

## Poverty, Employment and HIV/AIDS in Trinidad and Tobago

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### Abstract

*This paper examines the strength and direction of the association between poverty and HIV/AIDS in Trinidad and Tobago. A Granger Causality test and a Vector Auto-Regression model were used to ascertain whether the traditionally assumed bicausal relationship between poverty and HIV/AIDS holds for Trinidad and Tobago. The test results suggest a two-way link between female unemployment and the incidence of HIV/AIDS. Moreover, HIV/AIDS impacts on the level of overall employment but the reverse impact is not indicated. These results point to a negative impact of HIV/AIDS on socioeconomic status which is slower than the reverse relationship. In other words, when one is unemployed and poor, one is more vulnerable to contracting HIV/AIDS and the period within which one may fall prey to the disease is shorter than the time it would take for a non-poor person who contracts the disease to become unemployed and poor as a result of the disease.*

**Keywords:** HIV/AIDS; Trinidad and Tobago; Caribbean; Poverty and Health

### 1. INTRODUCTION

The faces of poverty are many, some too painful to describe. Some poor individuals also have the Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). Poverty pervades subgroups such as the unemployed and migrants. Absent fathers result in women being drawn into transactional sex in order to “put food on the table” and natural disasters heighten the vulnerabilities of all Caribbean citizens, especially the poor. Conventional wisdom tells us that persons with lower incomes are at most risk of contracting HIV/AIDS. In fact, with over 20 years of epidemiological history, the United Nations (2005) concluded that “*Poverty and HIV/AIDS are interrelated*”. In addition, Ganyaza-Twalo and Seager (2005) noted “*The relationship between HIV/AIDS and poverty is synergistic and symmetrical. As much as HIV/AIDS exacerbates poverty through morbidity and mortality of productive adults, poverty facilitates the transmission of HIV.*”

To assume that such conclusions apply to all countries may be presumptive especially since the Caribbean has had a complex experience. The regional experience with HIV/AIDS has been one of low income countries with low incidence of HIV/AIDS (Cuba) and cases of low income countries with very high incidence of HIV/AIDS (Haiti). However, the intra-country situation differ somewhat—in some cases the link is clearer, in others it is more abstract. In the case of Trinidad and Tobago, there were no reported cases of HIV/AIDS before 1983 (Caribbean Epidemiology Centre (CAREC)/Pan American Health Organizations (PAHO)/World Health Organization (WHO), 2004) however the country has experienced increasing incidence ever since. During that same period the Gross National Income of Trinidad and Tobago increased, though pockets of poverty persisted with 15.5 percent of the population remaining poor in 2005 ( Kairi Consultants, 2007). Independent of each other, poverty and HIV/AIDS have the capacity to reverse the development gains.

With both conditions present, deterioration of the economic and health circumstances may occur as the two situations impact on each other. This paper seeks to understand the nature of the relationship between poverty and HIV/AIDS in Trinidad and Tobago, while formulating solutions to ensure future socio-economic development.

## **2. THE EPIDEMIOLOGY OF THE DISEASE IN TRINIDAD AND TOBAGO**

Chronic diseases such as Ischemic Heart Disease and Diabetes Mellitus accounted for most of the leading causes of death in Trinidad and Tobago, and yet HIV/AIDS was in sixth place for 2001 (PAHO 2007). The trend from 1983, when the first loss of life due to AIDS occurred, to 2001 has been generally increasing with the exception of 1997 (refer to figure 1). It can be argued that some aspects of the culture of Trinidad and Tobago is conducive to the occurrence of unsafe sexual encounters (Mokool 2007). The acceptance of multiple partner relationships has resulted in females 15-34 years old having an HIV/AIDS prevalence (60.2 percent) much higher than that of their male counterparts (Trinidad and Tobago National AIDS Coordinating Committee 2008). In addition to cultural influences, the socio-economic situation of a female can also lead to compromises and acceptance of behaviours of her male partner which can expose her to a higher risk of infection. Moreover, the Carnival period, which is the most evident manifestation of the country's culture, usually spawns a range of festive events attended by locals as well as visitors from around the world. It is not unusual that in the wake of the festivities, HIV cases and unwanted pregnancies typically follow.

