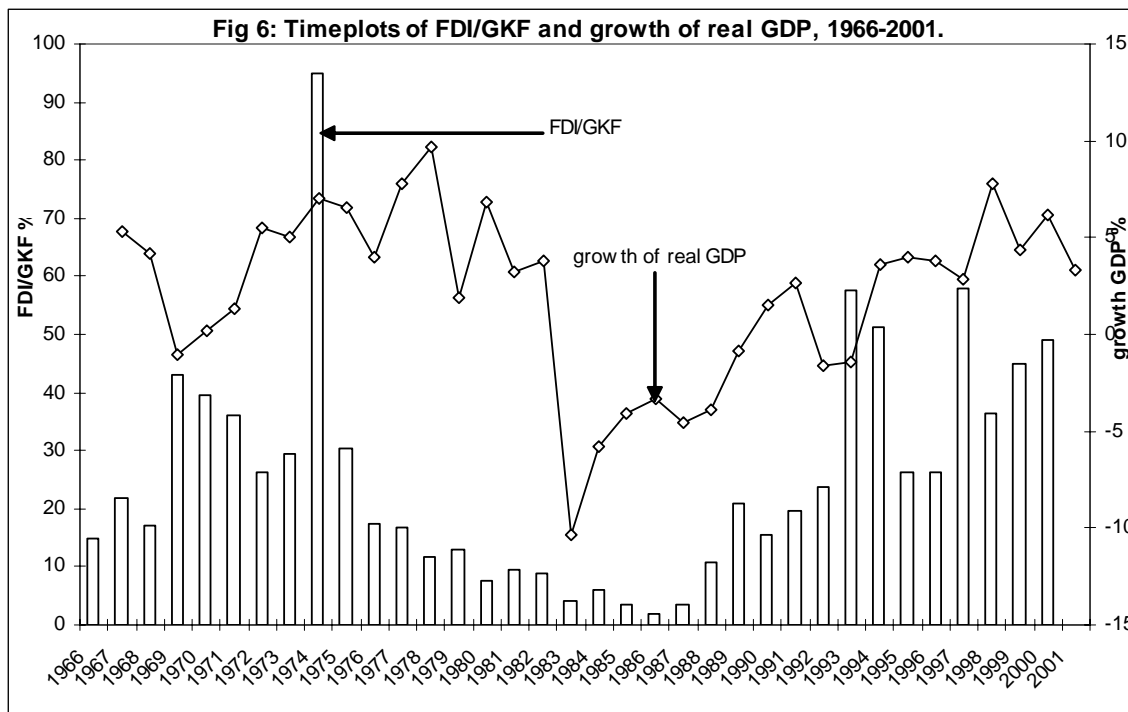
Source: Balance of Payments of T&T (various years)

As the Table 2 above illustrates, the principal amount of net FDI flowing into T&T is targeted at the petroleum industries sector.¹² For the period 1975 to 2001, FDI inflows to the petroleum sector as a proportion of total net FDI inflows decreased from 106.9% to 97.6%. In sum, the petroleum sector received 85.3% of cumulative net FDI flows to T&T for the period 1975 to 2001. From a historical perspective therefore it seems almost obvious that the petroleum sector is FDI intensive.

¹² The T&T C.S.O. provides data on national output in two main format – the Trinidad and Tobago Standard National Accounts (TTSNA) and according to International Standard Industrial Classification (TTISIC). The key difference between these two measures is that the TTSNA ‘pulls’ oil refining and petrochemicals, which are categorized as part of the TTISIC into the broad group of petroleum industries under TTSNA.



The petroleum industries sector, consists mainly of the resource based manufacturing sectors e.g. ammonia, urea, methanol (sitc 5) and crude oil exploration, production and oil and natural gas refining (mainly sitc 3). As the graph above illustrates the share of sitc 3 exports as a percentage of total exports has never fallen below 42.1% in the period 1966-2002, with its share averaging 65.3% per annum of total exports for the same period. In 1980, the share of sitc3 as a proportion of total exports peaked at 90.6%. Collectively resource based manufactures and sitc 3 accounted for 76% of total exports in 1966 as compared to 89% in 2002 (see Figure 5).



