The impact of political instability on economic growth: the case of Guyana

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Abstract

This paper empirically probes the nexus between political instability and economic growth in Guyana using time-series data covering the period 1961 – 2018 and GARCH (1,1) models. The results show that changes in the Head of State (HOS) exert a positive and significant impact on real GDP growth rates, while strikes have the opposite effect on economic growth. Other proxies of political instability, such as political assassinations, riots, insurrection, and terrorism, are not significantly related to growth in real GDP because of the dispersed nature of economic activities and their negligible effect on production and productivity. When the proxies of political instability are added to the conditional variance equation, the results indicate that only changes in Head of State (HOS) moderate volatility in growth rates. This is probably due to transitory goodwill enjoyed by the incoming Head of State that serves to dampen ethnic tensions, reducing instability. The latter result indicates the importance of democratic turnover.

Keywords: Economic growth, GARCH (1,1), Guyana, political instability.
JEL classification: D72, O11, O40, P16.

I. Introduction

Guyana, the largest country in terms of land area in the Commonwealth Caribbean, is endowed with vast natural resources compared with its counterparts (Grenade and Pasha, 2012). The country has bountiful agricultural lands, minerals (gold, diamond, rear earth, and bauxite), freshwater, and forest cover with tremendous carbon credit potential. Recently, the country discovered large quantities of hydrocarbon deposits that are being explored by Anadarko Petroleum Corporation,

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CGX energy Inc., Eco Atlantic Oil and Gas, Exxon Mobil, Hess Corporation, JHI Associates Inc., Ratio Oil Exploration Limited Partnership, Repsol, and Tullow Oil Plc. Recent estimates put the total reserves at 5.5 billion barrels, making it one of the countries with the largest oil reserves. Notwithstanding the abundance of natural resources, Guyana is the least developed country in the Commonwealth Caribbean, ranking 125 according to the 2019 Human Development Index (HDI).

Several studies attempted to explain the economic performance of the country since independence. For instance, Thomas (1982) attributes the country's economic collapse during the 70s and 80s to fiscal mismanagement, migration of skilled Guyanese, social, political, institutional fragilities, and statists' political posture. Gafar (1996) credits the robust economic performance during the 1990s to a shift in policy stance and policy dividends that accrued from the government's market-oriented policies under the Economic Recovery Programme (ERP). Staritz, Atoyan, and Gold (2007) link the economic downturn during the 2000-2004 period to deterioration in factor accumulation and investments, while IDB (2008) attributed the country's economic stagnation since 1997 to numerous shocks, including El Nino, flooding, deterioration in export prices and loss in preferential markets for rice and sugar. Additionally, Khemraj (2008) argues that the country's economic development was impeded by the banking system's oligopolistic nature that blunted financial reforms' impact during its post-liberalized regime. More recently, Grenade and Pasha (2012) argue that improved governance, sound macroeconomic management coupled with favorable terms of trade, was responsible for the five consecutive years of strong economic growth during 2006-2010. Finally, Khemraj (2016, 2019, 2020) provides a theoretical framework demonstrating how ethnic mobilization and conflict over economic resources – such as government jobs, state contracts, scholarships, and other privileges – retard economic growth. This author relies on the prisoners' dilemma and stag hunt games to explain why a less and ideal long-term income growth will result from ethnic conflict and polarization in Guyana.

Unlike the theoretical analysis of Khemraj, this work goes further by quantifying the impact of political instability, including the ethno-political conflict, on economic growth. Even though the country's history has been tainted by severe episodes of political instability over the past six decades, no previous study assessed the empirical relationship or impact of political instability on the economy's performance. This study attempts to address this gap in the literature by using