The vulnerability of children has been one of the features of the progress of HIV/AIDS in Trinidad and Tobago. Children are orphaned due to the epidemic as their caretakers/guardians die. According to the UNAIDS (2004) an orphan is: "...*a child under the age of 18 who has had at least one parent die*." As shown in Table 1, the Trinidad and Tobago situation appears severe. There has been a ten-fold increase in AIDS orphans as a percentage of total orphans from 1990 to 2001. Not only are children likely to be orphaned by the disease, but they may also be born with HIV/AIDS. Pregnant women who are infected can transmit the infection to their unborn babies. Prior to 2001, the HIV prevalence among pregnant women showed a tendency to increase but thereafter, the data indicate a decrease from 1.9 percent in 2001 to 1.6 percent in 2005 (UNAIDS and WHO 2008) largely due to increased access to Voluntary Counselling and Testing and free anti-retrovirals. In addition to women and children, Commercial Sex Workers (CSWs) are one of the most susceptible groups to HIV/AIDS. A reference to CSWs would usually raise the question of substance abuse. One UN source has highlighted the link between substance abuse and HIV/AIDS. "*Substance abuse is well known as contributing to impaired judgment and the need to support the individual's addiction create vulnerability to commercial and unprotected, casual, and non-consented sex.*"(UNAIDS 2005, 5).

In fact, UNAIDS (2006) also identified crack-cocaine as a factor in the HIV/AIDS epidemic in Trinidad and Tobago. One in five crack-cocaine users were found to be HIV positive (Reid 2006) and 30 percent of new HIV infections were among cocaine users in 1999. While crack-cocaine dominates, other drugs like alcohol and marijuana are also contributing factors. Men who have sex with men (MSM), another most-at-risk sub-population, were the first to contract HIV/AIDS in the 1980s in Trinidad and Tobago. According to Camara (2002) the "*First reported Caribbean AIDS cases in Haiti, Jamaica, Trinidad and Tobago were among gay men who had sex with North American gay men in North America or in the Caribbean.*" More recently it has been found that 20 percent of MSM in the capital city of Port-of-Spain were infected with HIV (Trinidad and Tobago National AIDS Coordinating Committee 2008). This is compounded by implications of the findings of a survey done in 2004, that only 47 percent of gay men used condoms the last time they had sex with a male partner. In summary, the epidemiological profile points to a link between socio-economic status and HIV/AIDS. Sex is traded for money by women trying to secure themselves economically, by individuals opportunistically exchanging sex for money during Carnival and by CSWs in their normal line of work. It would seem therefore that income is an influential factor in the prevalence of HIV/AIDS in Trinidad and Tobago.

## **3. LITERATURE REVIEW**

The literature confirms both the quantitative and qualitative aspects of the relationship between poverty and HIV/AIDS. The exact nature, however, is somewhat ambiguous. This is particularly true for the Caribbean where empirical studies are limited. For a Small Island Developing States (SIDS) such as Trinidad and Tobago, persistent and growing poverty remains a challenge despite periods of economic growth and an array poverty reduction programmes. While there is general agreement that poverty is not the sole determinant of the spread of HIV/AIDS, the international literature suggests a definite link. However, there is no claim that what we have is a uni-causal relationship between the two—poverty alone cannot be used to explain the HIV/AIDS epidemic, or vice versa. In fact, there is more of a bi-directional relationship between poverty and HIV/AIDS.

According to Kürschner (2002, 7), “...the spread of HIV is attributed to a wide range of factors, which include behavioural factors, the quality and access to services and programmes aimed at prevention, care, social support and the mitigation of impact, as well as social and socio-economic factors.” The United Nations Population Fund website highlighted the fact that “HIV/AIDS accompanies poverty, is spread by poverty and produces poverty in its turn.”(UNFPA, under “Poverty and Gender Inequality: Catalyst for the Spread of HIV/AIDS). Moreover, “Poverty's companions encourage the infection: undernourishment; lack of clean water, sanitation and hygienic living conditions; generally low levels of health, compromised immune systems, high incidence of other infections, including genital infections, and exposure to diseases such as tuberculosis and malaria; inadequate public health services; illiteracy and ignorance; pressures encouraging high-risk behaviour, from labour migration to alcohol abuse and gender violence; an inadequate leadership response to either HIV/AIDS or the problems of the poor; and finally, lack of confidence or hope for the future.”(Gilbert 2004, 170)

