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Inflation, Public Health Care and Utilization in Jamaica

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Abstract: Objective: The current study examines whether public and private health care utilization switching occurs in periods of inflation, and secondly to investigate the role of inflation on illness/injury, prevalence of health insurance coverage, cost of health care in both public as well as private health care. Method: The research design used secondary data from the Planning Institute of Jamaica and the Statistical Institute of Jamaica. The current study used 2 decades of statistics on inflation, expenditure on health care (public-private utilization), self-reported illness/injury, and annual prevalence of health insurance coverage. Results: Over the past 2 decades [1988-2007] there has been a narrowing of public and private health care utilization in Jamaica. On examination of aforementioned issues, we found that inflation accounted for some of this lowered gap. Another interesting finding is the direct association between inflation and injury/illness, and inflation is inversely correlated with prevalence of health insurance coverage. Conclusion: Jamaicans have a preference for the utilization for private health care than public health care services. Despite this preference, persistent increases in the inflation rate, economic recession in America, lowered remittances, increasing costing on 'food and beverage' and 'meats and poultry', increased fuel bills are causing a substitution to public health care utilization.

Key words: Public and Private Health care utilization; Health care demand; Inflation; Health Insurance coverage; Jamaica

INTRODUCTION

Inflation is the persistent upward movement in general prices. It results in lowered standard of living (wellbeing), increased cost of living and is equally synonymous with socio-economic challenges such as readjustment of consumption spending patterns, lowered nutritional intakes and saving patterns, reduced real wage rates, and income-wealth redistribution. During the last 2 decades (1988-2007), inflation in Jamaica has been moderate (average inflation was 19.6 (SD=17.1) and reached a maximum in 1991 of 80.2 per cent which was a 169.13 per cent increase over 1990. A year later (1992), inflation fell substantially by 49.9 per cent (to 40.2 per cent). Since 1993 to 1999, it has been falling; however, this pattern was broken when in 2001, inflation rate increased by 44.3 per cent over 2000 (Table 1). Between 2000 and 2007, average inflation was 11.8 per cent, compared 32.3 per cent between 1988 and 1995 suggesting that socio-economic difficulties on people during those periods have lessen but still remained a reality. Much of the economic gains that have been attained during 2000 to 2007 have been eroded over 2006 to 2007 as general price level in Jamaica increased by 194.7%. This coupled with the economic downturn in the American means a number of challenges for Jamaicans. Many studies that have sought to examine inflation have done so from the perspective of production, economic growth, monetary policy, real wages, interest rates, retards competitiveness, and lower socio-economic activities (King, 2001; Bourne, 2004; Wilson, 1982; Thomas, 1998; Alleyne, 2001; UNDP). We have seen none that examine inflation and public and private health care utilization, inflation and illness/injury from a Caribbean perspective or even in particular Jamaica. No one can deny the association between inflation and increased prices and inflation and unemployment because these are well established in the literature (Zoega, 2002; Phelps and Winter, 1970; Leman, Luca, 2000; Friedman, 1976; Friedman, 1977; Gordon, 2003; Phillips, 1958; Phelps, 1967; Gordon, 1976; Mankiw, 2000), but what about inflation and health care utilization?

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Among the many challenges with which a populace must tackle is the increasing cost of medical care. In periods when there is inflation, the cost of health care is one of the many cost that rise. Is the substitution of health care utilization (public and private health care visits) as a result of inflationary changes? During the period of the 1990s, Jamaica saw inflation as high as 80.2 per cent and despite this being the high in 2 decades (Table1), average inflation for that period was 27.4 per cent compared to 10.6 per cent between 2000 and 2007. In spite the high inflation in the 1990s, private health utilization cost - which is more than public health care service - had a greater demand (Table 1). However, in the last seven years (2000 to 2007), there has been a convergence of public and private health care utilization even though inflation has been lower than in the 1990s (Table 1). Does inflation accounts for a proportion of this pattern (Table 1)? This study aims to contribute to the literature by investigating the aforementioned issues. Utilizing statistical data for 2 decades, this study will examine inflation's role in accounting for public and private health care utilizations of Jamaicans as well as public and private health care utilizing switching owing to inflation. Secondly, the study will examine the correlation between inflation and illness/injury.

METHOD AND MEASURE

The research design used secondary data taken from the last 2 decades of the Jamaica Survey of Living Conditions (JSLC) to examine whether a correlation exists between inflation and public and private health care utilization and secondly to investing if there is a substitution from private health care utilization to public health care utilization in inflationary periods. The data were taken from publications of the JSLC from 1988 to 2007. The JSLC began in 1988 when the Planning Institute of Jamaica (PIOJ) in collaboration with the Statistical Institute of Jamaica (STATIN) adopted with some modifications the World Bank's Living Standards Measurement Study (LSMS) household surveys. The JSLC has its focus on policy implications of government programmes, and so each year a different module is included, evaluating a particular programme. The JSLC is a self-administered instrument (questionnaire) where respondents are asked to recall detailed information on particular activities. The questionnaire covers demographic variables, health, immunization of children 0 to 59 months, education, daily expenses, non-food consumption expenditure, housing conditions, inventory of durable goods, and social assistance. Interviewers are trained to collect the data, which is in preparation of the household members. The survey is usually conducted between April and July annually. Furthermore, the instrument is posted on the World Bank's site to provide information on the typologies of question and the (http://www. worldbank. org/html/prdph/lsms/country/jm/docs/JAM04. pdf).

The current study extracted data on the percentage on public and private health care utilization, mean cost for visits to public and private health care facilities in the last 4-week of the survey period, and health insurance coverage from the JSLC. Information was extracted on annual inflation rate from 1988 to 2007. Scatter diagrams (graphical plots) were on variations of public and private health care utilization by inflation, mean cost of care for visits as well as other graphic presentations were used to assess whether any statistical association exists between the dependent variable and the independent variable; and some of the graphs were only interpreted. In the current study, number of hypotheses was tested to provide explanation for the narrowing of the public and private health care utilization in Jamaica over the last 2 decades.

Measure:

Health Insurance Coverage:

This variable is conceptualized as self-reported ownership of health insurance coverage by members of the population. For the purpose of the study, the variable is measured as a percentage of the general population.

Inflation:

This is measured as the per cent increase in prices from December to December of each year.

Health Service Utilization:

This denotes an individual demand and use of health care resources and services and indicates the way customers (patients) interaction with health care providers. Therefore health service utilization (utilization of health care services) is a proxy of health status of a population and use of health care services. Health care service utilizations are provided by public, private or public-private facilities.

Public Health Care utilization:

This is the percentage of the total population of individuals who reported having visited public health care institutions owing to illness/injury over the 4-week period of the survey.

Private Health Care utilization:

This is the percentage of the total population of individuals who reported having visited private health care institutions owing to illness/injury over the 4-week period of the survey.

Results: Bivariate Analysis:

Hypothesis 1:

There is direct statistical association between inflation and public health care utilization The statistical correlation between public health care utilization and inflation (Figure 1) is curvilinear. There is a positive association between the two aforementioned variables, when inflation is less than 40%, and changes to positive after an inflation rate of approximately 50%. However, when inflation increases from 40 per cent to 80 per cent, there is a significant increase in demand for public health care facilities for care.