The importance and influence of FDI on the T&T economy can also be ascertained from Figure 6 above. Specifically, one can observe that as a proportion of gross capital formation, FDI flows increased from 14.9% in 1966 to 95% in 1974. From 1974 until 1986, FDI as a percentage of GKF fell almost continuously with the 1.9% value in 1986 being the lowest recorded ratio for the time interval 1966-2001. After 1986, FDI as a percentage of GKF showed definite signs of improvement and its 48.9% value in 2000 was forty seven (47) percentage points higher than in 1986. Figure 6 also provides a powerful indication of the strong positive relationship between the share of FDI flows in GKF and the growth rate of real GDP in T&T. The nature of this relationship can certainly adopt a bivariate feedback form i.e. one variable causes and is caused by the other. Specifically, private FDI inflows will only flow into T&T if its return is buoyant. Expanding FDI inflows, can working through the multiplier, trigger an increase in real GDP. Increases in real GDP in turn, can allow a government to expend more resources on physical infrastructure etc. and this in turn may facilitate an expanding FDI inflow.

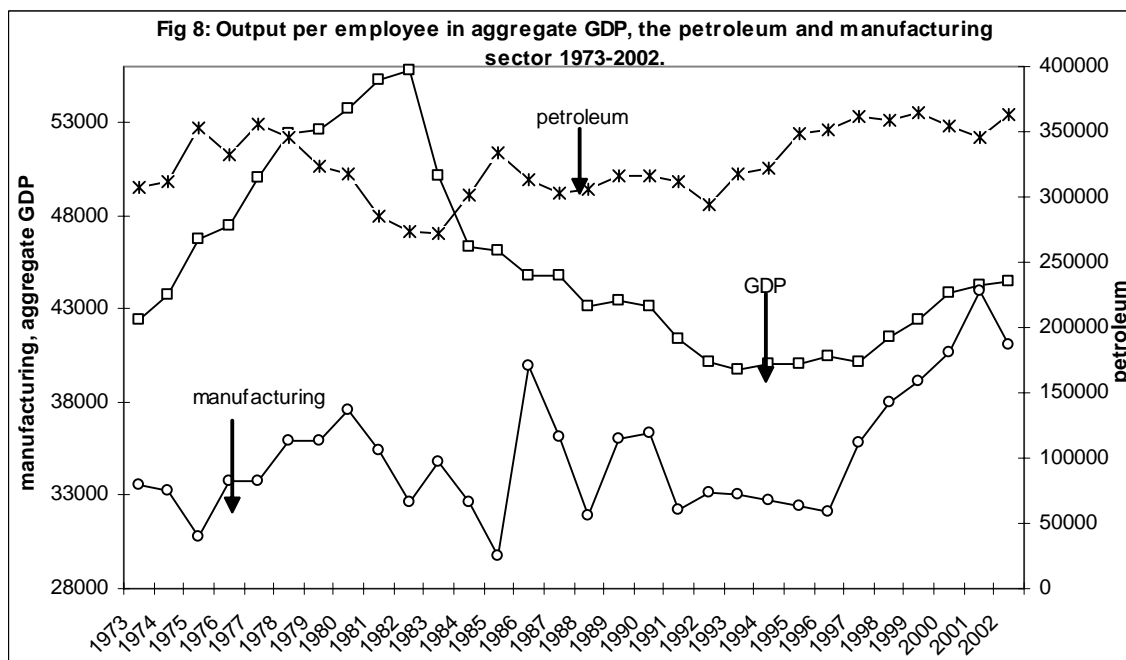
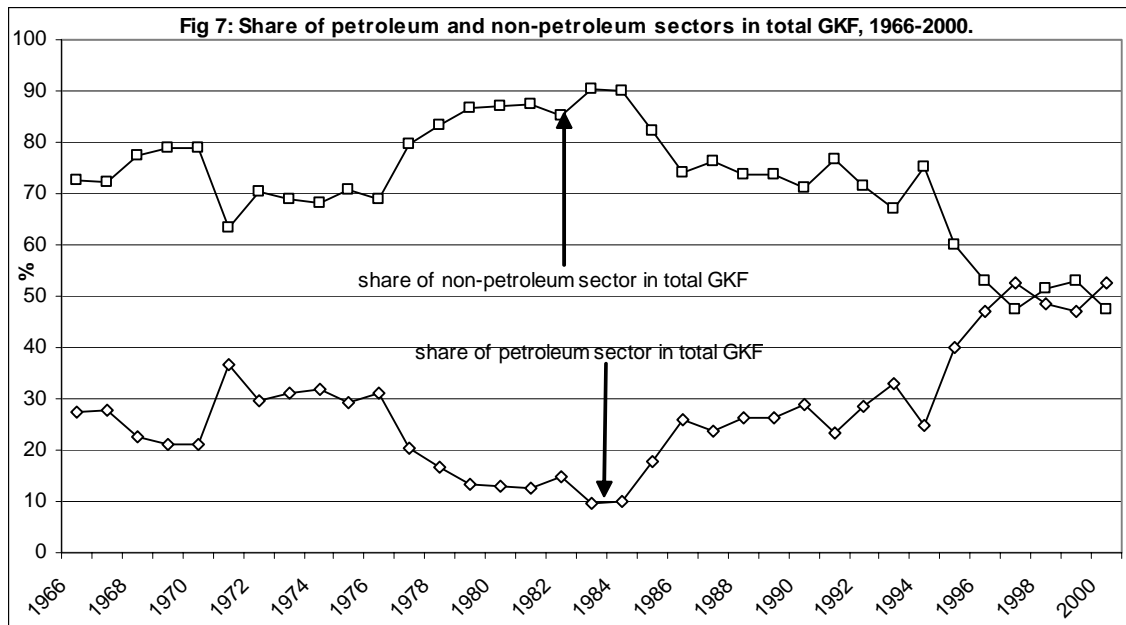


