

THE INFLATIONARY IMPACT OF WAGE INCREASES IN THE JAMAICAN ECONOMY

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EXECUTIVE SUMMARY

The Joint Trade Union Research and Development Centre (JURTDC) commissioned the authors of this study to investigate the share of labour costs in the total costs of production in the Jamaican economy, and use this as a basis for estimating the inflationary impact of wage increases.

Data was obtained through elite interviews with executives of enterprises, sector studies, and official publications of the government of Jamaica. In no case were the authors able to disaggregate the data on compensation of employees into management and non-management personnel. Accordingly, the study was restricted to an estimate of the impact of a 10% increase in the total costs classified by the enterprises as (managerial and non-managerial) labour costs. This implies that the impact of wage increases for non-managerial labour will necessarily be lower than the estimate of the impact of increases of total labour in this study.

The estimate of the impact of a 10% increase in total labour costs on prices is obtained by adding the relative increase in total (labour and non-labour) costs arising from the wage increases, to an estimate of the additional demand financed by the wage increases.

The study concluded that :

1. labour constitutes 17-18% of total costs of production ✓
2. a 10% increase in (total) labour costs results in a 4.5% to 6% increase in prices, assuming that there is no change in either labour productivity or in the pattern of consumption out of income, or both.

I. INTRODUCTION

During the period 1989-1994, the annual inflation rate moved from 17.2% in 1989 to a high of 80.2% in 1991, then declined to approximately 27% in 1994. The factors contributing to the rate of inflation have stemmed mainly from the liberalization and deregulation policies by the government which have been guided by agreements with the multilateral institutions (IMF, World Bank, IDB, USAID). In particular, the removal of price controls and subsidies on goods and services, and exchange rate liberalization, contributed to the rate of inflation during these years.

Over the same period (1989-1994), the government has tried to keep wage increases in check by using formal and informal wage guidelines to restrict the level of wage increases, particularly in the public sector. As recently as 1994, the government refused to grant increases to the public sector workers that matched the rate of inflation on the premise that it would be inflationary. *

This study will determine the share of labour costs in total production costs in the various sectors in the economy. From this the impact of a 10% wage increase on inflation will be estimated. Section II looks at the record of inflation since 1977 and identifies its alleged causes. Section III examines the changes in the labour market since the inception of the structural adjustment processes, while Section IV seeks to determine the share of labour costs in the total costs of the economy. Section V estimates the inflationary impact of wage increases and Section VI summarizes the findings of the study.

II. THE CAUSES OF INFLATION IN JAMAICA, 1977-1993

Since 1977, the Jamaican economy has experienced relatively high rates of inflation, especially in the years 1977-1980, 1983-1985, and 1989-1993. In 1991, the rate of inflation reached as high as 80.2%. The average rate of inflation in each of the periods of high inflation (1977-80, 1983-85, & 1989-1993) was 28.0%, 23.7%, and 39.5% respectively.

TABLE II.1 - THE CAUSES OF INFLATION

KEY TO TABLE II.1

YEAR	RATE OF INFLATION, %	CAUSE	#	CAUSE
1977	14.1	1, 2, 3	1	EXCHANGE RATE
1978	49.4	1, 4, 10	2	SHORTAGES
1979	19.8	1, 2, 3, 5, 6, 8, 9	3	IMPORTED INFLATION
1980	28.6	2, 4, 5, 7, 8	4	TAXATION
1981	4.7	3, 8	5	WAGE INCREASES
1982	5.2	2	6	INTEREST RATES
1983	16.7	1	7	MONEY SUPPLY
1984	31.3	1, 7	8	OIL PRICES
1985	23.1	1, 4, 6, 10	9	SUBSIDY REMOVAL
1986	10.4	2, 4, 7	10	PRICE LIBERALIZATION
1987	8.6	2, 3, 5, 7		
1988	8.8	2		
1989	17.2	1, 3, 8, 9		
1990	29.8	1, 3, 8, 9, 10		
1991	80.2	1, 3, 4, 5, 7, 9		
1992	40.2	7		
1993	30.1	1, 4, 7		

Source : PIOJ, Economic and Social Survey, Various years

Table II.1 lists the causes of inflation for each year from 1977 to 1993 as reported in the Economic and Social Survey, published annually by the Planning Institute of Jamaica. The data shows that the devaluation/depreciation of the exchange rate was the most frequently cited cause of inflation. The movement of the exchange rate was at least partly responsible for the increase in the

general price level in 10 of the 17 years. TABLE II.2 shows the relative frequency of each of the causes of inflation as identified by the PIOJ between 1977 and 1993.

TABLE II.2 - CAUSES OF INFLATION BY FREQUENCY

CAUSE	FREQUENCY	RELATIVE FREQUENCY, %
EXCHANGE RATE	10	58.8
SHORTAGES	7	41.2
IMPORTED INFLATION	7	41.2
MONEY SUPPLY	7	41.2
TAXATION	6	35.3
OIL PRICE INCREASES	5	29.4
WAGE INCREASES	4	23.5 ✓
REMOVAL OF SUBSIDIES	4	23.5
PRICE LIBERALIZATION	3	17.6
HIGH INTEREST RATES	2	11.8

Source: Based on information in the Economic and Social Survey

In the high inflationary periods, the devaluation/depreciation of the Jamaican dollar vis a vis other foreign currencies was a significant cause. The importance of the exchange rate derives from the fact that the local economy is open, and there is a high propensity to import commodities from abroad. This makes the economy subject to changes in the economic conditions that prevail in the economies of Jamaica's main trading partners.

External influences, such as imported inflation, have affected domestic inflation especially between 1977 and 1980, when in particular, there were increases in the price of crude oil on the world market. Imported inflation was partially responsible for the rise in the domestic price level in approximately 40% of the years under review. The sensitivity to increases in the price of oil on the world market is easy to understand, as imported petroleum

accounts for about 97% of Jamaica's commercial energy supplies.

The most frequently cited domestic causes (aside from the movement of the exchange rate) were increases in the money supply, shortages of consumer goods and raw materials, and increases in taxes.

Since 1980, the growth of the money supply has been frequently cited as a factor in explaining inflation. The money supply growth affects prices when output is growing more slowly than the money supply. In that situation, more money will be available to purchase relatively fewer goods, thereby causing prices to rise.

Jamaica's two highest inflationary years, 1978 and 1991, have been partially characterized by heavy indirect taxes (1978) and the implementation of the General Consumption Tax (GCT) in 1991. In these years, the increased taxes resulted in increases in the price level in the economy.