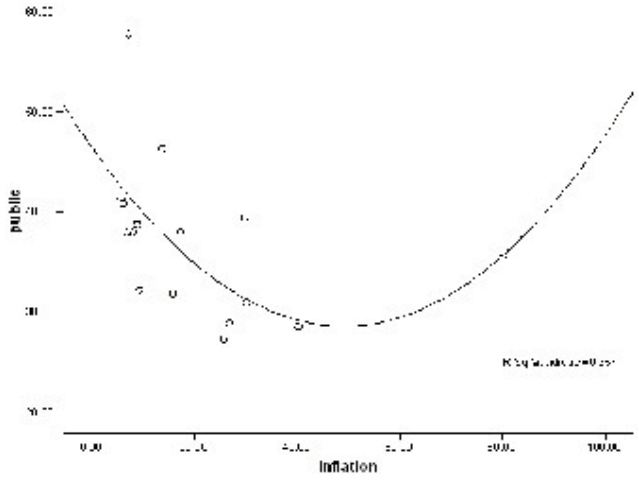

Fig. 1: Inflation By Public Health Care Utilization

Hypothesis 1:

There is an indirect association exits between inflation and private health care utilization Generally the correlation between private health care utilization and inflation (Figure 2) is curvilinear. A particular inflation rate (40 per cent) and beyond, people reduce their demand for private health facility and below this rate, the demand for private health care was positively related to inflation rates.

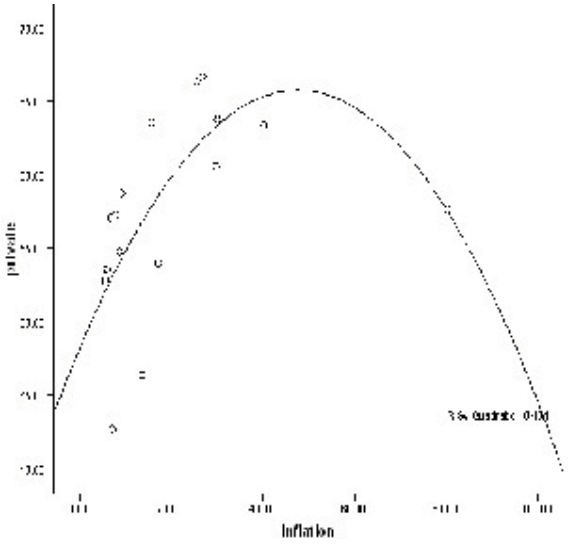

Fig. 2: Inflation by Private Utilization Care

Hypothesis 2:

A strong statistical correlation exists between cost of medical care for services offered by public health care facilities and private health care facilities.

Based on Figure 3, there is a strong positive statistical association between cost of medical care for public health care and that of private health care (R-squared = 0.741). This means that 74.1% of the variance in cost of public health care services is owing to a 1% change in the cost of private health care services in Jamaica.

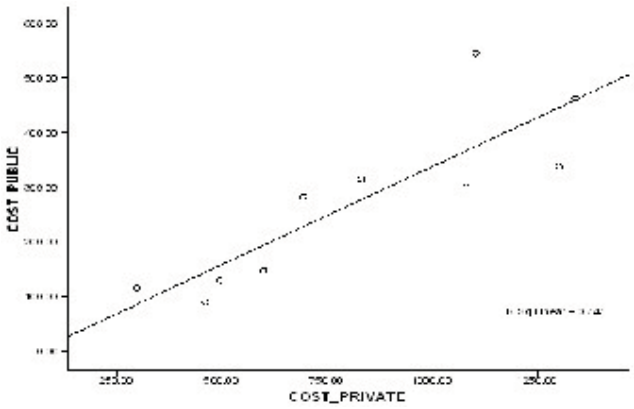

Fig. 3: Cost of Medical care for Public and private health Care

Hypothesis 3:

There exists an inverse statistical correlation between public health care and private health care utilization

On examination of the data (Figure 3), there is a strong inverse statistical correlation between public and private health care utilization of Jamaicans (R-squared = - 0.89). Based on figure 4, 89% of the change in public health care utilization of Jamaicans is due to a 1% change in private health care utilization. Continuing, the rate of change between public and private health care switching is constant (or linear).

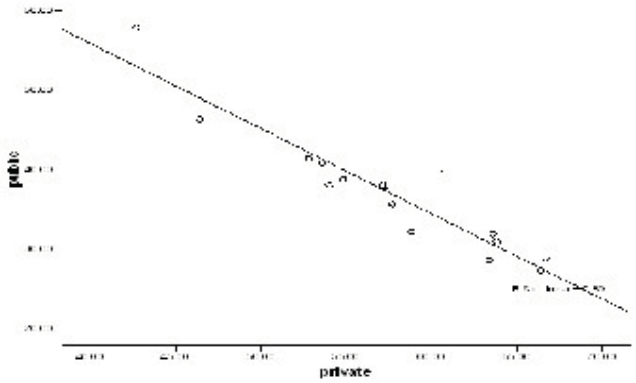

Fig. 4: Public and private health Care Utilization

Hypothesis 4:

There is a direct association between utilization of public health care facilities and self-reported illness/injury

Based on Figure 5, the correlation between self-reported illness (or self-reported injury) is a positive one. The statistical association is a weak one (R=0.2520, and that only 6.4% of the variability in public health care utilization by Jamaicans can be explained by self-reported illness (or self-reported injuries). Here, self-reported illness is a weak predictor (R-squared = 0.064) of the rationale for public health care utilization in Jamaica. With a weak R-squared between the two aforementioned variables, illness/injury is not a good explanatory for public health care utilization in Jamaica as significantly more people attend public health care utilization (57.8 per cent) when 12.6 per cent of the population reported illness/injury compared to 39.4 per cent when 18.3 per cent of the populace indicated suffering from illness/injury.

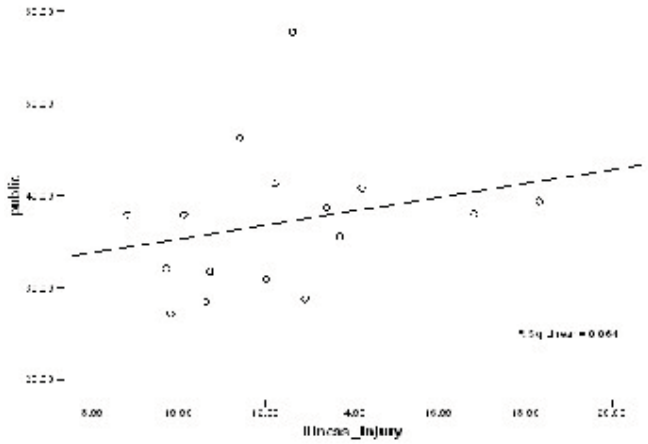

Fig. 5: Visits to Public Health Care Facilities and the Number of Reported Illness/Injury

Hypothesis 5:

Increases in inflation rates reduces the ownership of health insurance coverage

On examination of the correlation between health insurance coverage and inflation it was revealed that a non-linear relationship existed. The findings revealed that people purchase less health insurance in periods of high inflation (Figure 6) except when inflation increases beyond 60 per cent, suggesting that less is spent on health seeking behaviour (proxied by the purchase of health insurance coverage) in period of high inflation.