Figure 7 and 8 above show that the petroleum sector, no doubt influenced by its high stock of capital and perhaps more efficient and better practice technology, has a much higher level of output per employee than aggregate GDP or the manufacturing sector.

Host Country MNC share of FDI investment income

Table 3 below shows the FDI income that foreign firms receive from their investment in T&T. Between 1989-2001 T&T received US\$6,008.2m in net FDI in flows. During this same interval of time FDI investment income in T&T amounted to US\$3,992.4m, of which 57.4% were remitted abroad. Of the investment income flows remitted abroad, more than 42%, went as profits. Otherwise stated, remittances abroad over the data period were enough to build at least two LNG plants each valued at US\$1bn.

	FDI	FDI investment income	Remittance/FDI investment income	Profits/Remittance
1989	148.9	206.8	55.85	73.33
1990	109.4	242.6	69.25	72.92
1991	144.1	256.9	54.42	85.05
1992	171	289.2	52.94	74.92
1993	372.6	202.4	54.79	56.27
1994	521	301.2	37.05	62.01
1995	295.7	309.8	50.03	51.81
1996	356.3	284.3	40.45	55.74
1997	999.6	289	56.71	36.61
1998	731.9	270.2	68.28	24.17
1999	643.3	338.9	55.30	15.90
2000	679.5	533.3	72.66	16.85
2001	834.9	467.8	64.17	17.06

Source: Balance of Payments Yearbook (various years).