The causes commonly cited in the high inflation periods were the movement of the exchange rate, imported inflation, and increased taxes. Wage increases were rarely mentioned as a cause of inflation over the review period. The presence of formal wage guidelines up to 1991 tempered the increases of wages and salaries in both the public and private sectors.

A number of academic studies have been done on inflation since the 1970's. The results of these studies [Bourne 1977, Manhertz 1977, Ganga 1992, Thomas 1992, and Downes, Worrell, and Scantlebury 1993] are broadly consistent with the factors that the PIOJ publications identified as being responsible for inflation. The period covered by Bourne and Manhertz was pre-1977, but their studies identified

the same basic set of causes.

The exchange rate, the most frequently cited factor influencing inflation, was found to be the most significant variable influencing prices in the economy by Thomas (1991). His conclusions were based on data for the years 1978-1990. Other authors [Ganga and Downes, Worrell & Scantlebury] agree that the exchange rate was important, but not necessarily the most important factor affecting inflation.

Growth in the money supply is a demand pull factor that causes increases when there is too much money chasing too few goods. Downes, Worrell and Scantlebury (1993) concur with Ganga (1992) that increases in the money supply have been partly responsible for the inflation rates between 1970 and 1991.

On the other hand, the impact of wage increases on inflation was shown [Ganga and Downes, Worrell & Scantlebury] to be insignificant in explaining the rising prices over the 1970-1991 period.

III. THE LABOUR MARKET SINCE STRUCTURAL ADJUSTMENT

Originally, the term structural adjustment referred to the policies and programmes that accompanied the loans that were granted by the World Bank to Jamaica between 1982 and 1985. These loans were to enable the economy to move towards export production. This definition of structural adjustment is rather limited as the policies instituted by the IMF as conditionalities for balance of payments support also required the economy to undergo an adjustment process. For purposes of completeness, we shall regard the structural adjustment process (SAP) as : the changes in the economy resulting from the stabilization policies that were implemented as conditions of loans from the IMF, from the liberalization of the economy as required by the World Bank structural adjustment loans (SAL's), from the conditions of the project loans by the IDB, and from the conditions of the USAID loans for balance of payments support.

Structural adjustment policies were instituted in order to correct certain weaknesses which were identified by the international lending agencies. The policies were supposed to improve the international competitiveness of the local production system and attract foreign investment, thereby putting the economy on a path of long term growth.

The SAP has focussed on the manipulation of three prices. These are the price of foreign exchange (the exchange rate), the price of credit (the interest rate), and the price of labour (the wage rate). Key policy tools have been wage guidelines and exchange

rate adjustments geared towards improving export competitiveness. Coupled with inflation caused by devaluation, removal of subsidies and the lifting of price controls, wage guidelines have helped to redistribute income away from the working class to the property owning classes. The SAP has also resulted in the compression of the traditional middle class of civil servants, policemen, teachers and nurses [Levitt 1991].

In examining the effect of these policies on the labour market, it is useful to look at what has occurred in terms of employment, wages, and income distribution.

EMPLOYMENT

The expansion of the public sector, which occurred prior to 1977, was halted in 1978 with the advent of the IMF conditionalities. However, the level of employment in the economy grew at approximately 1.6% per annum(pa).

TABLE III.1 - CHANGES IN EMPLOYMENT IN JAMAICA, 1977-1992
1977-82 1982-87 1987-92

'000	57.1	98.7	52.4
% Change	8.2%	13.1%	6.1%

Source: STATIN, The Labour Force Survey

Anderson and Witter (1992) use a labour market segmentation framework in their analysis of the local labour market. This framework was based primarily on the level of skills required to complete a task, and on the particular sector under consideration. The categories used were : Government and Social Services, the

primary Formal sector, the Secondary Formal sector, the Informal sector, Peasant Agricultural sector, and Wage Agricultural sector. Growth in the primary labour market was of the order 5-6% (1978-1982). The growth in this sector of the labour market area may have been caused by the real growth that had taken place in the financial sector during this period [King 1994]. However, the increase in employment occurred only in the upper segments of the primary sector as the number of employees at the clerical level did not increase.

Between 1983 and 1989, employment in the informal and secondary labour markets grew but the new jobs were characterized by low wages, low skill, job instability, and no worker protection [Anderson and Witter 1992]. These jobs have mainly been in the area of export processing (eg. freezone manufacturing), tourism, small scale service and retail establishments, domestic service and self-employed vending.

The following observations regarding changes in employment levels in the following sectors from 1977-1989 are based on TABLE III.2.

TABLE III.2 - THE SHARE OF EMPLOYMENT BY LABOUR MARKET SECTOR

	1977	1985	1989	1977-85	1985-89
Total Employment ('000)	691.2	771.3	869.6	80.1	98.3
% Share of total Employment	100.0	100.0	100.0	-	-
Govt. & Social Services	18.0	12.6	10.8	-5.4	-1.8
Primary Formal	5.3	4.4	5.5	-0.9	1.1
Secondary Formal	22.4	24.5	32.0	2.1	7.5
Informal	18.5	22.5	23.4	4.0	0.9
Peasant Agriculture	25.5	27.7	22.5	2.2	-5.2
Wage Agriculture	10.4	8.4	5.9	-2.0	-2.5

Source : Anderson and Witter (1992)

- (i) The government sector's share of employment has declined significantly since 1977
- (ii) The level of employment in the primary formal sector has changed very little as a whole
- (iii) The secondary formal sector grew rapidly over the 1985-1989 period.
- (iv) Employment in the informal sector has expanded by approximately 26.5% from 1977 to 1989.
- (v) The Agricultural sector's share of employment has declined

An analysis of the employed labour force over the four year period 1989-1992 reveals that the average percentage of self-employment was 38%. This study is interested in that component of the employed labour force which is not self-employed. Excluding the self-employed component, the employed labour force can be separated into two groups, labour and management. Table III.3 shows the proportion of the employed labour force (excluding self-employed) that is split between the two groups.

TABLE III.3 - EMPLOYED LABOUR FORCE DISTRIBUTION FOR SELECTED YEARS

Year	Prof, Tech, Mgmt, and related occup	Labour
1978	15%	85%
1979	15%	85%
1983	16%	84%
1984	15%	85%
1989	12%	88%
1990	13%	87%
1991	13%	87%
1992	12%	88%

Source: STATIN, The Labour Force Survey

There has been a relative decline in the proportion of the professional, technical, management and related group since 1978 and a corresponding increase in the "labour" category.