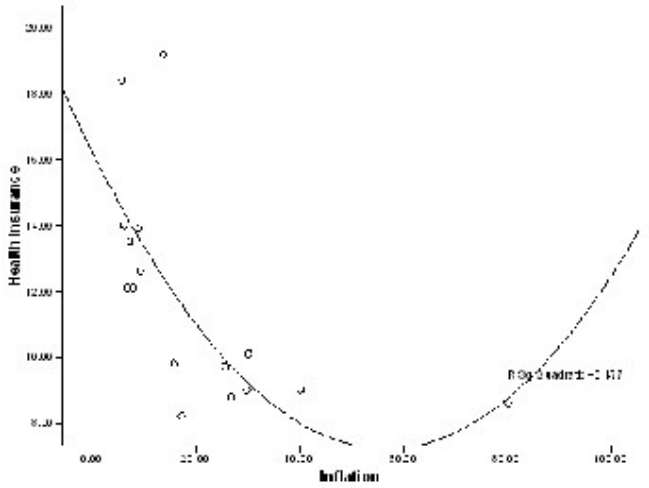

Fig. 6: Health Insurance Coverage and Inflation

Hypothesis 6:

There is a strong correlation between incidence of poverty and inflation

The data revealed a strong statistical correlation between incidence of poverty and inflation (R squared 0.777) (Figure 6). This means that 77.7 per cent of 'incidence of poverty' can be explained by a one per cent change in the inflation rate. In addition, inflation is not only synonymous with increased prices but increased incidence of poverty, suggesting that in periods of persistently high inflation, more people will become poorer. The association between the two aforementioned variables is a linear one.

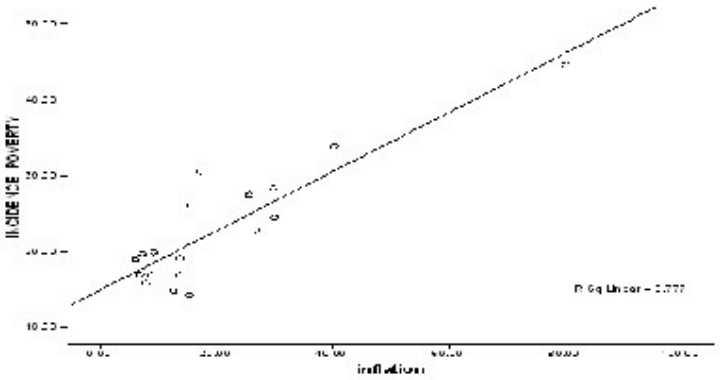

Fig. 7: Incidence of Poverty and Inflation, 1988-2007

Hypothesis 7:

There is a strong positive correlation between public health care utilization and incidence of Poverty

The findings (in Figure 8) have disproved the hypothesis as there is weak negative correlations between public health care utilization and incidence of poverty (R^2= 0.236). The relationship is a curvilinear one, indicating that as the incidence of poverty increase people switch from visiting public health facilities. Furthermore, only 23.6 per cent of public health care utilization is explained by a 1% change in 'incidence of poverty'. Embedded in this finding is the role of switching from health care to home care in periods of increased poverty, suggesting that when the people become poorer (or increases in poverty rates), people will be highly likely to spend more for public health care utilization. Nevertheless, when incidence of poverty increases beyond approximately 35%, people begin to switch to the services of public health care facilities.

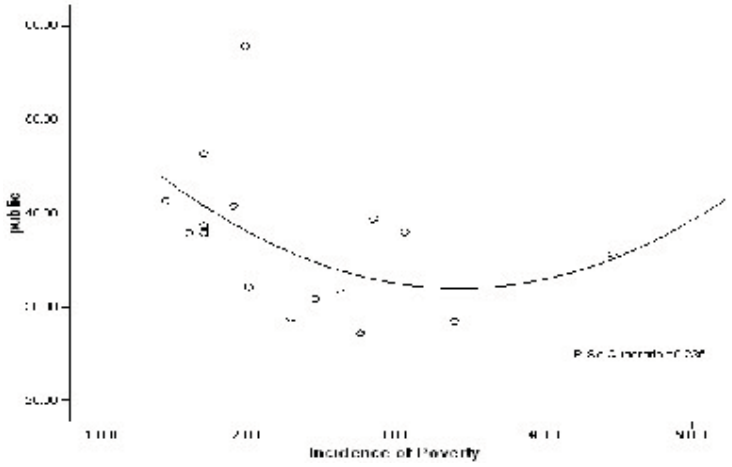

Fig. 8: Public Health Care Utilization and Incidence of Poverty

Hypothesis 8: There is a weak statistical correlation between private health care utilization and incidence of poverty

The correlation between private health care institution and incidence of poverty is a moderate one (R=0.56) (Figure 9). The relationship between the two variables is a non-linear one, indicating that the rate of change is not constant over the event, as there is a positive association between the aforementioned variables up to poverty rates of approximately 32% and beyond this is private health care utilization begins to fall at an increasing rate. Furthermore, for every 1 percentage change in incidence of poverty, private health care utilization increases by 31.6 percentage points.

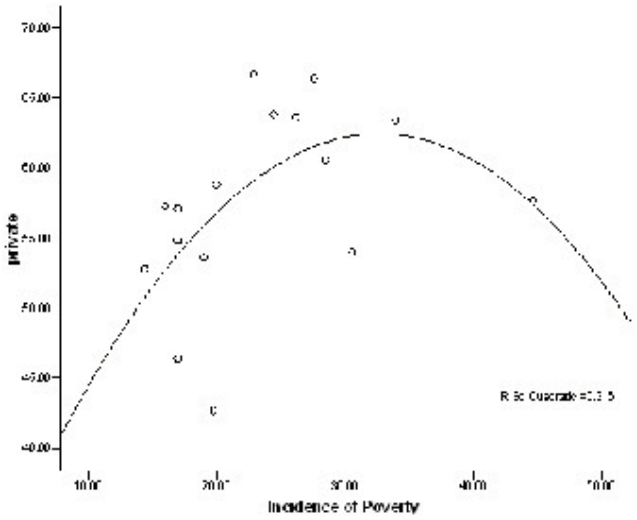

Fig. 9: Private Health Care Utilization and Incidence of poverty

Hypothesis 9:

There is a positive correlation between illness/injury and inflation

Based on Figure 10, there is a weak positive correlation between illness/injury and inflation. The data revealed that 4.4 per cent of illness/injury is explained by a 1 per cent change in inflation suggesting that in period of high and persistent increases in inflation, more people will become ill or injured (self-reported illness or injury).