This is quite an extensive list of the instigators and drivers of the epidemic. What the literature clearly shows, however, is that as a result of the condition of poverty, people become more vulnerable to HIV/AIDS, since these are the people who have less access to the necessary facilities to prevent or treat HIV. Moreover, because of poverty and the inadequate access to resources and opportunities for enhancing productivity, individuals gravitate toward income-earning activities that place them at relatively higher risk of contracting the virus (Kürschner 2002). Whatever the direction of the relationship, the combined impact of poverty and HIV/AIDS can be best seen in the lives of those who have families, friends or neighbours who lived with and died as a result of the epidemic. Stigmatization, disintegration of family structure, loss of income, increased expenditure on medical services and supplies and the death of breadwinners, are only some of the challenges faced (Ganyaza-Twalo and Seager 2005).

HIV/AIDS appears to interact strongly with poverty and this interaction increases the depth of vulnerability of those households already vulnerable to shocks (Ganyaza-Twalo and Seager 2005). Poverty, characterized by limited human and monetary resources, is therefore portrayed as a risk factor to HIV/AIDS. On the other hand, HIV/AIDS impacts negatively on the wealth status (and therefore poverty status) of households through a kind of erosion mechanism. Figure 2 provides a simple framework for explaining the bi-causal relationship mentioned above. Taking into account nutrition, the risk-taking behaviour of individuals, the expenses related to living with the disease (morbidity) and the consequences of dying from the disease, HIV/AIDS and poverty are related to each other in more than one way. These are factors that apply as much in the Caribbean as they do in the rest of the world.

Given the foregoing discussion, conventional wisdom may lead one to conclude that **within** nations, higher HIV infection rates would be found in the lower income regions. However, the international literature and regional data seem to suggest otherwise. The empirical evidence from studies done in the 1980's and 1990's indicates that HIV prevalence rates are higher in higher socio-economic groups. According to the United Nations (2005), in some African countries the HIV prevalence rate in urban areas can be twice as high as that in rural areas. The same source also reports a possible reason: although rural and uneducated youth and adults are less likely to use condoms, they are also less likely to engage in higher-risk sexual activities than their urban and higher educated counterparts. Hargreaves and Glynn (2002) suggest that an increase in the education level can impact on the risk of HIV infection either positively or negatively, depending on the different influences on behaviour. The observation was based on a review of several studies on the relationship between education and HIV. Out of 18 studies done in African nations, only 2 reported a negative relationship between education and HIV (one of which was significant).

Three studies dealt with the relationship between HIV and education in urban and rural settings. In two of them—for Tanzania and Zambia—there was a positive relationship between HIV and education, and a greater chance (odds ratio) of correlation in the rural areas. In another study, HIV and education had a negative relationship in urban areas and a positive link in the rural areas (Hargreaves and Glynn 2002). Where a positive link was found, the authors suggest that persons, especially men, with greater levels of education may have more disposable income which, in turn, allows them greater access to travel and increased opportunity for contact with commercial sex workers. In Thailand, however, several studies conducted between 1991 and 1995 found a significant, negative relationship, or “protective effect” between education and the risk of contracting the HIV. Some of these findings are consistent with research by Gillespie, Kadiyala and Greener (2007), which found positive correlations between HIV infection and economic resources. This link however, is believed to be changing. In addition to the correlation between the epidemic and poverty, studies in sub-Saharan Africa have revealed that at the macroeconomic level, there exists a relationship between HIV prevalence and national wealth that is weak.

At a microeconomic level, the results have been diverse with respect to poverty being a major driver of the epidemic. Some studies done using ethnographic methodologies have concluded that the risk of contracting HIV/AIDS increases with growth in poverty levels.