WAGES

There is consensus [Anderson and Witter 1992 ; Douglas 1991 ; Jones 1992 ; Levitt 1991 ; King 1994] that the SAP has led to the deterioration of the economic situation of the Jamaican wage worker. The implementation of wage guidelines has contributed significantly to the erosion of real wages earned by labour. One study [Ganga 1992] estimated the reduction in real industrial wages, from 1977 to 1989, to be in the region of 32%. A survey (1990) of 20 Caribbean countries show that at a minimum wage of US\$0.27 per hour, Jamaica had the lowest hourly remuneration [Jones 1992].

In an analysis carried out on the average wages for employees (excluding Central Government, the Agricultural sector and the Freezone), between 1989 and 1993, the average growth in nominal wages was less than the average inflation rate from 1989 to 1993.

TABLE III.4 - GROWTH IN AVERAGE WEEKLY EARNINGS, %

	1989	1990	1991	1992	1993	AVERAGE
ALL SECTORS*	12	20	32	51	47	32.4
BAUX. & MINING	3	30	35	88	36	38.4
MANUFACTURING	13	18	27	53	37	29.6
ELECTRICITY	25	19	50	41	102	47.4
CONSTRUCTION	6	19	41	58	58	36.4
FINAN. INSTIT.	19	22	25	53	49	33.6
INFLATION RATE	17	30	80	40	30	39.4

* - Excludes Government, Agriculture & Freezone

Source: Author's calculations based on STATIN Publications

A comparison of the rate of increase of nominal wages and the inflation rate (TABLE III.4) reveals that on a whole, the inflation rate outstripped the growth in wages in 1989, 1990, and 1991. In 1992 and 1993, wages did some catching up in real terms, but at no time did these improvements make up for the erosion in real wages that occurred in the previous three years. In 1991 alone, the Consumer Price Index (CPI) increased by approximately 80% while wages for "all sectors" increased by only 32%. Table III.5 more clearly illustrates the extent to which the rate of inflation has exceeded wage increases in recent years.

TABLE III.5 - THE RATIO OF THE GROWTH RATE OF NOMINAL WAGES TO THE RATE OF INFLATION

	1989	1990	1991	1992	1993
ALL SECTORS*	0.73	0.66	0.40	1.27	1.58
BAUXITE	0.19	1.02	0.44	2.19	1.21
MANUFACTURING	0.77	0.59	0.34	1.33	1.22
ELECTRICITY	0.45	0.62	0.62	1.02	3.40
CONSTRUCTION	0.33	0.63	0.51	1.43	1.92
FINAN. INSTIT.	1.12	0.74	0.32	1.31	1.62

* - Excludes the Govt., Agriculture, and the Freezone
Source: Author's calculations based on STATIN Publications

The ratio formed by computing the growth rate of nominal wages to the rate of inflation shows the magnitude of wage increases per unit increase in the rate of inflation. A ratio of less than one (1) shows the rate of wage increases was smaller than the rate of inflation, which means real wages declined. Conversely, a ratio bigger than one (1) show that real wages increased. In 1991, there was a reduction in the real wages for "all sectors" and for all the individual sectors shown in TABLE III.5

Comparing the growth in wages with the rate of inflation on an annual basis may not be the best way to infer whether or not there has been a reduction in real wages for the entire review period. This is because there is a lag in the adjustment process between wages and inflation. To account for this lag, the percentage growth in wages over the whole period can be compared to the total percentage increase in the CPI. TABLE III.6 shows that real wages have in fact declined after all adjustments have been taken into account. For "all sectors", there was a 0.74% increase in wages for every 1% increase in inflation. Only in the Electricity sector were there any gains in real wages. In the bauxite sector, wage increases approximated the increase of the general price level.

TABLE III.6 - RATE OF INCREASE IN WAGES RELATIVE TO INFLATION
(1988-1993)

SECTOR	% INCREASE IN WAGES	% INCREASE IN CPI	INCREASE IN WAGES/ INCREASE IN CPI
ALL	295	400	0.74
BAUX.	366	400	0.92
MANUF.	256	400	0.64
ELECT.	534	400	1.34
CONST.	340	400	0.85
FIN. INSTIT.	314	400	0.79

Source: Author's calculations based on STATIN Publications

The foregoing analysis shows that there has indeed been a reduction in real income earned by labour, on average, in the selected sectors.

Surveys have been done on the levels of executive compensation prevailing in the local private sector. The results (TABLE III.7) indicate that executive employees have fared relatively well over

the period 1992 to 1994.

TABLE III.7 - GROWTH RATE OF SALARY PACKAGE RELATIVE TO INFLATION

- SERVICE SECTOR OCCUPATION	SALARIES IN J\$		%INCREASE IN SALARY 1992-94	%INCREASE IN SALARY/ INFLATION RATE 1992-94
	1992	1994		
Managing Director	447560	1576980	252	4.10
Financial Controller	385580	825143	114	1.85
Personnel and I.R. Man	276416	575634	108	1.76
Marketing Manager	166786	632477	279	4.54
Executive Secretary	62030	259688	319	5.19
- MANUFACTURING SECTOR				
Managing Director	784816	1292746	65	1.06
Financial Controller	477981	813805	70	1.14
Personnel and I.R. Man	329110	621723	89	1.45
Marketing Manager	418595	785374	88	1.43
Executive Secretary	157925	254597	61	0.99

Source: PIOJ - The Labour Market Information Newsletter, Nov.1994

In the two broadly defined categories, Services and Manufacturing, a comparison of the average salary package for the years 1992 and 1994 show that the lowest percentage increase was 61%. This was in the Manufacturing sector at the level of Executive Secretary. The Services sector as a whole had average increases amounting to over 200% for all the categories shown. The Manufacturing sector's average increase was more moderate at 74.6%. The high rates of increase for executive salaries in the Service sector can be linked to the growth that has occurred in some of its sub-sectors in recent times. This is particularly true of the financial sector which recorded an average annual growth rate of its contribution to real GDP between 1987 and 1992 of 13.6%, making it the fastest

growing sector over that period. This growth was facilitated by structural adjustment policies which provided opportunities for currency speculation, earning interest on high yielding public securities, and margin gathering on imported goods. Profits in the financial sector, in particular, have grown significantly since 1977.