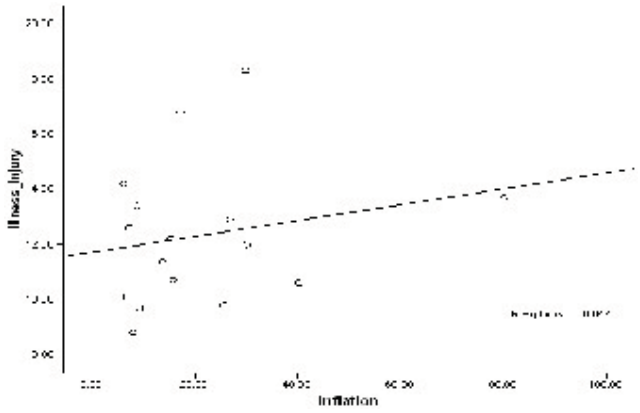

Fig. 10: Illness/Injury and Inflation

Hypothesis 10:

There is a negative correlation between cost of Public and private health Care Cost and Inflation

The findings revealed that in period of low inflation the cost of expenditure on private health care is higher than expenditure on public health care utilization, suggesting that switching occurs in those periods. The reverse is the case in periods of high inflation (Figure 11). There is a remarkable disparity between expenditure on private health care and public health care in periods of low and high inflation. The data revealed that in periods of low inflation the rate of substitution for private health care utilization is substantial; however in periods of persistently high inflation the rate of substitution is smaller than substitution rate in low inflationary periods.

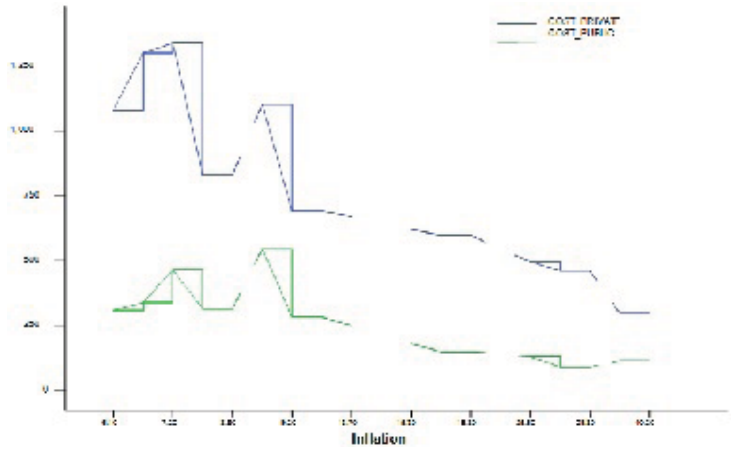

Fig. 11: Cost of Public and private health Care Cost and Inflation

Hypothesis 12:

There is a positive correlation between home remedy and inflation

The relationship between seeking medical care and inflation is twofold. Firstly, when inflation rates range from 0 and 60 per cent, there was an inverse correlation with seeking medical care. However, when inflation increases beyond 60 per cent, it positively associated with seeking medical care. Secondly, 68.9 per cent of people seeking medical care can be explained by inflation. The findings show (Figure 12) is a strong association between seeking medical care and inflation (R squared=0.689). The data were better fitted by a curvilinear diagram than a linear one (Figure 12), and this explain why we did not use the linear valuation in any interpretation for this examination. If the inflation rate of 80.2 per cent for 1991 is taken as an outlier, the linear relationship between the two variables will be a strong moderate one, indicating that 56.5 per cent of the medical health care seeking behaviour of Jamaicans can be explains by a 1 per cent change in inflation rate.

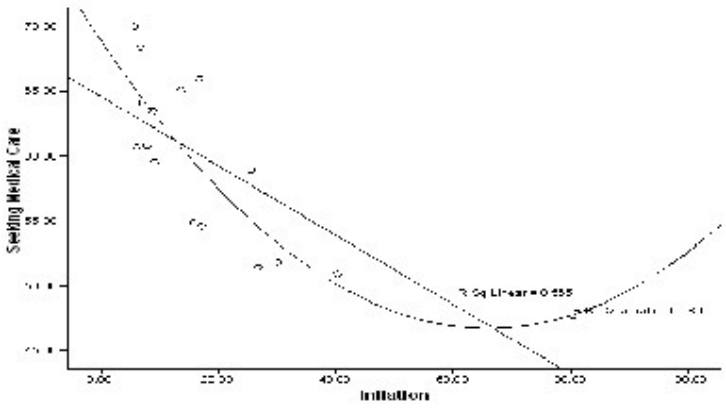

Fig. 12: Seeking Medical Care By Inflation

Hypothesis 13:

There is a correlation between People Seeking Medical Care and Incidence of Poverty

The relationship between people 'seeking medical care' and 'incidence of poverty' is a curvilinear one. This correlation is a strong negative one (R = 0.871). This finding revealed that the more 'incidence of poverty' increases, the less likely it is that Jamaicans will demand medical care whether public or private. Furthermore, there is a minimum percentage of 'incidence of poverty' beyond which people begin to demand more medical care suggesting that reduction in 'incidence of poverty' explains 75.9 per cent of the reason for people seeking medical care.

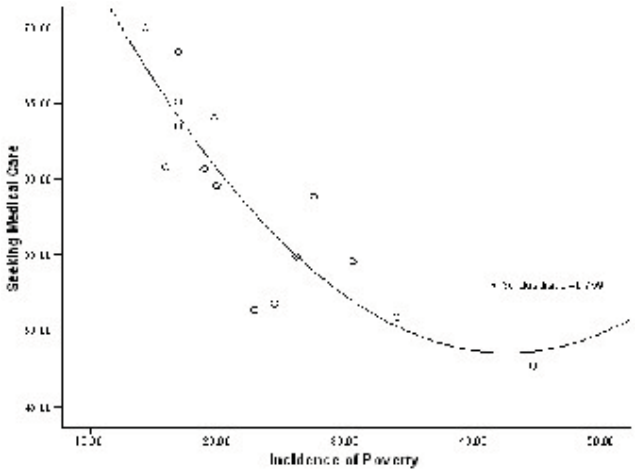

Fig. 13: Seeking Medical Care and Incidence of Poverty

Hypothesis 13:

There is a positive correlation between health seeking behaviour and health insurance coverage

There is a strong statistical correlation between people 'seeking medical care' and 'health insurance coverage' (Figure 14). The relationship between the two aforementioned variables is curvilinear as people will seek more medical care with the ownership of more health insurance coverage. The demand for health insurance optimizes at 18.4 per cent, after which the population begins to seek less medical care. This means that health insurance coverage is a good predictor of people willingness to demand (or seek) health care in Jamaica.