#### **4. METHODOLOGY**

We use data provided by the CAREC/PAHO/WHO on the number of HIV+ cases reported since 1983 through to 2007. Official estimates of poverty for Caribbean countries over this period are sparse and intermittent. In view of this, we use the number of unemployed persons as a proxy measure for poverty. This is easily justified given the high correlation of poverty and unemployment in the Caribbean context. Given the non-existence of unemployment insurance in nearly all countries of the region, unemployment leaves people vulnerable to poverty. Given that HIV/AIDS is primarily sexually transmitted, and in recent times there has been a feminization of the disease, we also use female unemployment over this time period as an additional variable in the analysis. The unemployment data were obtained from UNDATA. The analytical tools used include a Granger Causality Test to identify the presence of any relationships among the variables, and a Vector Auto-Regression Model to determine the direction and magnitude of the identified relationships. The tests were performed on four (4) variables of interest: growth rate of HIV (gr\_hiv), growth rate in total unemployment (gr\_tue), growth rate in female unemployment (gr\_fue), and growth rate in per capita gross domestic product (gr\_gdppc). The data series were converted into annual growth rates which were found to be stationary. Unit root test results are summarized in Table 2. The series are shown in Figure 3 and Figure 4.

#### **5. ANALYSIS AND RESULTS**

The Granger Causality Test suggested a two-way link between female unemployment and the incidence of HIV (Table 3). For overall unemployment, a uni-directional impact is indicated, that is, the incidence of HIV does have an effect on the overall level of employment. Together these results may be indicating that HIV and poverty reinforce each other, with poor, vulnerable and powerless women being a significant driver of the disease while also bearing the burden of its impact. The estimates from the Vector Auto-Regression are presented in Table 4. These results seem to confirm the relationships suggested by Granger causality. Increases in the level of female unemployment are shown to have a strong positive impact on the growth rate of HIV incidence with the impact manifesting in a short period of time. The obvious correlation between female and total unemployment may be responsible for the opposite sign on the coefficients of the latter in the HIV growth rate equation. But taking this into consideration, the magnitude of the net effect is still suggestive of increases in unemployment having the effect of increasing the growth rate of HIV incidence. The findings of the study indicate that increases in unemployment have the effect of increasing the incidence of HIV/AIDS. There is also a suggestion that while HIV/AIDS exerts a negative impact on socioeconomic status—including employment and poverty status—the impact is slower than the reverse relationship. In other words, when one is unemployed and poor, one is more vulnerable to contracting HIV/AIDS and the period within which one may fall prey to the disease is shorter than the time it would take for a non-poor person who contracts the disease to become unemployed and poor as a result of the disease.

##### **5.1. Implications for Policy Response**

The findings would suggest a strong case for governments of the region to maintain policies aimed at bolstering employment even in the face of the global economic crisis. There may also be merit to exploring the feasibility of designing and implementing income support programmes which target the newly unemployed. The results suggest that HIV and poverty reinforce each other, with poor, vulnerable women being very susceptible to the disease while also bearing the burden of its impact. Further, the results of the analysis suggest a two-way link between female unemployment and the incidence of HIV. Of added significance for policy is the finding that increases in the level of female unemployment have a strong positive impact on the growth rate of HIV incidence with the impact manifesting in a relative short period of time.

The findings also suggest a need for policy aimed at **fairly** keeping Persons Living with HIV/AIDS in the workplace. We emphasize ‘fairly’ because it would be important to ensure that employers are not forced to retain employees merely because of their HIV/AIDS status. There are two issues here. The first is the issue of stigma and discrimination. The point being made is that since the study has shown an unambiguous link between HIV/AIDS and unemployment we need to ensure that we do not allow the stigma and discrimination mechanism free reign in the workplace. Countries should be encouraged to align their workplace policies to the principles outlined by the ILO on this matter.

The second issue is an interesting one but one which is clearly in need of further research. We refer to the possibility that PLWHAs who are made unemployed because of their status may be more prone to risky behaviour for one of many reasons: they may want to take “revenge” on the society;