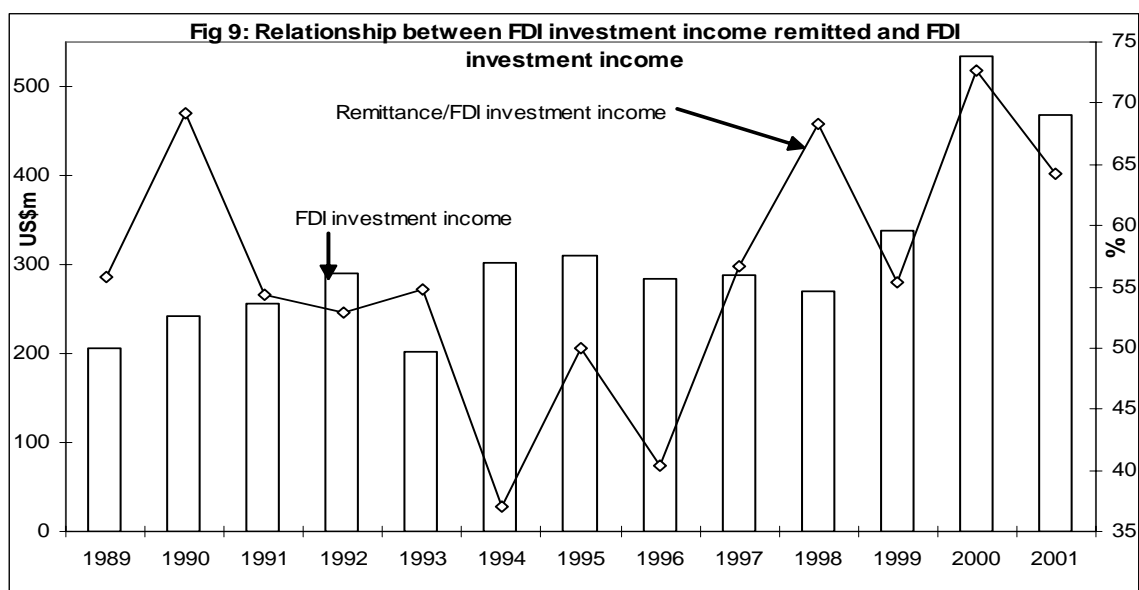


Figure 9 portrays a very interesting scenario as concerns FDI flows into T&T: greater inflows of FDI in T&T appears to be associated with a generally higher degree of investment income being remitted abroad. Specifically, in 1994 remittances abroad as a percent of investment income was 37%, however, as these FDI inflows expanded, the corresponding share of investment income remitted abroad also increased and reached as high as 72% in 2000. In a sense this reflects a greater degree of *inequity* as the host economy appears to benefit from an increasingly smaller share of the investment income for the period 1989-2001. Policy makers in T&T will have to pay greater attention to the size of the remitted share of investment income as it partly reflects a certain amount of economic milking of the host economy.¹³

FDI and Dualistic wage structures

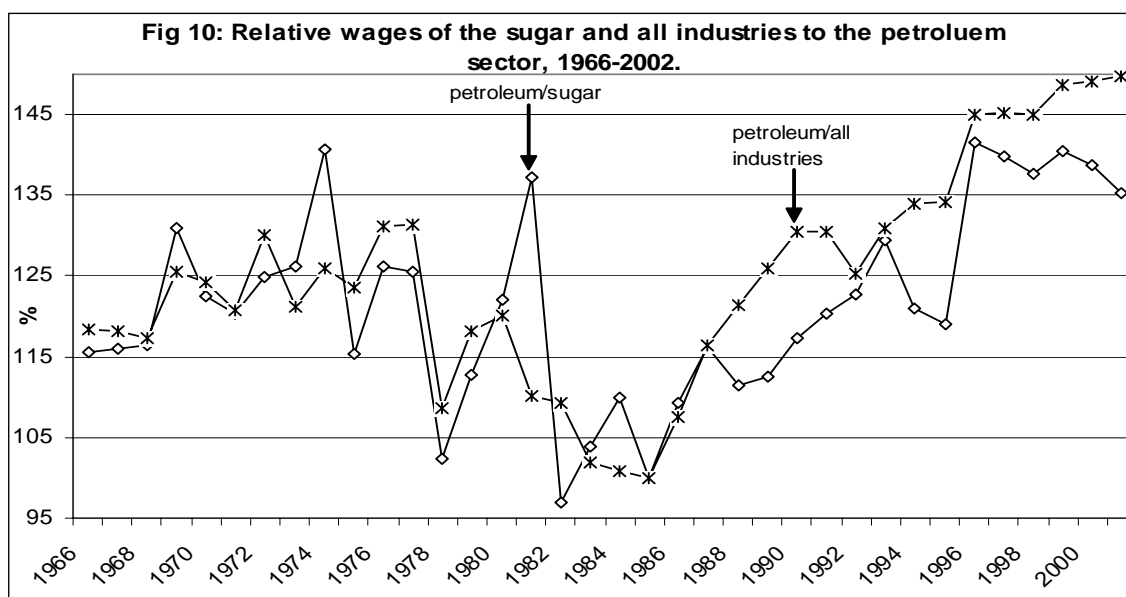


Figure 10 above clearly illustrates that wages in the petroleum sector are at a premium to the other sectors of the economy (e.g. the sugar sector) which did not explicitly benefit from FDI flows. It should also be observed that since the T&T economy's greater thrust at globalization in the late 1980s, the relative wage rates of petroleum sector workers increased at a faster pace than that of the sugar sector and all other industries. This provides some support for the assertion that FDI has triggered a dualistic wage system in T&T.