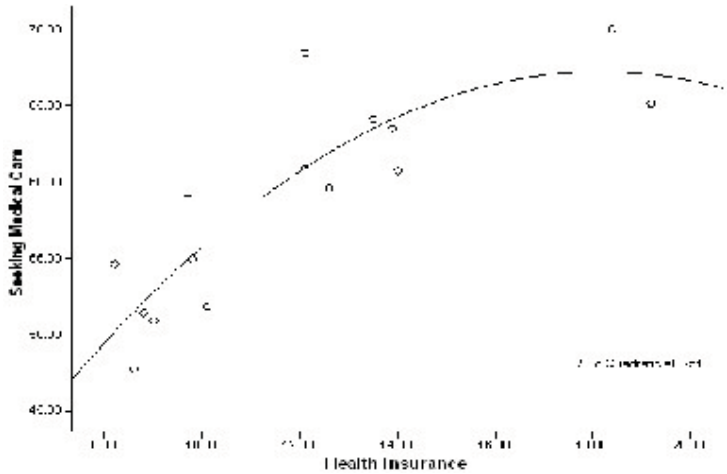

Fig. 14: Seeking Medical Care and Health Insurance

Limitation of Study:

The current study is affected by a number of limitations which influence its findings. The use of secondary data limits the investigators to analyzing issues within the dataset. In addition to the aforementioned issue, owing to the number of data points were limited to bivariate correlations as the data did not lend itself to multivariate analysis. This limitation means that we do not simple a single markers of factors that simultaneously determine public and private health care utilization. Furthermore, Jamaica does not have statistics on depression rates in the period of the study and so we were unable to disaggregate illness/injury in order to establish whether the increase in illness/injury in inflationary periods is owing to psychological or physiological symptoms.

Discussion:

Generally, Jamaicans have a preference for private health care service utilization than public health care service utilization (Table 1). For the past 2 decades [1988 to 2007], Jamaicans have an ostensibly preference for private health care service. During 1991 to 1998, the minimum self-reported usage of private health care facilities was 60 per cent with the highest being 67 per cent in 1994. However over the last decade [1998 to 2007], this preference has been declining indicating that a switch has been occurring to public health care service utilization. In order to understand the substitution of private for public health care utilization within the context of reduced 'incidence of poverty', the phenomenon of inflation must be taken into account within this discourse that seek to explain the rationale for the switching of public and private health care utilization.

Inflation in the last one half decade [2003 to 2007] has been increasing unlike the first from 1988 to 1992 when the rate was as high as 80.2 per cent. It is well established in literature that inflation retards production, reduce real wages and lower standard of living (King, 2001; Bourne, 2004; Wilson, 1982; Thomas, 1998; Alleyne, 2001; UNDP; Zoega, 2002; Phelps and Winter, 1970; Leman, Luca, 2000; Friedman, 1976; Friedman, 1977; Gordon, 2003; Phillips, 1958; Phelps, 1967; Gordon, 1976; Mankiw, 2000). It also creates socio-economic challenges such as reduced real wage, unemployment, increased prices, lowered rate of ownership of health insurance, declining health seeking behaviour, increased poverty, and then there is the issue of in affordability of goods and services. With the increase in prices (costs) owing to inflation, there will be many challenges for customers, clients and patients but it must be noted here that some inflation is good in an economy. This study is not examining some inflation but persistent inflation. Again inflation retard Gross Domestic Product, increased costing of goods and services in an economy, which speaks to the economic challenges of poor and other people with that society.

Despite the high inflationary period of the early 1990s, Jamaicans demand for private health care utilization was higher than that of public health care utilization. The current study has revealed a strong negative statistical correlation between 'seeking medical care' and inflation as well as a strong association between 'seeking medical care' and 'incidence of poverty'. This is coupled with the reality that private health care costing is greater than that of public health care, which accounted for the high utilization of private health care in the 1990s. The problem arises, when inflation becomes persistent as people's real wage will be lowered, unemployment rises, a downturn in the world economy in particular America, and this provide all the economic challenges to borne on health utilization. A group of scholars (Luea, 2000) have found a positive correlation between unemployment and low income (Friedman, 1976; 1977) and suicides (Burke, 1985; Mahy, 1993; Yoshio, 2005; Yamaskai *et al.,* 2005) and when this is juxtaposed with these research findings, persistent inflation and the economic recession in America coupled with the higher prices of 'food and non-alcoholic beverages' as well as fuel in addition to the time lag between price reduction in the global economy and Jamaica, these economic challenges are accounted for the substitution of public and private health care utilization. Another explanation for the increase in private health care utilization in periods of high inflation is owing to the positive correlation between inflation and illness, suggesting that although costs are increasing there is the need for medical care. There is a critical finding that emerged when we examine the statistics as periods of high inflation 'seeking medical care' is lower indicating that people resort to more home remedy. This is evident as in 1991when inflation was the highest (80.2 per cent); seeking medical care was at its lowest (47.7 per cent) in the 2 decades of statistics reviewed for this study.

The current study showed that inflation is positively correlated with 'incidence of poverty' which concurs with the literature (King, 2001) and within the context that inflation is directly associated with lowered real wages coupled with increased pricing of goods, and a marginal increase in seeking medical care. Noting this it should not be surprising that there is a switching from private health care utilization to public health care utilization. This study revealed a strong indirect correlation between private health care service utilization and public health care service utilization, with a fixed income or lowered real wages and increased prices of 'food and beverage', inflation which is expressed through prices changes all commodities is explain reduced health care seeking behaviour as well as the purchase of health insurance as decision to buy 'food' is filled first before health care is sought by people.

This study showed that when inflation is low the demand for private health care facilities is significantly greater than public health care services. It was also found that when inflation rises beyond a certain percentage (40 per cent), there is a substitution of private health care services with public health care service utilization. Embedded in this finding is the strong preference for private health care services of Jamaicans as they do not merely substitute private for public health care services when inflation is low or it is not sustained over a year. Thus, what this study has highlighted is the fact that if inflation continues to rise over many years people will switch from private to public health care services. Inflation does not only influence the cost of private health

care services as this equally affects the cost of medical care of public health care services. Costing is an important ingredient in decision to utilize public and private health care services and what emerged from this study is fact that poverty increases when inflation increases and this suggest that substitution has to do with affordability. This fact is supported by the statistics from the Jamaica Survey of Living Conditions that have showed that over the last one half decade, the poorest Jamaicans have increased their spending on 'food and beverage' from 50 per cent to approximately 54 per cent and lower their demand for health care. On the other hand, the wealthy and wealthiest Jamaicans have increased their spending on 'food and beverage' but their expenditure was less than 40 per cent. It follows that with the increase spending on 'basic food' within the context of persistent rise in inflation, this accommodates for the substitution of private health care facilities to public health care services.