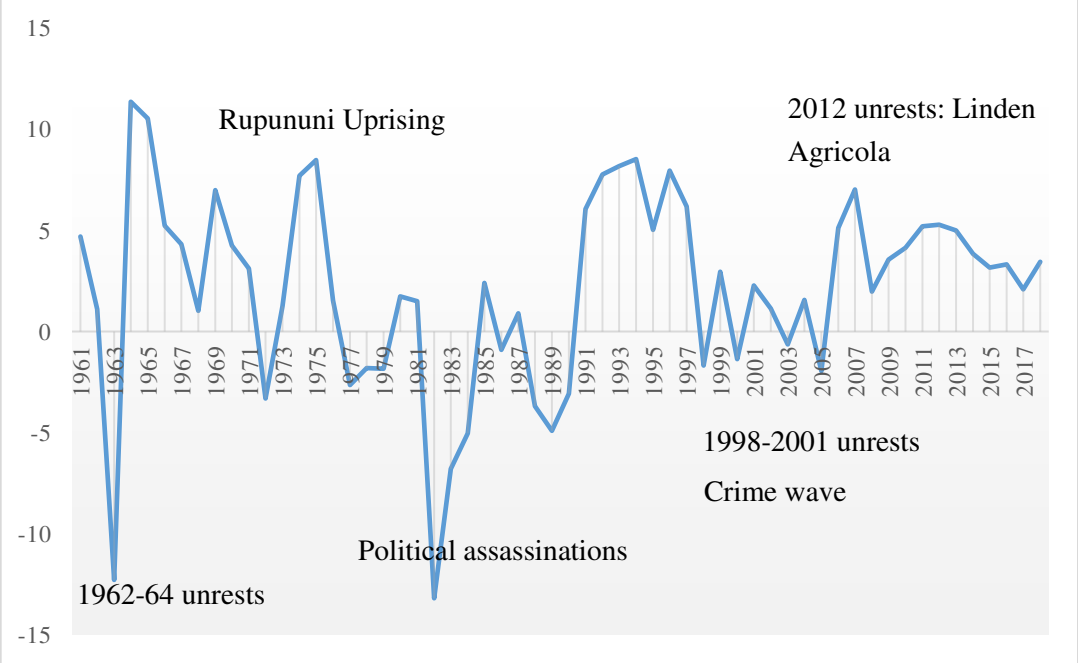
econometric tools similar to Sandler and Enders (2010) and Tabassam, Hashmi, and Reham (2016). It will also add to the strand in the literature that utilizes data from a single country that is short in supply. Additionally, it will provide additional evidence regarding the relationship between economic growth and political instability in a poor resource-rich country.

The remainder of the paper continues as follows. The next section provides a discussion of political instability over the past six decades. Section III reviews the literature, while section IV explains the econometric methodology, and section V presents and discusses the empirical results. Section VI concludes with recommendations.

II. History of political instability in Guyana

The quest for political and economic dominance by the two major voting blocs have contributed to the continuous ethno-political conflicts since the country gained independence. This section chronicles the historical evolution of the conflict to distill the various manifestations of political instability over the past five decades. The figure below highlights some of the most violent episodes of the conflict.

Figure 1: Evolution of economic growth, 1961-2018



Guyana may be described as a plural society that was shaped by the country's colonial history. Prior to independence, the People's Progressive Party (PPP) was formed in 1950 as a multi-cultural party, headed by Dr. Cheddi Jagan and Linden Forbes Burnham (Premdas, 2004). This party won the first parliamentary elections in 1953 that saw Cheddi Jagan elevated to the position of leader of Parliament and Forbes Burnham, becoming the leader of the party (Myers and Calder, 2011). The PPP only lasted 133 days in office as it was overthrown by the British, which also suspended the constitution on the grounds that the PPP was a Communist party (Hinds, 2010). However, because of competition between these leaders, there was a split in the party in 1957 with Cheddi Jagan remaining with the PPP and Forbes Burnham forming his party, the People's National Congress (PNC) (Myers and Calder, 2011). The split divided the country along racial lines, where the East Indians and Africans supported the PPP and PNC, respectively (Hinds, 2010). Following the split, the PPP won the two elections in 1957 and 1961 since it attracted support from the majority East Indian population.