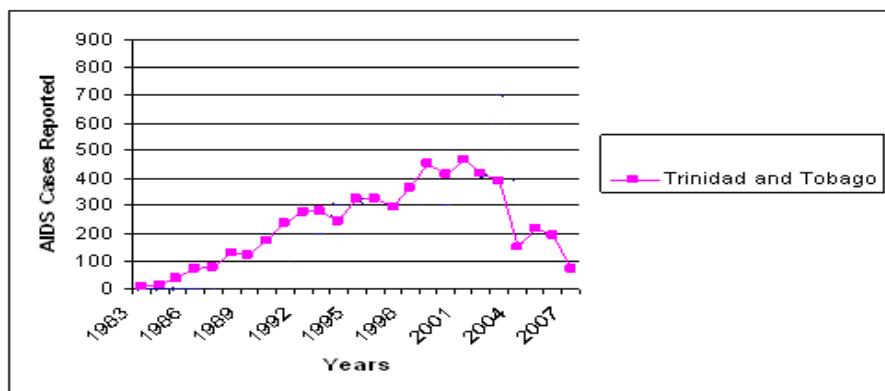
they might see themselves as no longer having anything worth living for; or they may simply be responding to their now more vulnerable socioeconomic status. Partly because of anecdotal evidence in respect of the behaviour of PLWHAs it would be important to strengthen the empirical basis of any conclusions we might draw on this matter.

## **6. CONCLUSIONS**

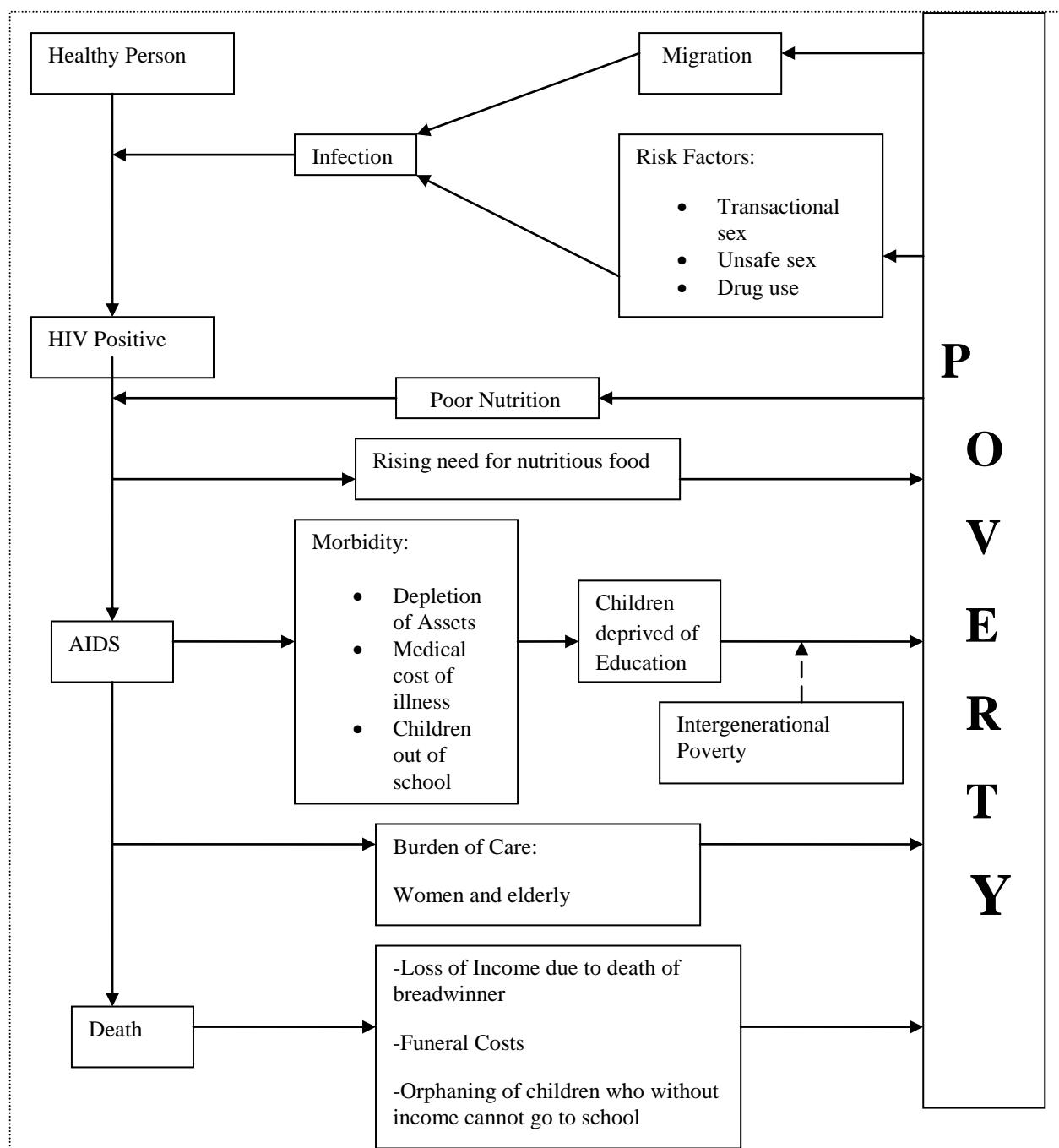
The review of the international literature on the relationship between HIV/AIDS and poverty suggests that while there is a general sense that the two phenomena are related, there is some ambiguity regarding the exact nature of the relationship. This ambiguity is particularly evident when it comes to the direction and strength of the relationship. In the case of Trinidad and Tobago, the results do indicate that there is a two-way relationship between female unemployment and the incidence of HIV/AIDS. The results also indicate that HIV/AIDS exerts a negative impact on overall employment. In summary, the results indicate that HIV/AIDS and poverty reinforce each other, with poor, vulnerable women being a significant driver of the disease while also bearing the burden of its impact. Policies are needed to protect the women of Trinidad and Tobago, as well as the rights of all participants in the labour force. Although the findings of the study point to a qualitative result which does not tell of the strength of the link between HIV/AIDS and unemployment, it is noteworthy that what our results confirm is the importance of seeing the response to the HIV/AIDS epidemic within the broader human development objectives of the country.