From June 1992 to June 1994, the rate of inflation was 61.5%. In order to see the real value of increases in salary packages (shown in TABLE III.7), the ratio of the percentage increase in each salary package to the rate of inflation (61.5%) is computed for the two year period. The results show that the earnings of the majority of these upper income earners have kept ahead of inflation. The growth in the salary package of an Executive Secretary, in the Manufacturing sector, was approximately in line with inflation, while all other executive positions had increases in excess of the rate of inflation.

The Central Government

Since its inception, the SAP has targeted the central government for restructuring. As early as 1978, there were layoffs associated with the first IMF agreement. During the period 1980-1989, there was a decline in the public sector labour force from a total of 110,500 workers in 1980 to 72,000 in 1989, a reduction of over 30%. This reduction was done by laying off workers, freezing posts, and paying low wages which led to attrition.

Real wages and salaries for all government employees, except at the managerial level and in certain professional categories, have been

declining. For example, the real remuneration of teachers was reduced by more than 50% over the period 1977-1991 [Jones 1992]. As noted previously, wage guidelines were more strictly enforced in Central Government than in the private sector, but these restrictions did not apply to top management. Under the World Bank sponsored Administrative Reform Programme (ARP), the salaries of top management have increased by so much that some executive posts compare well with similar private sector posts. In some cases, the salaries of some Central Government posts have exceeded comparable private sector posts. In contrast, the real incomes of non-managerial Central Government posts have declined. This has resulted in, among other things, significant out migration (eg.nurses), instability (eg.teaching) and social dislocation [Jones 1992].

In order to see what has occurred in this sector in terms of wages, samples of particular posts have been used to analyze the effect of inflation between 1989 and 1994. Salary samples of managerial posts are compared to the wage/salary samples of posts in the non-managerial/tech/prof category (see TABLE III.8).

TABLE III.8 - EARNINGS(annual) OF EMPLOYEES IN THE CENTRAL GOVERNMENT

	1989 J\$	1993 J\$	%INCREASE	%INCREASE/ INFLATION RATE
Corporal	25770	55592	116	0.35
OPS/CR V	18236	69546	281	0.86
PTO/CA IV	16131	60316	274	0.84
TSS/HS III	12499	45494	264	0.81
PTG/SK V	25241	83978	233	0.71
LMO IV	25992	79052	204	0.62
AIT	15917	47807	200	0.61
CAS. LAB.(daily)	43.90	134.90	207	0.63
GLS I(weekly)	207.95	701.08	237	0.73
Commissioner	65640	529170	706	2.16
SMG IV	59145	326061	451	1.38
ASG VII	65513	578173	783	2.39
PMA V	32152	133877	316	0.97
EDP VI	47862	226557	373	1.14

* - An inflation rate of 327% is used. This is the inflation that was recorded between 1989 and 1993

Source: Author's calculation based on information from The Civil Service Act and The Consumer Price Indices

The results indicate that the non-managerial level workers in the government sector have suffered a loss in real earnings. While this has occurred, the managers' earnings in central government have improved significantly in real terms.

Jones (1992) has compiled data which illustrates the wage differentials in the public and private sector. This information is displayed in TABLE III.9 and shows that the relative disparity between (comparable) upper echelon posts in Central Government and the Private Sector, in relation to (comparable) lower grade posts in these sectors, is more pronounced in the Government Sector.

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TABLE III.9 - WAGE DIFFERENTIALS IN THE PUBLIC AND PRIVATE
SECTOR (1990)

	Ratio of Man Dir/Perm Sec to Office Help	Ratio of Man Dir/Perm Sec to Sec/Typist
GOVT.	29:1	11:1
MANU.	16:1	8:1
SERV.	11:1	7:1

Source : J.Jones (1992), The Impact of Structural Adjustment Programmes on the Public Sector.

INCOME DISTRIBUTION

The SAP has resulted in the redistribution of income. Wage earners have been restricted in their ability to get wage increases in excess of inflation. Inflation, as explained by King (1994) is a tax in the that it effectively reduces the amount of goods and services that can be bought with income. In economies such as Jamaica, where property ownership is inequitable, a redistribution of income from wage earners to the recipients of property income is a consequence of inflation. In 1986, the top 20% of the population was responsible for 46.8% of the total consumption/in the society [PIOJ, Survey of Living Standards]. Levitt (1991) used consumption as a proxy for income and estimated that the top 20% of the population, in 1989, was likely to have earned over 60% of the income in Jamaica. The poorest 10% of the population in 1989 was responsible for 1.9% of the total consumption. *

By way of summary, many fixed income earners have suffered a decline in their living standards since 1977. The decline in real wages for many wage workers, coupled with factors such as the removal of subsidies, and the reduction in government expenditure on social services have made many wage earners relatively worse off

since the advent of the SAP.

IV. THE SHARE OF LABOUR IN THE COST STRUCTURE OF THE JAMAICAN ECONOMY

In order to ascertain the direct inflationary impact of wage increases, an attempt has been made to determine the proportion that labour contributes to total cost in the economy. Data was collected from a variety of published sources. In cases where published data was not available, information is based on expert opinion. Labour cost, as it is used in the rest of the study, consists of the compensation of all employees, that is, both managerial and non-managerial personnel. This approach is used because it was not possible to separate the earnings of managerial from the earnings of non-managerial personnel.

The estimates of the proportion of total costs that labour costs accounts for in each sector are shown in TABLE IV.1. The method of estimation by sector was:

- (a) CONSTRUCTION - The estimate for the share of labour is based on the cost profile of a model house. This model unit is a 770 sq. ft. gross containing three bedrooms, living and dining, one bathroom, kitchen and a 51 sq. ft. patio. The average share of labour for the years 1989 to 1991 in the cost of construction was used as a proxy for the sector as a whole (Source: Housing and Finance, Nov.1989 and The Masterbuilder, Vol. 30, # 1, 1991) ✓
- (b) BAUXITE & MINING - The proportion of labour costs in the bauxite and mining sector is based on information compiled by

the Jamaica Bauxite Institute. The proportion of labour is based on the average share of wages and salaries in total production cost from 1990 to 1993.

- (c) MANUFACTURING - Estimates were obtained from interviews with leaders in particular manufacturing enterprises in several sub-sectors. These estimates were weighted by the share of that sub-sector's GDP in manufacturing and the computed average used as the share of labour cost in total costs in the whole manufacturing sector. The manufacturing sub-sectors from which the estimates were derived are classified in the National Income and Product as Sugar, Molasses and Rum, Petroleum Refining, Chemical and Chemical Products, and Textiles and Wearing Apparel.
- (d) TOURISM - Data from a study commissioned by the Organisation of American States (OAS) was used to make the relevant computations to determine the share of labour costs in the sector's total costs.
- (e) UTILITIES - The estimate for the share of labour in this sector was based on statements made on the Breakfast Club (16th of March 1995) by Dr. Wayne Reid, Chairman of the National Water Commission and interviews other executives in the utilities sector.