Fearing domination, the PNC collaborated with the United Force (UF) to destabilize the PPP. This campaign started with a mass protest by the People's National Congress (PNC) and Trade Union Congress (TUC) against the Budget of the People's Progressive Party (PPP) (Stabroek New, 2009). Massive riots, described as Black Friday, followed the protest on February 16, 1962, and resulted in the destruction of 56 premises and damage to 87 premises and looting of 66 premises in Georgetown (Ishmael, 2004). The campaign continued in 1963 and 1964 as part of an orchestrated strategy supported by the United States (US) to destabilize the PPP government. In 1963, a major strike (80-days strike) that was initiated by the TUC in response to the introduction of the Labour Relations Bill by the Government. This strike, which was supported by the PNC, TUF, Georgetown Chamber of Commerce, police force, International Confederation of Free Trade Unions (ICFTU), ended with nine deaths (Stabroek New, 2009). The following year, 1964, there were two significant events, the riots in Wismar and Sun Chapman explosion. The former resulted in the destruction of more than 200 properties, the death of five persons, assault of fifty persons, and at least seven rapes while the latter claimed the lives of forty-three persons who were on their way from Linden to Georgetown. Other notable events were the attempt to kill the PPP leadership that caused the death of Micheal Forde at Freedom House on July 1964 and the bombing of twelve buildings in Georgetown that was part of the so-called X-13 plan. All of these events were

attributed to the toxic political climate in 1964. According to police records, the disturbances during this period resulted in the death of 176 persons, the destruction of 1,425 buildings, and the displacement of 15,000 persons.[2] A state of emergency was eventually declared, and the United Kingdom undertook electoral reforms. Elections were called subsequently under the system of Proportional Representation (PR). The PNC and United Force (UF) joined forces to remove the Government led by Jagan under the new electoral system.

The coalition government fell apart. A second election was held under PR in 1968 but with the provision for postal voting. The PNC obtained 55.8 percent of the votes in these elections that were considered rigged. On January 2, 1969, the inhabitants (white settlers and indigenous people) of the Rupununi district staged an insurrection because they felt government policies were eroding their constitutional rights. This rebellion was swiftly and violently quelled. Approximately 100 persons lost their lives, and many indigenous citizens of Rupununi fled to nearby Brazil and Venezuela.

On February 23, 1970, the PNC government officially declared Guyana as a Cooperative Socialist Republic to consolidate its political power by taking control over the country's productive resources to reduce foreign and local capitalists' influence.[3] Elections were held in 1973 but were not uneventful. Two young voters were fatally shot during these elections by the member of the Guyana Defence Force (GDF). Following these elections, the PNC enunciated the doctrine of 'paramountcy of the party' in 1974 at a Special Congress of the PNC. Under this doctrine, the PNC used the state to suppress the people. A massive strike was staged by sugar workers on August 1977 that lasted 135 days and literally crippled the economy. The ruling party claimed that this strike was motivated by politics rather than economics since the trade union representing sugar workers were aligned to the opposition PPP. During the 1970s the ruling party utilized the House of Israel to intimidate is political opponents and citizens. On July 14, 1979, Father Benard Darke was murdered by members of the House of Israel while photographing a demonstration by the

[2] THE ESCALATION OF THE RACIAL DISTURBANCES. (n.d.). Retrieved September 25, 2019, from http://www.guyana.org/features/guyanastory/chapter170.html.
[3] Rose, E. A. (2002). *Dependency and Socialism in the Modern Caribbean: Superpower Intervention in Guyana, Jamaica, and Grenada, 1970-1985*. Lexington Books.

Working People's Alliance (WPA) on Brickdam. The following year, the WPA leader, Dr. Walter Rodney, was assassinated in Georgetown with an explosive device.

To further consolidate its position, PNC promulgated a new constitution on October 6, 1980, after extending the National Assembly's life twice in 1978 and 1979. Elections were held in December 1980 with the PNC securing a more significant majority. The leader of the PNC. Forbes Burnham died on August 6, 1985, and was succeeded by his Vice President, Desmond Hoyte, who held elections in December 1985. Like the elections before, there was violence and claims of electoral fraud. Some claimed that the cold war was responsible for the United States' indifference and other powerful countries concerning electoral fraud, human rights violations, and undemocratic rule by PNC. The Marxist/Leninist orientation of the PPP made this party a threat to the United States regarding South America as its back yard. As such, it was not in the United States' interest to get involved in Guyana's political struggle, which would see the PPP returned to power.