Health care seeking behaviour falls in periods of persistently high inflation. Using health insurance as a proxy for health care seeking behaviour, over the last one half decade health insurance coverage has been falling and this support the private-public health care substitution. There is an important finding here as there is a positive correlation between inflation and illness/injury and this justifies the increase in public health care utilization as in periods of inflation this means increased prices even in medical care. Inflation mean higher prices and people will have less disposable income to spend on health care as they must spend more for consumption goods (food and beverage). One scholar argued that the Jamaican economy underperformed in comparison to other Latin American and Caribbean societies in the 1990 (King, 2001) and inflation did not only reached a record 80.2 per cent in 1991, but private health care utilization was the highest in that period. There is a crucible fact in this high private health care utilization as demographic compositions of those who access this facility are private middle-to-upper class individuals. This is inferred from the statistic of the Planning Institute of Jamaica and the Statistical Institute of Jamaica (Jamaica Survey of Living Conditions) (Table 5) that showed that approximately 68 per cent of consumption of the poorest Jamaicans is spent on food, beverage and household expenses, with a maximum of 7 per cent spent on health care. Hence, in period of persistently inflation, the wealth and the wealthiest suffer from more injuries as the current study revealed a positive correlation between private health care service demand and inflation, and it was found that direct association exists between injury/illness and inflation. The poor on the other hand in periods of high inflation will resort more to spending on 'food and non-alcoholic beverage' than on health care, which justify reduce public in periods of persistently high inflation. For the poor in periods of low inflation they will attend to health care more than in periods of high inflation and this is equally the case for the middle class. Furthermore, in periods of low inflation the addition amount that is available to the individual coupled with lower cost of health care explains the influx of people attending public health care because they are able to afford their natural preference for private health care services that becomes difficult in times of exorbitantly high prices.

Given that increased cost of medical care is not only synonymous with private health care utilization, and Jamaican preference for private health care utilization is evident as the rate of substitution in periods of low inflation for the services of private health care facilities is such that it is wider than in periods of persistently high inflation. Embedded in this reality is the society low appetite for utilizing public health care services. One of the rationale for public health care utilization not been overtaken by public health care utilization is the fact that private health care costing has been reducing and this as well as the composition of the those who attend former facilities accounts for the reduction but not the total substitution. Private health care facilities provide a product in a different milieu and the service quality is different from that provided by public health care facilities; hence, the substitution from attending public health care facilities is substantial in the periods of low inflation but in high inflationary periods, the rate of substitution away from private health care facilities is lower than that of substitution rate in periods of low inflation. The performance of public and private health care services was never assessed in this study, but it can be extrapolated from the findings that Jamaicans are dissatisfied with the services offered by public health care facilities and this is borne out from the high substitution rate in period of low inflation, suggesting that if they were able to afford it in period of inflation they would have maintain utilizing the services of private health care facilities.

The poorest in any society is the most affected in periods of inflation (persistent or otherwise) and this is also reflected in the health seeking behaviour statistics. In 1991, when inflation was 80.2 per cent statistics revealed that Jamaicans seek the least health care in 2 decades (47.7 per cent – Table 6). On the contrary, when inflation was at the least in the 2 decade period (5.7 per cent), Jamaicans sought medical care the most in the period (70.0 per cent). One of the findings of this study is the strong correlation between medical care seeking behaviour and inflation and within the context that inflation affects the poorest the most, the findings revealed that in the period of the highest inflation, incidence of poverty stood at its peak and medical care demand was

at its least. Public health care demand Jamaica is substantially a poor people phenomenon and this is embedded in the statistics as periods of high inflation (40 to 81 per cent) which corresponds to high incidence of poverty, public health care utilization was at its least will private health care utilization was between 1.6 to 2.2 times more than that of visits to public health care facilities. Another issue that emerged from this finding is the stressed level of those in the middle to upper classes in period of high inflation and how they resort to medical care to address their psychological state. The poor, on the other hand, because they are unable to afford medical care compared to the middle class or the affluent resort to home care and violence. Using Anthony Harriott's work (Harriott, 2004), we found that the rates of violent crimes (per 100, 000) in Jamaica increased from 1988 to 1990, and over 1990 to 1992 during the period in which inflation and incidence of poverty were high and health seeking behaviour of the poor was low.

Costing of health care services (Bailey *et al.,* 2004) is not the only deterrent to the utilization of public health care services in Jamaica as the operation of public health facilities is a part of the rationale for the switching in periods of affordability. A study conducted in Jamaica using a mixed methodology (survey of 1,017 respondents and a focus group) revealed that loudness of staffers, embarrassments, aggressive behaviour, physical layout of the public facilities including the cleanliness of the facilities were among some of the reasons given for dissatisfaction with public health utilization (Bailey *et al.,* 2004) and these were concurred by the World Development Report (Hnited, 2006). The World Development Report identified a number of factors – credibility of public health staffers, unprofessional treatment of patients, abuse, corruption- that we will title switching factors that account for the substitution of private to public health care utilization. Those are some of the reasons why Jamaicans prefer utilizing private health care services as the treatment of the staffers is highly professional, respectful and accommodating unlike the aforementioned issues that are synonymous with public health care. Another deterrent factor that emerged from Bailey and her colleagues' work was transportation cost. This speaks to the accessible of health care for some residents who dwell in rural areas coupled with their economic state of poverty.

What accommodates for the narrowing of the gap between public and private health care utilization in Jamaica within the context of an economy has been experiencing lowered rates of 'incidence of poverty' and lower rate of inflation than in the 1990s? In September 2001, American experienced the 9/11 and the year proceeding that remittances was 26.6 per cent and this was the lowest in six years [2001 to 2006] (Table 3). Now with the downturn in the world economy in particular the American economy, this explains why Jamaicans have received lower remittances in 2007 (Table 4). Remittance is a source of income for many Jamaicans, and the downturn in the American economy is negatively impacting on the amount that is received by Jamaicans. For 2007, the per cent of Jamaicans receiving remittances fell (Tables 3 & 4). Remittance normally is an income subsidy for countless Jamaicans and this accounts for lowered expenditure on health care and other goods (or services). Although inflation rates are not generally comparable to that of the 1990s, again the recession in the American economy is resulting in lowered income for many Jamaicans and inflation for 2007 over 2006 has increased by 289.04 per cent. It should be noted here that less Jamaicans in 2007 utilize both public and private health care services, suggesting more people were resorting to home remedy. This is supported by the statistics which revealed that 66 per cent of Jamaicans seek medical care compared to 70 per cent in 2006. The lowered economic growth in the United States coupled with the increases in global food prices, the rise in prices of foods; beverage and fuel are forcing Jamaicans to substitute utilizing private health care services for home care.

Recently (2007), the Jamaica removes the cost associated with medical care from all public health care institutions and this would not be captured in the 2007 public health care utilization but this would be catering to a few people who wanted to attend those institutions but were not able to afford it. Primarily those who attend private health care institutions are those of the middle-to-upper class who still do not have a preference for public health care services (visits). The lowering of the cost of public health care means a lowering of health care cost of private health care services. This adjustment in prices accommodate for the lowering of substitution away from private health care to public health care despite the reality of economic recession in the world economy. Based on Table 2, annual inflation on 'food and non-alcoholic beverage' has increased by 24.7 per cent in 2007; cost of medical care has increased by 3.4% coupled within the context of massive general annual rate of 16.8 per cent inflation, the challenges of survivability is becoming increasing more difficult and so more people are resorting to traditional care (home remedy). Jamaica Survey of Living Conditions (2006) had that 28.5 per cent of Jamaicans indicated that they used home remedy as it was the preferred way to go compared to 16.8 per cent in 2004; and in 2006, 22.2 per cent reported that they were unable to afford medical costing compared to 19.6 per cent in 2004.