¹³ This points to the need to identify appropriate benchmark sharing indicators of investment income between the host country and the MNC. It also emphasizes the importance of maintaining well defined Local Content Requirements (LCR) in the corporate and economic responsibility of MNCs with the communities they engage.

Table 4: Summary Characteristics of Heads of Household by industry.						
Industry of Head	% distribution of household	Average Size of household	Average Monthly Household Income	Average Monthly Household Expenditure	Per capita monthly Household Income	Per capita monthly Household Expenditure
All Industries	100	3.88	5144.4	3515.5	1324.8	905.3
Sugar	3.01	4.29	4206.6	2771.4	980.7	646.2
Petroleum & Gas	3.34	3.86	6682.1	3975.1	1731.1	1029.8
Construction	17.25	4.19	3933.8	2753.1	938	656.5
Other Agriculture	7.22	4.04	3471.0	2391.6	980.8	646.2
Community social and personal services	28.7	3.84	5627.4	3822.3	1466.5	996.1

Source: Household Budgetary Survey (1998)

The table above provides data on the comparative income attributes of head of households in T&T, as classified in the 1998 Household Budgetary Survey. This data corroborates the dualistic wage elite argument that is projected in the discussion above. Specifically, observe that the petroleum sector employs much less “heads of households” than construction or other agriculture, although it employs marginally more workers than sugar. On average a household whose head works in the petroleum and gas sector, earns a monthly income 158.8% that of sugar or 196.9% that of the construction sector. The average household expenditure of a household whose head works in the petroleum and gas sector is 143% that of the monthly household expenditure of a household whose head works in sugar. The corresponding ratios with the construction and other agriculture sectors are 166.2% and 166% respectively.

Clearly then, workers in the petroleum sector enjoy a higher wage rate than workers in other sectors of the economy, and this wage rate has spilled over into higher consumption patterns, providing additional evidence that T&T is a dualistic wage economy. From the perspective of Sir Arthur Lewis, this is not surprising as the Lewisian Industrialization by Invitation thesis explicitly emphasized that the way to structurally reengineer labor surplus economies, involved the capitalist sector offering a wage premium above that of the traditional sector so as to preserve a consistent flow of labor.

FDI, employment and wages: Reflecting on Wage Inequality in Trinidad and Tobago¹⁴

To reflect on the influence of FDI on wage inequality, it is necessary to investigate the trends in the wages of (i) production workers (typically more skilled workers) to non-production workers (typically unskilled workers). For T&T, since the labour and employment database provided by the Central Statistical Office (CSO), does not offer data on non-production workers, data on all employees (which is provided) is used as a proxy.

In Table 5, two sets of data are shown, the average relative weekly wages of production workers to all employees in all industries excluding the petroleum sector and (ii) in the exploration and production of crude oil and natural gas sector. What emerges is that in all industries excluding the petroleum sector the average relative weekly earnings of

¹⁴ In general wages and salaries usually constitute the largest component of the average household income in T&T so that an increase in wage inequality is usually indicative of an increase in income inequality.

production workers to all employees actually fell by 13% i.e. there was a lower degree of wage inequality. In the exploration and production of crude oil and natural gas sector, skilled workers, however, realized a 54% comparative increase in average relative weekly earnings in the time interval 1995 to 2002. The correlation between the relative average weekly earnings of production workers in the crude oil exploration and production sector and FDI/GDP was 70%, providing some support that a greater degree of globalization manifested in the form of a higher level of FDI to GDP ratio facilitated an increase in the wages of skilled workers.