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**FIGURE I: Trend in Reported Cases of AIDS in Trinidad and Tobago (1983-2007)**

Source: Trinidad and Tobago National AIDS Coordinating Committee (2008).

**FIGURE 2-Relationship between Poverty and HIV/AIDS**

Source: Adapted from Seager, Ganyaza-Twalo and Tamanse (2005)

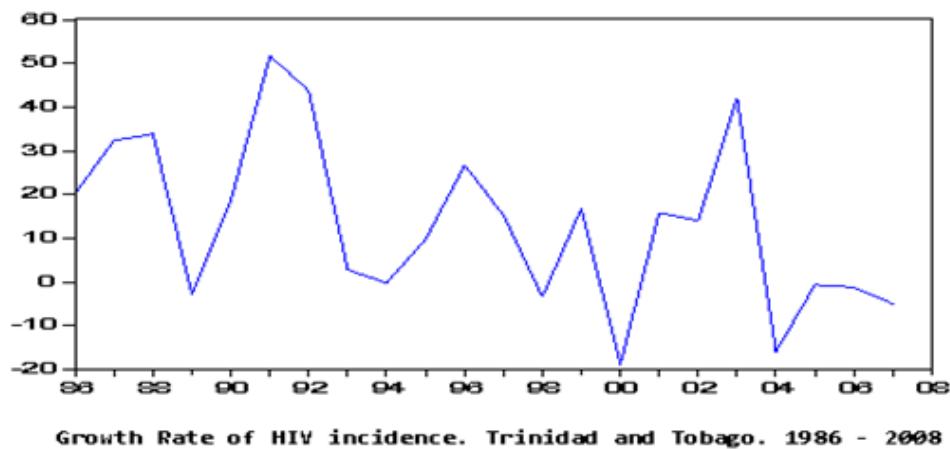
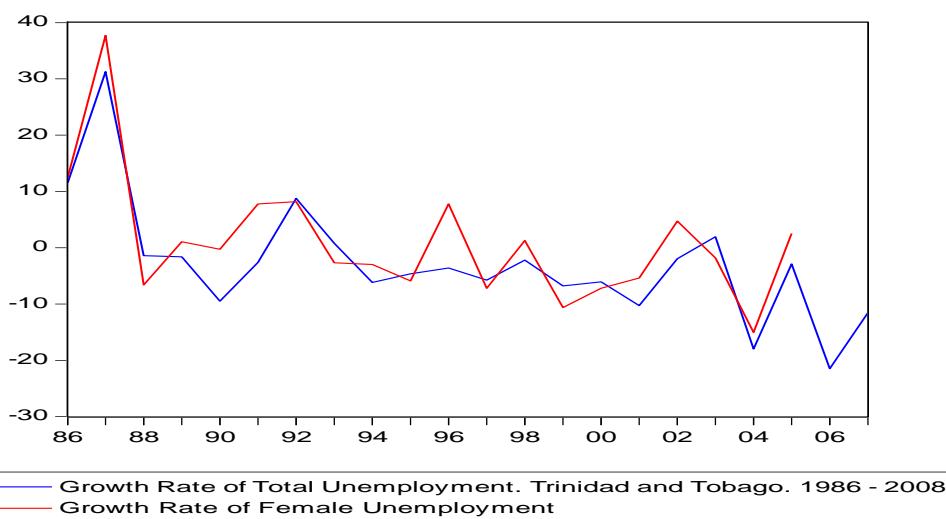
**Table 1: Orphan Estimates in Trinidad and Tobago**