(f) THE CENTRAL GOVERNMENT - Using information published in the Financial Statement and Revenue Estimates by the Government of Jamaica, the percentage of employee compensation to total recurrent expenditure for the fiscal year 1991/92, is used to indicate the share of labour cost to total recurrent expenditure of Central Government.

TABLE IV.1 - THE ESTIMATED SHARE OF LABOUR COST IN TOTAL COSTS IN THE ECONOMY

SECTOR	% OF EMPLOYMENT	LABOUR INCOME AS A % OF TOTAL COST
CONSTRUCTION	7	17 ✓
BAUXITE & ALUMINA	1	16 ✓
MANUFACTURING	11	17 ✓
TOURISM	8	18 ✓
UTILITIES	1	19 ✓
CENTRAL GOVERNMENT	10	17 ✓

Source: STATIN Publications and Author's Research

The following procedures are used to derive two micro-estimate and a Macro-estimate of the share of labour in the whole economy. We shall call these two estimates, Micro-estimate 1 and Micro-estimate 2.

Micro-estimate 1

The share of labour in the cost structure of the economy is estimated by weighting the estimates of labour costs as a percentage of total costs in each sector by the share of employment in that sector.

The computed estimate of the average share of labour costs the total costs in the selected sectors is taken as the share of labour costs in the total costs of the entire economy. The computed

estimate is 17%.

Micro-estimate 2

Assuming that the share of labour in the other sectors of the economy, not shown in TABLE IV.1, is equal to the maximum share that was determined in the listed sectors, we can derive another estimate of the percentage of labour cost in the economy's cost structure.

The sector which is used is the Utilities sector. In this sector, labour contributes 19% to total cost.

The rest of the employed labour force not included in TABLE IV.1 is used to weight the share of labour costs in the total costs of the sectors not listed (ie those not in TABLE IV.1). The share of labour costs in the total costs is estimated at 18% by this method.

The Macro-estimate

A macro-estimate of the percentage of labour cost in total cost is derived by taking the total compensation of all employees as a percentage of Gross Output in 1992. Total compensation is used as a proxy for total labour costs, while Gross Output is used to represent total cost.

The estimates of the share of labour in the cost structure of the economy at the micro and the macro level are shown in TABLE IV.2

TABLE IV.2 - SHARE OF LABOUR IN THE COST STRUCTURE OF THE JAMAICAN ECONOMY

MICRO-ESTIMATES	ESTIMATED SHARE, %
1	17
2	18
MACRO-ESTIMATE	17

Source: Based on the author's computations

The estimates in TABLE IV.2 will be used in Section V to estimate the inflationary impact of wage increases. It should be noted, however, that the estimated share of labour costs in total costs excludes those complementary costs (eg. supplies, furniture, etc) that are associated with labour employment.

V. THE IMPLICATIONS OF WAGE INCREASES FOR INFLATION IN THE 1990's

The first approach used to estimate the inflationary impact of wage increases looks at the direct impact on total costs, arising from increases in wages (the cost side). The second approach (the expenditure side) estimates the effect on prices that result from the increased demand that arises from increased wages. The results of both approaches are combined to determine the total impact of wage increases on the level of prices in the economy.

THE COST APPROACH

Estimates of the share of labour in the economy's cost structure were previously computed (see TABLE IV.2). TABLE V.1 shows the resulting percentage increases in total costs caused by a 10% increase in economy's labour costs.

TABLE V.1 - EFFECT OF A 10% INCREASE IN LABOUR COST ON TOTAL COST

MICRO-ESTIMATES	PERCENTAGE CHANGE IN TOTAL COST, %
- LOWER SHARE	1.7
- HIGHER SHARE	1.8
MACRO-ESTIMATE	1.7

Source : Based on the author's computations

The lower **micro-estimate** indicates that for every 10% increase in total labour costs, the increase in the total costs, if all of the increased wages are passed on, is 1.7%. The **higher estimate** results in a 1.8% increase in total costs when wages are increased by 10%. The share of labour in total costs based on the **macro-estimate** results in an increase of 1.7% in total costs for a given 10% wage increase.

The relatively small impact of increases in labour costs on total costs is due to the small proportion of labour costs in total costs.

The sectors used to estimate the share of labour cost in total costs were examined to find the magnitude of the impact on the whole economy that arises from an increase in labour cost in each sector (see TABLE V.2). As before, a 10% increase in labour cost in each sector is used to estimate the increase in the total cost arising from the labour cost increase in that sector.

TABLE V.2 - IMPACT OF A 10% INCREASE IN LABOUR COST IN SELECTED SECTORS ON THE TOTAL COSTS IN THE ENTIRE ECONOMY

SECTOR	SECTOR'S IMPACT ON TOTAL COST, %
CONSTRUCTION	0.12
BAUXITE & MINING	0.02
MANUFACTURING	0.19
TOURISM	0.14
UTILITIES	0.02
CENTRAL GOVERNMENT	0.17

Source : Based on the Author's computations

The results show that of the sectors reviewed, wage increases in Manufacturing and Central Government had the largest impact, and Bauxite and Utilities sectors had the smallest impact on prices.

THE DEMAND APPROACH

Increases in wages cause an increase in the demand for goods and services because more money is available to be spent. The effect on prices of a 10% increase in the compensation of employees is estimated by computing the change in the GDP arising from the increased compensation. In 1992, the ratio of total employee compensation to GDP was 42%. An increase of 10% total compensation would have resulted in a commensurate increase in nominal GDP assuming that actual physical output remained constant. The GDP would have been 4.2% higher as a result of the increased compensation. If all of the increased compensation was spent, then prices would have risen by 4.2%. The assumption that all of the increased compensation is spent is rather extreme. TABLE V.3 shows an additional estimate, assuming that 66% of the increase in employee compensation is spent. This 66% represents a proxy for the private marginal propensity to consume out of income and is computed by using the ratio of Private Final Consumption Expenditure to National Disposable Income. Also shown in TABLE V.3 are the impacts on total GDP of a 10% wage increase in compensation in each sector.