However, with the end of the Cold War, the country was granted a new lease on life by the Carter Centre's intervention, which paved the way for free and fair elections in 1992. It is important to note that these elections were held two years beyond the original schedule to allow for the sanitization of the voter lists. Even though elections in 1992 were dubbed free and fair by international observers, the PNC promoted its supporters to storm the election commission before the announcement of the results shortly after the riot spread to the commercial center of Georgetown, where many stores were looted.

Once the dust from the disturbance settled, however, the economy took off with the infusion of domestic and foreign investment and programmes designed to address the many constraints to private sector growth. The economy posted robust economic growth for seven consecutive years, averaging 7.1 percent per annum.

The country held fresh elections on December 15, 1997. Cries of "systematic campaign of victimization and discrimination" against Afro-Guyanese by the opposition PNC leader, Mr. Desmond Hoyte, before these elections, created the conditions for the violent protest on January

12, 1998 (US State Department, 2009).[4] Unlike the 1992 elections, the violence was not short-lived but occurred sporadically for several months between during the period 1998-2001 in the form of street protests that turned violent (ibid, 2009). During this period, the commercial center was the prime victim of the instability created by the protest. The opposition PNC and PPP/C brokered a peace accord to end the violence on January 17, 1998. However, in April 1999, the Guyana Public Service Union (GPSU) initiated a general strike that lasted for 56 days that paralyzed the country.[5] In August of the same year, Janet Jagan announced her retirement due to ill health, and Bharrat Jagdeo assumed the position of President. The elections of 1997 were also rendered 'null and void' by the court, and fresh elections were forced in 2001, cutting the term of the government. These elections were preceded by mass demonstrations over the distribution of voter identification cards that continued even after the elections were completed and declared free and fair by independent observers.

The Opposition leader, Desmond Hoyte, and new President Bharrat Jagdeo announced 'confidence-building measures' to end the violence that flowed from the 2001 elections. But by March 2002, the opposition parties staged a walkout of the 2002 Budget Debate, and a period of social unrest ensued. The disturbances culminated in the Office of the President's attack on July 3, 2002, by opposition protestors.[6] The instability intensified when five high-profile prisoners escaped from the Camp Street prison on February 23, 2003. These prisoners were linked to a series of murders, including the Lusignan, Bartica, and Agricola, Lindo Creek massacres, where more than 55 persons were killed. However, the escapees were hailed freedom fighters and received support from members of the opposition party. One of the members of the gang was even given a hero's funereal.

After the prolonged period of instability, the two main political parties agreed to constitutional reform that saw the establishment of various Commissions and Parliamentary Committees designed to ensure greater equity in distributing the country's national patrimony. Under a new constitution, the country had relatively peaceful elections in 2006, 2011, and 2015.

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[4] U.S. Department of State (1999). Guyana Country Report on Human Rights Practices for 1998. Retrieved September 25, 2019, from https://1997-2001.state.gov/global/human_rights/1998_hrp_report/guyana.html.
[5] Taylor & Francis Group. (2004). Europa World Year (Vol. 1). Taylor & Francis, page 1980.
[6] Taylor & Francis Group. (2004). Europa World Year (Vol. 1). Taylor & Francis, page 1980.

Notwithstanding the peaceful nature of the elections in 2011, there were two significant unrests after these elections. On July 18, 2012, a protest erupted in Linden against the removal of subsidy for electricity for the mining town. During the demonstration, the mining town residents blocked the Wismar-Mackenzie Bridge, which is one of the main arteries to the interior region. The situation deteriorated when the police attempted to remove the protestors from the bridge. Several buildings and vehicles were destroyed, and four persons were killed. Another round of unrest erupted on October 11, 2012, at Agricola, where the East Bank highway was blocked and many persons robbed. Following these protests, the combined opposition threatened to carry a no-confidence motion against the government. This forced the government to call early elections since the combined opposition parties had a majority.