Table 5a: Ratio of average weekly earning of production workers to all employees, 1995-2002.		
	All Industry index excluding petroleum sector	exploration and production of oil and natural gas
1995	100	100
1996	102.741	119.2758
1997	100.349	140.6284
1998	93.80098	143.9394
1999	101.3611	125.8699
2000	97.77778	137.7246
2001	94.30894	144.5081
2002	87.02532	154.0417

Table 5b: Changing Skill Intensity in Petroleum and Non-Petroleum sector, 1989-2001.		
	skilled to unskilled in the petroleum sector	skilled to unskilled workers in the non-petroleum sector
1989	19.29	24.94
1990	7.76	25.47
1991	22.07	23.35
1992	28.57	24.06
1993	30.97	26.87
1994	23.20	24.85
1995	31.40	24.78
1996	27.91	26.31
1997	31.75	26.66
1998	30.60	26.52
1999	32.74	26.17
2000	31.67	25.84
2001	30.00	28.00

Source: Computed from data in the T&T Continuous Sample Survey of the population

Panel 5b of Table 5 above, shows that in the FDI intensive petroleum sector, the ratio of skilled employees to unskilled employees increased whilst the corresponding ratio for the non-petroleum sector fell.

Trade union militancy, FDI and the Dutch Disease

Table 6: Characteristics of striking workers in the petroleum sector.

TOTALS	PETROLEUM/all industries			ALL INDUSTRIES (excluding Petroleum)/ all industries		
	Total Stoppages - No. of Incidents	Total Stoppages - Workers Involved	Total Stoppages - Man Days Lost	Total Stoppages - No. of Incidents	Total Stoppages - Workers Involved	Total Stoppages - Man Days Lost
1973-1999	17.42	22.92	19.03	82.58	77.08	80.97
Average 1970s (a)	10.14	12.47	18.11	89.86	87.53	81.89
Average 1980s	15.45	18.39	9.62	84.55	81.61	90.38
Average 1990s	24.48	34.77	29.09	75.52	65.23	70.91

(a) refers to 1973-1979, refers to 1990 – 1999.

From another perspective, the data in Table 6 above shows that for the decades of the 1970s, 1980s and 1990s, the average number of man days lost in the FDI intensive petroleum sector has increased. A similar trend has occurred for the number of workers involved. Whilst the number of strikes decreased in the 1980s, as the T&T economy plunged into a recession, there was a strong reversal of affairs when economic growth returned in the 1990s with 29.1% of all strikes per annum occurring in the FDI-intensive petroleum sector during this period. The other data in the table illustrating the petroleum sector's worker militancy, follow the same trend as that of the total number of stoppages. The clear overall indication then, is that across the three decades, the incidence of militancy in the petroleum sector increased relative to all industries -- the presence of stronger and more militant unions in the FDI predominated sectors also has an influence on wage inequality. Typically, labor costs in the FDI predominated sectors is a mere fraction of total costs and so these sectors can concede wage increases much more easily than the non-FDI benefiting sectors.

Although varied strengths of unions may offer differing ability to bargain for increases in wage rates and help to perpetuate inequality, the resource movement and spending effect attributes of the Dutch Disease¹⁵ will usually translate, in the context of a booming economy nearing 'full employment'¹⁶ that other sectors will also benefit from wage increases, even if it occurs with a lag. In economies with these attributes, the net effect of greater wage demands by a segment of the labour market typically results in overall increases in the domestic price level and regardless of the exchange rate regime at work in a loss of external competitiveness in the overall economy.

¹⁵ See Corden 1982 for a theoretical discussion of the Dutch Disease and Hosein and Tewarie (2004) for an applied discussion in the context of the T&T economy.

¹⁶ A number of factors seem to be pointing to the T&T economy reaching close to full employment. E.g. after 1999, T&T experienced growth rates of 5.8%, 2.1%, 4.6% and 6.7%, this resulted in an increase in real GDP from TT\$22,036.7m in 2000 to TT\$25,225.5m in 2003, an increase of 14.6%. In the same interval of time the unemployment rates remained constant. Some indication of full employment is also provided by changes in the price level which in the period 1995-1999 averaged 3.9% per annum, whilst in the four year period thereafter it averaged 4.2% per annum indicating in part, the pressure of increasing domestic demand.

Conclusion

Although this paper takes the position FDI promoted wage inequality in the small highly open petroleum rich economy of Trinidad and Tobago, it argues that FDI flows still offer significant benefits and that a policy of restricting foreign ownership would compromise the capital formation process. Unless wage equality is the only objective of the government of T&T, then FDI should be encouraged by Government. Given that T&T is a small hydrocarbon rich economy, and based upon the trend observed with regards to the inflows of FDI in the last decade, this section however, focuses on detailing some relevant complementary policies which the government of T&T can implement to reduce wage inequality in the presence of high FDI inflows.