TABLE V.3 - INFLATIONARY IMPACT ON TOTAL GDP OF A 10% INCREASE IN COMPENSATION

SECTOR	SECTORIAL COMPENSATION as % of SECTORIAL GDP (1992)	INFLATIONARY IMPACT ON TOTAL GDP THE % INCREASE SPENT IS :	
		(100% SPENT)	(66%)
CONSTRUCTION	61	0.79	0.52
BAUX. & MINING	17	0.14	0.09
MANUFACTURING	35	0.70	0.46
TOURISM	30	0.33	0.22
UTILITIES	30	0.09	0.06
CENTRAL GOVT.	100	0.60	0.40
THE ENTIRE ECONOMY	42	4.20	2.80

Source : STATIN, National Income and Product and Author's computations

The results of the two approaches are combined to get an estimate of the inflation that results from wage increases. The cost approach gave 1.7% as a minimum estimate of the increase in total costs attributed to a 10% labour cost increase, and 1.8% as the maximum estimate. The demand approach indicated a 4.2% and 2.8% increase, respectively, in the rate of inflation, resulting from an increase in compensation of 10%.

The results of TABLE V.1 and TABLE V.3 are combined in TABLE V.4 to get a minimum and maximum value for the overall inflationary impact of a 10% increase in the wages paid to employees in the economy.

TABLE V.4 - OVERALL IMPACT OF A 10% INCREASE IN LABOUR COSTS AFTER ACCOUNTING FOR INCREASES IN COSTS AND DEMAND

	COST ESTIMATE	DEMAND ESTIMATE	TOTAL
MINIMUM	1.7%	2.8%	4.5%
MAXIMUM	1.8%	4.2%	6.0%

Source : Author's calculations

TABLE V.4 shows the estimate of the inflationary impact of a ten percent (10%) wage increase ranging from a minimum value of 4.5% to a maximum value of 6.0%.

The estimates of the impact of a 10% wage increase in each sector on the price level in the entire economy are shown in

TABLE V.5.

TABLE V.5 - OVERALL IMPACT OF A 10% INCREASE IN LABOUR COST IN EACH SECTOR ON THE WHOLE ECONOMY, %

	OVERALL IMPACT	
	(100% INCREASE IS SPENT)	(66% INCREASE IS SPENT)
CONSTRUCTION	0.91	0.64
BAUXITE & ALUMINA	0.16	0.11
MANUFACTURING	0.89	0.65
TOURISM	0.47	0.36
UTILITIES	0.11	0.08
CENTRAL GOVERNMENT	0.77	0.57

Source : Based on the Author's computations

VI. CONCLUSION

The main purpose of this study was to determine the effect of wage increases on the rate of inflation.

Since 1977, the causes of inflation have been attributed mainly to the devaluation/depreciation of the exchange rate. Other factors such as the growth in the money supply, shortages and imported inflation have been prominent in explaining increases in the Consumer Price Index (CPI). Wage increases have played a minor role in explaining the inflation rate over the period.

The structural adjustment process (SAP) has led to inflation stemming from the liberalization and deregulation of the economy. Labour has been cheapened with the restrictions of wage increases in the high inflationary periods since 1977. In contrast, the findings suggest that there have been increases in the real compensation of the managerial/technical/professional employees in both the private sector and central government.

The effect of wage increases on total costs in the economy was found to be small because labour contributes a relatively small share of total cost in the economy.

The rise in prices that result from increased demand is potentially more significant than the increase in total costs. In the extreme case, when all the wage increases are passed on by the producer, and all increases are spent by the wage earner, the effect of a 10% wage increase is a 6.0% increase in the inflation rate. A historical consumption pattern of 66% from additional income leads to an inflation rate of 4.5% when wages rise by 10%. Further, we

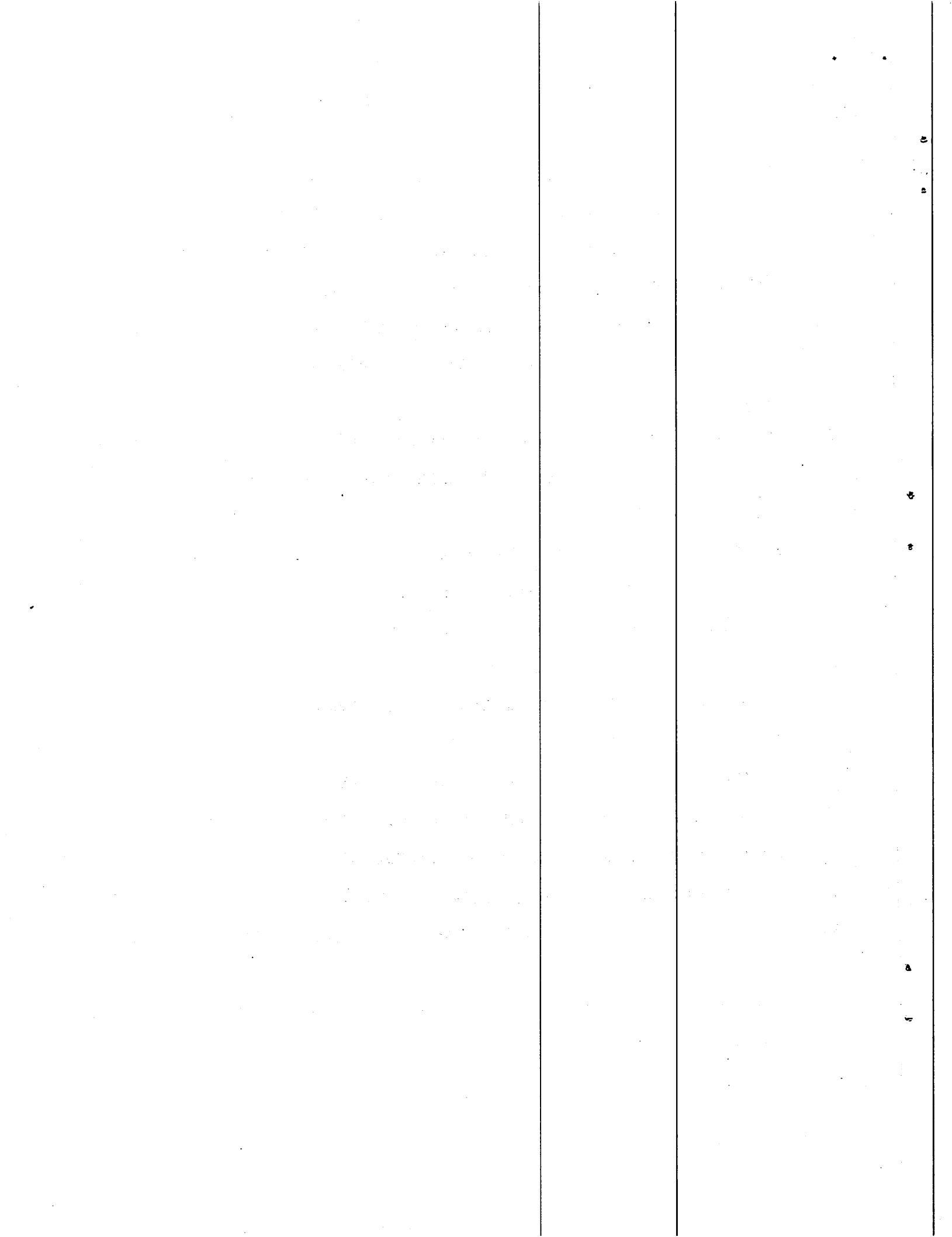
have assumed productivity to be constant. An improvement in the real GDP to total labour employed ratio would serve to dampen the inflationary effects of wage increases. This is because there would be more goods and services available to meet the increased demand caused by the wage increases.