In a national survey that was conducted in 2006, Powell, Bourne and Waller (2007), using probability sample of technique drew a sample of 1,338 Jamaicans (respondents), when the respondents were asked "How would you describe your present economic situation ad that of your family?", 69% indicated at most average and this figure 19% indicated bad and very bad. Another question that was asked is "Does you salary and the total of your family's salary allow you to satisfactorily cover your needs?" only 38.1% of Jamaicans said that their salary was able to cover their needs. In the same study, when the respondents were asked "[Do you] feel secure about the state [your] health?", out of a maximum 10 points, those who classify themselves as in the lower class had a score of 5.8, the middle class had a score of 6.7and the upper class, 6.6.

Concluding Remarks:

This paper has presented an exploration of public and private health care utilization in Jamaica and in the process provides an understanding of the role of inflation on health seeking behaviour as well as an explanation for the narrowing of the gap between the two aforementioned utilizations. While inflation accounts for a low percentage of the explanation for the switching, when it is persistent it results in increased unemployment, cost of living, downturn in the economic, forfeiture in the payment of debts, and the increased in deprivation of the poor. This research is advantageous to policy makers, medical practitioners and other scholars as we provide information on this critical matter, but there are many areas that we were unable to examine given that we used secondary data. It would be interesting to see whether suicides increase in periods of persistently high inflation or depression increases in periods of inflation but data on the matter are not consistent over the period. Nevertheless, we provide pertinent information within the context of the available data for 2 decades (1988to 2007). We will now conclude on the important issues of the study.

There is an increasing concern in the world about economic recession, lowered real wages, redundancies, increased prices, declining consumer demand for good (or services) and poverty, but in our quest to stimulate economic growth because of its influence on all aspects of socio-economic development, and now there is a study that has examined the relationship between inflation and public and private health care utilization. Using two decades of statistics, the findings of showed that persistently increased inflation results in substitution from private to public health care utilization, and that in periods of low inflation (single digit), the rate of substitution for private health care utilization away from public health care services is significantly greater. One of the fundamental aspects to development is people, and people are primarily concerned about their survivability which explains a critical aspect to this study. One of the crucible finding of the current research is the positive correlation between inflation and illness/injury. Within the context that persistent inflation over the last one half decade in Jamaica (2003 to 2007) coupled with the increased prices in 'food and non-alcoholic beverages', Jamaican are resorting to home care. Jamaicans have a preference for private health care utilization, and within the context of the economic recession in America that influences the survivability of tourism industry, remittances and the economic opportunities of countless Jamaicans, people are resorting more to home care instead of substantially substituting private for public health care utilization. In keeping with the natural instinct to survive with the aforementioned issues, Jamaicans have taken the decision to fulfill their basic physiological needs (food, shelter, and health) and with the persistent increase in those commodities, they have taken decisions to spend on food, shelter, clothing and less on health care except if their ill-health depends on their state of survivability. Food and beverage fulfill fundamental needs, and in case of increased prices this will automatically mean they will spend more on those commodities, and reduce their spending on health care.

Powell, Bourne and Waller, (2007) work when the respondents were asked "[Do you] feel secure about affording necessities" out of a maximum score of 10, those who classified themselves as lower class indicated 5.2, the middle class and the upper class indicated 6.7. Poverty (poor) means deprivation from resources – income, health insurance coverage, schooling, poor sanitation and drinking water, and nutrition - and this account for them demanding less health care in period of high inflation. They will be unable to afford 'food and beverage' and this they would prefer to purchase as against demand medical care and so explain their low access to health care which accounts for more home care in this cohort. Therefore, poor who equally prefers private health care services in Jamaica is unable to afford this, and their state accounts for lowered public health care utilization in high inflationary period. In inflationary periods the middle class to the wealthiest class demand more health care which is in keeping with the psychological stressors of the time. Accordingly, the narrowing of the gap between public and private health care in Jamaica is owing to (i) persistent increases in the inflation rates, (ii) increase prices for consumption and non-consumption goods – including foods, fuel and transportation costs, (iii) the downturn in the American economy and (iv) increases in illness/injury within the aforementioned context. With education, despite the challenges of economic shortfalls in the nation, people realize the importance of seeking medical care and in order to accomplish this reality, the substitution of private for public health care utilization is in keeping with health consciousness and increases costing of foods and non-consumption commodities.

Poverty in Jamaica is synonymous with rural residents (Table 7) and although there has been a substantial decline in the prevalence of poverty over the years and more so in 2007 (Table 1), it increased in rural Jamaica. With the downturn in the America economy which is having an inverse effect on remittances, increases in prices of food and non-alcoholic beverages coupled with the increased poverty in rural Jamaica, a part of the decline in public and private health care utilization and expenditure (Table 5) is owing to economic difficulties faced by rural residents. Some Jamaicans continue to purport that among the difficulties for not seeking health care is affordability – in 2007 over 2006, real mean public expenditure on public health care (in 1990 $) decline by 40.5% while in the same period mean amount spent on drug fell by 20.8%- and this reality is compounded for the elderly populace. Unlike the working age population, a small proportion of the elderly are employed in addition to increased prices, downturn in the Americans, lowered remittances and increased poverty in rural Jamaica, the elderly who constitute of approximately 47 per cent of the rural Jamaica (Table 8) are having to facing the economic challenges of the time. Within the context of those realities, the lowering of health care seeking in Jamaica is due to elderly residents' withdrawal from seeking health care accounted for the lowered public and private health care utilization and expenditure.

This research has many unresolved questions that are felt for further studies. One, we know that there is a correlation between illness/injury but we are not cognizant whether or not this is owing to physical or psychological conditions. Two, the study assumes that males and females are similar experiences and with the context of studies that have shown that there is disparity between the socio-economic conditions of the sexes, the research is needed to clarity any similarities (or dissimilarities). Third, poverty is synonymous with rural areas and so any study that seeks to understand Jamaicans experiences must disaggregate this by area of residence and age cohorts. Fourthly, Jamaica is an island that is interdependent on the global economies and so it would be interesting to inco-operatate this on public and private health care utilization in Jamaica.