After another extended period of instability, the elections of 2015 saw the installation of a new government formed by the APNU-AFC government. As in the 1960s, the PPP was displaced by a coalition. However, the new government's life was cut short by a no-confidence vote successfully passed in parliament when one of its members voted with the opposition. Since then, the country has been at a standstill as the government attempted to extend its life by challenging the no-confidence vote's validity. Based on the country's final court ruling, the Caribbean Court of Justice (CCJ), the government is constitutionally bound to hold elections by September 2019. However, the government refused to comply with the constitutional deadline and held elections on March 2, 2020. After the conclusion of the elections, the government also held onto power, forcing the contesting parties to take court actions to declare the results. During this period there were sporadic protests in several villages but not for any extended duration. A vehicle with school children was attacked, and one person lost his life. Coupled with international pressure, GECOM finally declared the winner and a new government was sworn-in on August 2, 2020. Almost one month after the swearing-in of a new government, fresh protests were initiated in Berbice and other villages over the brutal killing of two teenagers. Two persons lost their lives and several properties destroyed.

Box 1: Significant events associated with political instability

Major Events	Consequences
February 16, 1962 *Black Friday*	Riots in Georgetown where 56 premises were destroyed, 87 buildings and 66 building were damaged and looted respectively.
April 18-July 8, 1962 *80-days strike*	The strike ended with nine deaths and many injuries.
May 20-25, 1964 *Wismar Riots*	*1964 Wismar Riots*. More than 200 properties were destroyed, five persons killed, fifty persons assaulted and at least seven rapes reported.
July 6, 1964 *Sun Chapman bombing*	*Sun Chapman explosion* where forty-three persons lost their lives while travelling from Linden to Georgetown.
January 2, 1969 *Rupununi Uprising*	The insurrection by Residents in the Rupununi district that is popularly known as the Rupununi Uprising. Almost 100 persons lost their lives and many indigenous resident in Rupununi fled to Brazil and Venezuela.
July 16, 1973 Ballot Box Martyrs	Bholanauth Permanand and Jagan Ramessar were fatally shot by members of the Guyana Defence Force (GDF) at No. 63 Village Corentyne protecting ballot boxes
August 1977- January, 1978 *135 days sugar strike*	Many strikers and PPP activist were arrested during the strike for intimidation.
July 14, 1979	Father Benard Dark murdered by members of the House of Israel during a protest by the Working People's Alliance
June 13, 1980	Leader of the WPA assassinated in Georgetown with explosive device
Jan 12, 1998	Riots in Georgetown where approximately 800 persons were assaulted and 10,000 experienced restriction in movements.
April 1999	General strike initiated by the GPSU that paralyzed the country.
February 23, 2002	Jail break
February 27, 2006	Agricola Massacre
April 22, 2006	Agriculture Minister Satyadeow Sawh was killed with two siblings and a security guard.
August 8, 2006	Five pressmen were executed at Kaieteur News printing press located in Eccles.
January 26, 2008 Lusignan massacre	Lusignan stormed by members of the fine man gang who killed 11 residents
February 17, 2008 Bartica massacre	Twelve persons were killed and five injured in the attack of Bartica by the gang
June 2008 Lindo Creek massacre	Eight gold miners were killed by the "Fine man" gang at Lindo Creek.

July 2012 *Linden Unrest*	Protestors blocked the Wismar-Mackenzie Bridge blocked preventing vehicles from entering the interior. Several buildings and vehicles destroyed and four persons killed during the attempt to remove the protestors from the bridge.
October 2012 *Agricola unrest*	The protest resulted in the blockade of the East-Bank highway. Several persons were robbed.

III. Literature Survey

Many scholars have attempted to define political instability in the extant literature. However, because political instability is a broad and complex concept and is not directly observable, finding a standard definition has been a challenge to scholars. Political instability has been defined, inter alia, as a breakdown of institutionalized patterns of authority in a political system (Morrison and Stevenson, 1971), the propensity to change executive power either through constitutional or unconstitutional means (Alesina et al., 1996), events that generate uncertainties regarding the present political system or government (Gyinmah-Brempong and Traynor, 1999), changes or challenges to a political system (Jong-A-Pin, 2008), and the propensity of a country to not only experience regime and government change but violence (political, religious and ethnic) and practices that impacts on contracts, law and order, and stability and efficiency of institutions (Burger, Ianchovichina, and Rijkers, 2013).