Since FDI utilizes skilled workers more than unskilled workers then a strategy of universal primary and secondary school education should be implemented. It is to credit of the T&T government that such policies have already been implemented, however, there needs to be greater emphasis on quality and on improving the output of these systems. This may require reducing the pupil to teacher ratios, investing in proper computer laboratories at both the primary and secondary school level and providing standardized but modern libraries in all primary and secondary schools. Such skills biased strategies will help to ensure that segmented labour markets for skills dominated by MNCs, do not develop further.

Investment in human capital formation stands out as a key option available to policy makers as it can help to facilitate an improvement in the productive capacity in all factors of production. Although primary and secondary schooling has its merits, tertiary level education has to be emphasized as it is the gateway through which best practice scientific, engineering and organizational developments get transmitted to the domestic economy. The T&T government, in this regard, must be commended for their focus of attention on increasing the enrolment of graduates in the age group 15-24 years to 60% by the year 2015. The government has introduced the Government Assistance for Tertiary Expenses (GATE) program which provides the opportunity for the poorer segments of society to get access to the second half of their fees and has promised that in 2008, tertiary education will be free for all citizens.

Another policy option that the government of T&T can support is the formation of training institutions which help to enhance the skills of more unskilled workers currently working with MNCs. In this regard, although catering to quasi unskilled or semi-skilled workers, the University of Trinidad and Tobago stands out as a classic example. However, the plans for TTIT, University of Trinidad and Tobago (UTT) and COSTAAT (College of Science and Technology and Applied Arts) and the relationship with the main regional University of the West Indies remain unclear and this is cause for concern.

Policy makers may also wish to consider the use of fiscal incentives which can enhance on the job training. Thus companies can be offered tax rebates in excess of 100% (subsidies).

Additionally and as te Velde (2001) identified in the case of Singapore, the government of T&T may find it worthwhile to offer specific training of a vocational or other nature for less skilled staff employed with foreign firms. te Velde noted that in Singapore, for example, the Productivity and Standards Board implemented a 1% levy on firms for every employee earning less than a predetermined minimal amount of income. The receipts from this levy in turn, are distributed to those employers who send their employees on appropriate training courses. The government of Singapore views this as a strategic way to deal with skill upgrading as firms do not have sufficient private gains to derive from training employees who may be footloose.

Since the empirical literature reflects that foreign firms offer more training to skilled workers, then the obvious policy suggestion for lower wage inequality is to encourage FDI to target less skilled workers for training.¹⁷

There are certain policies which when implemented directly with regards to FDI can ensure equity among beneficiaries. Similar effects can be achieved through the implementation of more general policies. Policy can be designed and implemented to ensure that the poor benefit from FDI either directly or indirectly, and these include maximizing employment opportunities, learning by watching (especially among local firms) backward and forward linkages, as well as quality control and standard benchmarking. MNCs can also affect the social and economic infrastructure of an economy. For example, the government can also use the fiscal receipts from foreign investment to invest in health and education.

MNC activity can also be focused through the policy directive of the T&T government, to the establishment of training institutions, which from both a theoretical and practical standpoint as well has a direct correlation with improvements in productivity and quality of workers. Some of the options available to government include cost recovery hinged on training a minimum number of employees, training workers and tax credit.

With regard to specifically reducing wage inequality, it is important to recognize that FDI is only one factor which influences wage levels. Some of these 'other factors' such as the sector receiving the FDI or the geographic area may be under the influence of policy makers in the host economy.

Altogether, it must be acknowledged that FDI definitely has a role to play in the developmental process of small developing economies. Although wage inequality may result, the way forward is to seek ways and means to reduce the magnitude of the problem rather than an all out assault on FDI inflows.

The issue of getting better returns from investment also needs to be addressed, as the increase in the repatriation of profits by FDI's in the energy sector over the last decade is cause for concern. Government needs to address this issue, perhaps with even greater urgency within the shortest time frame, because of its longer term implications for

¹⁷ te Velde et. al (2002) argue that this should be treated as part of the corporate social responsibility of the MNC.

revenue. At the same time the human resource issues and wage inequality issues need to be systematically addressed for reasons of long term development, economic sustainability and social stability.

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