A study undertaken by the Planning Institute of Jamaica (PIOJ), using a different methodology, on the causes of inflation in the Jamaican economy, estimates that a 10% increase in wages results in a 4.2% increase in prices.

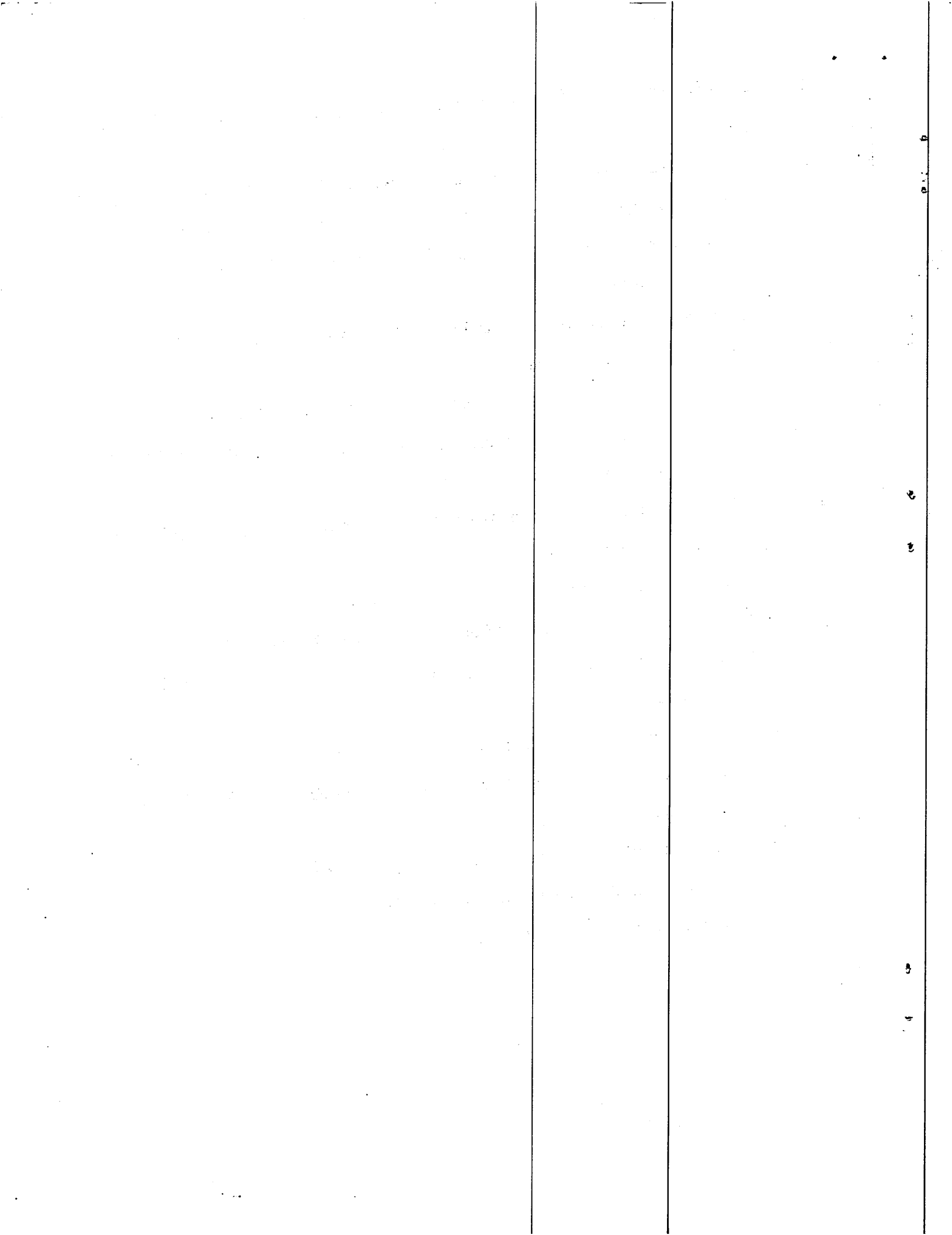
There is an urgent need for a more detailed study into the cost structure of the Jamaican economy. This study has been subject to restrictions arising from the quality and availability of existing data. As such, the conclusions drawn are subject to these limitations.