The importance of political stability, as it relates to economic performance, may be traced back to the work of Adam Smith, Simon Kuznets, and other theorists who underscored the impact of institutional and political factors on economic growth (Haan and Siermann, 1996; and Gurgul and Lukasz, 2012). Since then, the nexus between political instability and economic growth has been widely discussed at the theoretical level. Over the last decade, this topic also received the most attention from empirical research by Sandler and Enders (2010) as well as (Baklouti and Boujelbene, 2020).

The theoretical literature has extensively articulated how political instability affects economic growth through various channels. Drawing on the theoretical literature, Cervantes and Villasenor (2015) contend that political stability influences economic growth through investment, savings, labor market disruption, and productivity/production levels of private agents and monetary and fiscal policies of the government. Munoz (2009) argues that political instability affects growth

through the investment channel (reduction in physical and human capital accumulation and changes in its composition that favours short-run investments), socio-political unrest channel (reduces productivity caused by a disruption in normal economic activities), and sub-optimal economic policy channel (politically driven sub-optimal policies that are caused by the fear of not re-elected to office. Meanwhile, Baklouti and Boujelbene (2020) explain that political instability leads to a break in production activity and increasing transaction costs that could prevent a country from realizing its true potential, which is essential for achieving economic growth. This study also argues that political instability discourages investments (both foreign and local) that adversely affect economic growth and cause a government to disregard their commitment or engage in clientelistic allegiances and corruption, which harms growth (ibid, 2000).

Because political stability cannot be observed directly and works through various channels, and is abstract, various proxies have been employed in the literature to empirically determine its relationship with economic growth. Some of the proxies include the number of violent events, e.g., military coups, assassinations, violent revolutions, purges (Barro, 1991; Shehzadi et al., 2019; and Campos and Karanasos, 2008); propensity to change the government via constitutional and unconstitutional means (Alesina et al., 1992), the number of years the chief executive has been in office, corruption in political elections (e.g., vote fraud or candidate intimidation), the duration of autocratic or democratic regimes, illegal or forced change in the top government elite (armed rebellion), the size of the cabinet measured by the number of ministers, the level of freedom available for people in practicing political rights, and the number of years since the most recent regime change (Abdelkader, 2017); cabinet changes (Aisen and Veiga, 2011); the number of terrorist incidents, number of strikes, elections, external wars (Asteriou and Price, 2001), number of political strikes, demonstrations, riots, impeachment and change in head of key public economic institutions (Munoz, 2009); occurrence of various coups e.g. successful coups, absorptive, and plot coups (Fosu, 2011); number of constitutional changes (Campos and Karanasos, 2008); change in prime minister (Gurgul and Lukasz, 2012); number of government changes (de Haan and Siermann, 1996); and polarization and fractionalization (Ejaz and Khan, 2019). While some studies have used individual variables, others have employed indices to capture the various dimensions of political instability (Ejaz and Khan, (2019).

The empirical studies that shed light on the relationship between economic growth and political stability have found varying and inconclusive results. Some studies have found that the relationship is unidirectional, while others have found bi-directional causality (Sweidan, 2016). In some cases, the relationship is negative or positive and statistically significant. Some studies have not found any significant relationship.