Table 1: Inflation, Public and private health Care Service Utilization, Incidence of Poverty, Illness and Prevalence of Population with Health Insurance (in per cent), 1988-2007

Year	Inflation	Public Utilization	Private Utilization	Prevalence of poverty	Illness	Health Insurance
1988	8.8	NI	NI	NI	NI	NI
1989	17.2	38.0	54.0	30.5	16.8	8.2
1990	29.8	39.4	60.6	28.4	18.3	9.0
1991	80.2	35.6	57.7	44.6	13.7	8.6
1992	40.2	28.5	63.4	33.9	10.6	9.0
1993	30.1	30.9	63.8	24.4	12.0	10.1
1994	26.8	28.8	66.7	22.8	12.9	8.8
1995	25.6	27.2	66.4	27.5	9.8	9.7
1996	15.8	31.8	63.6	26.1	10.7	9.8
1997	9.2	32.1	58.8	19.9	9.71	2.6
1998	7.9	37.9	57.3	15.9	8.8	12.1
1999	6.8	37.9	57.1	16.9	10.1	12.1
2000	6.1	40.8	53.6	18.9	14.2	14.0
2001	8.8	38.7	54.8	16.9	13.4	13.9
2002	7.2	57.8	42.7	19.7	12.6	13.5
2003	13.8	NI	NI	NI	NI	NI
2004	13.7	46.3	46.4	16.9	11.4	19.2
2005	12.6	NI	NI	NI	NI	NI
2006	5.7	41.3	52.8	14.3	12.2	18.4
2007	16.8	40.5	51.9	9.9	15.5	21.2

Source: Bank of Jamaica, Statistical Digest, Jamaica Survey of Living Conditions, Economic and Social survey of Jamaica, various issues
Note: Inflation is measured point-to-point at the end of each year (December to December), based on Consumer Price Index (CPI)
NI No Information available

Table 2: Annual Inflation in Food and Non-Alcoholic beverages and Health Care Cost, 2003-2007

	Food and Non-Alcoholic beverage	Health Care Cost
2002	7.8	5.2
2003	10.0	9.7
2004	13.7	6.4
2005	11.7	7.5
2006	5.0	9.7
2007	24.7	3.4

Source: Planning Institute of Jamaica, Economic and Social Survey of Jamaica, various issues
Note: Inflation is measure using point-to-point at the end of the year (December to December).

Table 3: Percentage of Households Receiving Remittances By Region, 2001-2005

	YEAR						
Region	2001*	2002*	2003*	2004*	2005*	2006	2007
KMA	28.7	22.2	27.9	30.2	38.4	50.4	41.5
Other Towns	34.2	27.9	32.7	38.9	43.3	45.0	48.6
Rural Area	41.6	28.9	33.0	32.1	36.9	42.3	38.6

Jamaica35.826.631.532.938.745.341.8
Source: Jamaica Survey of Living Conditions, 2006
*Revised Figures 2001-2005

Table 4: Percentage of Households Receiving Remittances By Quintile, 2001-2005

	YEAR						
Quintile	2001*	2002*	2003*	2004*	2005*	2006	2007
Poorest	26.0	19.8	20.6	22.5	21.2	30.4	26.0
2	35.3	25.9	28.1	29.6	38.8	40.3	33.0
3	44.0	28.4	35.7	34.7	38.9	41.5	44.2
4	35.8	29.9	37.0	35.2	42.1	47.4	46.6
5	35.0	26.4	32.1	35.7	43.4	54.9	48.6
Jamaica	35.8	26.6	31.6	32.9	38.7	45.3	41.8

Source: Jamaica Survey of Living Conditions, 2006-2007
*Revised figures 2000-2005

Table 5: Mean Patient Expenditure ($) on Health Care in Public and Private Facilities in the Four-Week Reference Period, JSLC 1993-2004, 2006

Year	Visits				Drugs			
	Private		Public		Private		Public	
	Nominal	Real (1990$)	Nominal	Real (1990$)	Nominal	Real (1990$)	Nominal	Real (1990$)
1993	298	85	115	33	331	94	131	37
1994	461	109	91	21	417	98	163	38
1995	496	99	130	26	509	101	234	47
1996	598	104	148	26	685	119	176	31
1997	693	95	283	39	946	129	575	78
1998	832	106	315	40	1050	134	316	40
1999	1301	154	339	40	1196	142	401	47
2000	1081	120	309	34	1241	138	468	52
2001	1103	115	546	57	1698	177	742	77
2002	1339	132	464	46	1501	148	541	56
2004	2278	191	489	41	2181	183	843	71
2006	1406	101	860	62	2212	158	1174	84
2007	1679.5	114.2	539.9	36.9	2573.1	174	929.7	66.5

Source: Jamaica Survey of Living Conditions 2002, 2006 and 2007

Table 6: Purchased medication and Seeking Medical Care (Per Cent), 19-2006

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2004	2006	2007
Per cent purchased medication															
Public	NI	8.9		21.4		19.1	22.0	19.7	18.5	20.8	20.0	26.5	19.1	15.9	13.7
Private	NI	58.5		75.6		78.0	74.3	76.6	77.0	73.3	76.9	68.0	74.3	76.6	80.3
Seeking medical care	47.7	50.9	51.8	51.4	58.9	54.9	59.6	60.8	68.4	60.7	63.5	64.1	65.1	70.0	66

Source: Jamaica Survey of Living Conditions 2002, 2006 and 2007
NI No Information Available

Table 7: Distribution of Poverty By Region (Per cent), 1997-2007

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Region											
KMA	13.6	12.5	18.2	17.2	14.7	15.8	12.8	26.3	20.3	21.2	19.9
Other Town	13.1	15.1	12.5	16.0	13.7	15.7	13.2	9.9	9.3	13.1	8.9
Rural Area	73.3	72.5	69.3	66.8	71.6	68.5	74.0	64.7	70.2	65.7	71.3

Source: Jamaica Survey of Living Conditions 2002, 2006 and 2007

Table 8: Distribution of Elderly Population (ages 60 years and older) By Region (Per Cent), 1997-2007

Year	KMA	Other Towns	Rural Area
1997	27.2	18.5	54.3
1998	18.4	16.1	65.6
1999	26.6	18.0	55.4
2000	28.4	19.0	52.6
2001	25.4	19.4	55.2
2002	27.0	14.7	58.3
2003	25.0	13.8	61.2
2004	29.1	21.5	49.4
2005	30.9	21.4	47.7
2006	30.8	22.7	46.5
2007	32.5	20.9	46.6

Source: Jamaica Survey of Living Conditions, 2007

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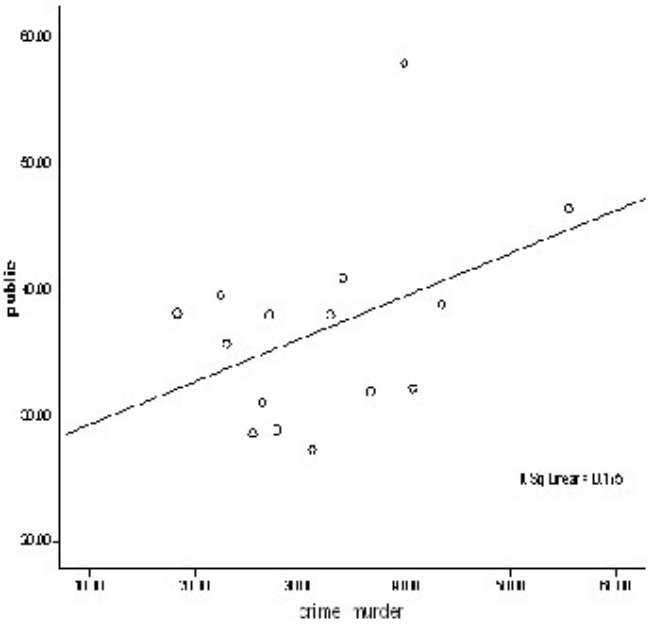

Fig. 15: Public Health Utilization and Crimes (Homicides per 100,000)

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