<b>Trinidad and Tobago</b>	1990	1995	2001	2005 <sup>1</sup>
Number of Children 0-14	407	384	312	278
Total Orphans as a % of Children	4.6	4.9	5.7	6.2
Total Number of AIDS Orphans	1000	2000	2000	2000
AIDS Orphans as a percentage of Total Orphans	2.9	9.3	22	26.4

Source: UNAIDS, UNICEF AND USAID (2002)

**TABLE 2: Augmented Dickey-Fuller (ADF) Unit Root Test of Time Series**

<b>Variable</b>	<b>ADF test</b>		
	<b>Equation*</b>	<b>t-Statistic</b>	<b>5% Critical Value</b>
gr_hiv	(C,2)	-3.45	-3.01
gr_tue	(C,0)	-3.18	-3.00
gr_fue	(C,0)	-3.81	-3.02
gr_gdppc	(C,t,0)	-3.90	-3.63

**FIGURE 3****FIGURE 4**

<sup>1</sup> This is a prediction made in 2002.

**TABLE 3: Granger Causality Tests of HIV cases, Female and Total Unemployment. Trinidad and Tobago (1983 – 2006)\***

<b>Null Hypothesis:</b>	<b>Obs</b>	<b>F-Statistic Prob.</b>	
GR_TUE does not Granger Cause GR_HIV	21	0.81218	0.4614
GR_HIV does not Granger Cause GR_TUE		9.07012	0.0023
GR_FUE does not Granger Cause GR_HIV	20	4.28253	0.0338
GR_HIV does not Granger Cause GR_FUE		12.3473	0.0007

\* A lag length of 2 was chosen for these tests.

**TABLE 4 Vector Auto-Regression Estimates of HIV cases, Female and Total Unemployment. Trinidad and Tobago (1983 – 2006)\***

	<b>GR_HIV</b>	<b>GR_TUE</b>	<b>GR_FUE</b>
<b>GR_HIV(-1)</b>	0.088167 (0.06519) [ 1.35241]	0.007032 (0.02094) [ 0.33592]	-0.006693 (0.02923) [-0.22900]
<b>GR_HIV(-2)</b>	0.055268 (0.06630) [ 0.83361]	0.137433 (0.02129) [ 6.45502]	0.150765 (0.02972) [ 5.07246]
<b>GR_TUE(-1)</b>	-2.519301 (0.95148) [-2.64777]	-0.909152 (0.30555) [-2.97546]	-1.036593 (0.42655) [-2.43018]
<b>GR_TUE(-2)</b>	0.118395 (0.76721) [ 0.15432]	-0.357355 (0.24637) [-1.45045]	-0.192253 (0.34394) [-0.55897]
<b>GR_FUE(-1)</b>	2.760612 (0.76765) [ 3.59618]	0.794354 (0.24652) [ 3.22231]	0.676297 (0.34414) [ 1.96519]
<b>GR_FUE(-2)</b>	-0.237884 (0.68624) [-0.34665]	0.463204 (0.22037) [ 2.10190]	0.333629 (0.30764) [ 1.08447]
<b>C</b>	6.403456 (5.29202) [ 1.21002]	-9.433332 (1.69943) [-5.55088]	-7.168828 (2.37242) [-3.02174]
Adj. R-squared	0.410289	0.768886	0.638589

Standard errors in ( ) & t-statistics in [ ]