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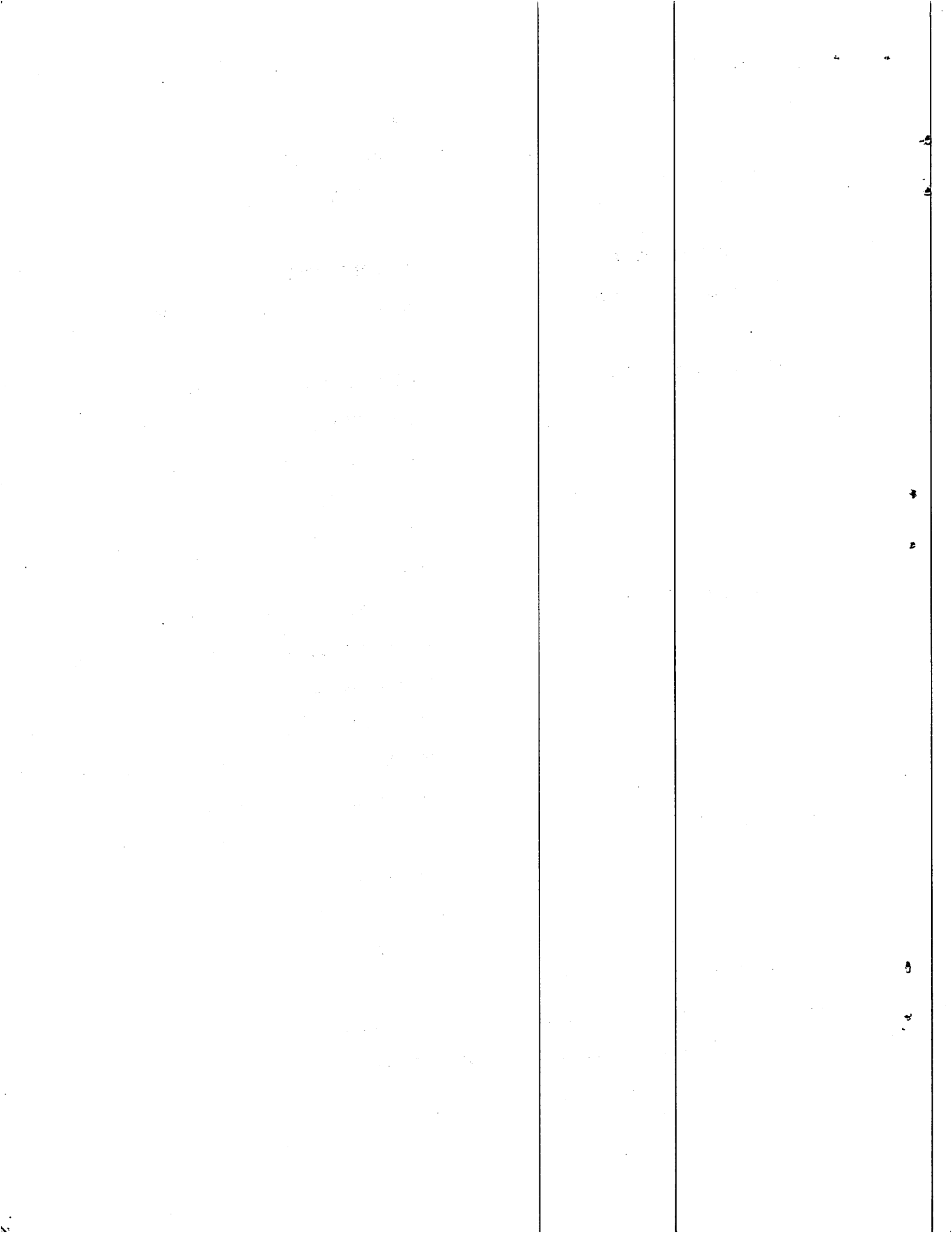


APPENDIX 1

LABOUR FORCE CLASSIFICATION

SECTOR	INDUSTRY
(1) GOVERNMENT & SOCIAL SERVICES	CENTRAL GOVT., LOCAL GOVT, PRIVATE HEALTH & EDUCATION
(2) PRIMARY FORMAL	BAUXITE & ALUMINA, OIL REFINING, RUBBER, PETROLEUM, LARGE UTILITIES, WATER & AIR TRANSPORT, FINANCIAL INTERMEDIARIES, PROFESSIONAL SERVICES
(3) SECONDARY FORMAL	PRINTING, STORAGE, PERSONAL SERVICES, RETAIL TRADE, WHOLESALE TRADE, WATER & SANITATION, MANUFACTURING, CONSTRUCTION & INSTALLATION, HOTELS, RESTAURANTS RECREATION, TRANSPORT
(4) INFORMAL	WHOLESALE TRADE, RETAIL TRADE, HIGGLERS, CONSTRUCTION & INSTALLATION, TRANSPORT
(5) WAGE AGRICULTURE	
(6) PEASANT AGRICULTURE	

Source : Anderson and Witter(1992), Crisis, Adjustment and Social
Change : A Case Study of Jamaica



APPENDIX 2

PUBLIC SECTOR POSTS USED IN THIS STUDY

(A) NON-MANAGERIAL/TECHNICAL/PROFESSIONAL POSTS

(1) CORPORAL	POLICE FORCE
(2) OPS/CA V	OFFICE AND PUBLIC SERVICE GROUP
	CLERICAL AND REGULATORY SUBGROUP
	GRADE 5
(3) PTO/CA IV	PUBLIC AND SUPPORT SERVICE CATEGORY
	CARRIER SERVICE SUBGROUP
	GRADE 4
(4) SS/CA III	TECHNICAL SUPPORT SERVICES GROUP
	HEALTH SUPPORT SUBGROUP
	GRADE 3
(5) PTG/SK V	PRINTING GROUP
	SKILLED SUBGROUP
	GRADE 5
(6) LMO IV	LABOUR AND OPERATIONS GROUP
	GRADE 4
(7) AIT V	ARTISAN AND INDUSTRIAL TRADES GROUP
	GRADE 5
(8) SSG/CS IV	SECURITY SERVICES GROUP
	GRADE 4
(9) CASUAL DAILY PAID LABOUR	GENERAL SERVICES GROUP
(10) GLS I	GRADE 1

(B)

MANAGERIAL/TECHNICAL/PROFESSIONAL POSTS

- | | | |
|------|--------------|---|
| (1) | COMMISSIONER | POLICE |
| (2) | SMG IV | SENIOR MANAGEMENT GROUP
GRADE 4 |
| Y(3) | ASG VII | APPLIED SCIENCE GROUP
GRADE 7 |
| (4) | PMA V | PROGRAMME AND MANAGEMENT GROUP
GRADE 5 |
| (5) | EDP VI | ELECTRONIC AND DATA PROCESSING GROUP
GRADE 6 |

Source : Government of Jamaica, The Civil Service Act

APPENDIX 3

SHARE OF LABOUR IN PARTICULAR SECTORS AND SUB-SECTORS IN THE JAMAICAN ECONOMY

MANUFACTURING SUB-GROUP	SHARE OF LABOUR , %
SUGAR, MOLASSES, AND RUM	27%
PETROLEUM REFINING, CHEMICALS AND CHEMICAL PRODUCTS	15%
TEXTILES AND WEARING APPAREL	16%
CONSTRUCTION	17%
BAUXITE & ALUMINA	16%
TOURISM	18%
UTILITIES	19%
CENTRAL GOVERNMENT	17%

Source : Interviews with manufacturing executives, sector studies,
and Government publications