The extant literature has tested the link between political instability and economic growth at the country level and across countries in developed, developing, and transition economies. Most of the empirical studies have utilized cross-sectional or region-specific information (Sweidan, 2016). Using data for 98 countries during the period 1960-1985, Barro (1991) found that political instability (manifested in the number of assassinations, violent revolutions, and military coup) is negatively correlated with economic growth. Alesina et al. (1992) found an inverse relationship between per capita GDP growth and political instability (measured by constitutional and unconstitutional changes in government) using a panel dataset of 113 countries during 1950-1982. In their attempt to determine whether political instability affected the economic growth of smaller geographic areas and whether the results were sensitive to the definition of political instability, de Haan and Siermann (1996) found that political stability economic growth in Africa but no countries in Latin America and Asia. A sample consisting of 97 countries from 1963 to 1988 was utilized. Fosu (2001) explored the impact of coups on economic growth in 31 sub-Saharan Africa using cross-section data from 1960 to 1986, found a significant relationship between growth and instability measured by an index that captures successful coups, absorptive coups, and coup plots. The author contended that models that utilized this variable provide the best results representing the relationship between growth and instability as it passes various diagnostic tests. Using a panel dataset of 165 countries covering the from 1960 to 2004, Aisen and Veiga (2011) found that political instability contributed to lower growth by lowering the rates of productivity and physical and human capital accumulation. Gurgul and Lukasz (2012) investigate the nexus between political stability and growth using panel data for 10 CCE countries (Bulgaria, Czech Republic, Estonia, Hungry, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia) over the period 1990-2009. The authors' defined political instability as the propensity for government change (or political instability). Two variables were used, the first is the change in prime minister (major change), and the other is a change in government. The study found political instability harmed

economic growth. Shehzadi et al. (2019) utilized ten variables and classified them to capture political instability's formal and informal dimensions. Following Campos and Karanasos (2008), the article classified assassinations, strikes, purges, riots, revolutions, cabinet changes, executive changes as informal political stability and legislative elections, and constitutional change as formal political stability. A heteroskedastic consistent OLS estimation technique and data for 103 countries from 1984-2011 were used to investigate the relationship between economic growth and these variables. The article found that coups, formal political instability, cabinet changes, and legislative elections adversely impact economic growth.

Meanwhile, Elbargathi and Al-Assaf (2019) examined the impact of political stability on economic growth using panel data for five Arab countries and the Vector Error Correction Model. The study found a strong relationship between political instability and growth, which the author argues is consistent with the literature's general findings. More recently, Maryam et al. (2020), employing the Pooled Ordinary Least Square estimation technique and data for 2002-2018, showed that political stability impacts selected countries in the SAARC region. The authors contend that these countries can attract greater investment and encourage growth by ensuring political stability.

Departing from the cross-country as mentioned earlier studies, Asteriou and Price (2001) used a single variable to capture political instability. They constructed several time series variables to determine how each impacted growth in the United Kingdom during 1961-1997. The author argued that this approach would allow for a more detailed examination of the nexus between political stability and growth, considering the institutional and historical characteristics of a country and the effect of the political instability on the conditional variance of GDP. In this study, the authors constructed six proxies of instability: the number of terrorist incidents, the number of strikes, elections, change in government, external wars (Falkland and Gulf)

The empirical results show that economic growth is directly affected by political instability. Using an Error Correction Model and time-series data from 1972 to 2013, Abdelkader (2017) found a negative relationship between political stability and Egypt's economic growth. Proxies of political instability, in the paper, included: the number of years the chief executive has been in office, corruption in political elections (e.g., vote fraud or candidate intimidation), the duration of

autocratic or democratic regimes, illegal or forced change in the top government elite (armed rebellion), the size of the cabinet measured by the number of ministers, the level of freedom available for people in practicing political rights, and the number of years since the most recent regime change. The empirical results suggest that the political instability variables impacted growth, but the impacts' magnitude differs. In their article, Campos and Karanasos (2008) examined the relationship between political instability and growth using power-ARCH and annual data covering 1986-2000 for Argentina. The authors employed variables that capture 'formal instability' (number of elections and the number of constitutional changes) and 'informal instability' (assassinations and general strikes). The formal measures of instability impacted growth directly, while the informal measures mostly indirectly impacted growth. Using ARCH and GARCH models, Tabassam et al. (2016) and time-series data covering the period 1988-2010 investigates the link between political stability and economic growth. The article used dummy variables for terrorism, election, regime, and strikes that were treated as proxies for political instability. It found that only terrorism had a significant negative relationship with economic growth. The authors interpreted their findings to mean that terrorism disrupted market activities and discouraged investments, lowering productivity. However, volatility in GDP was explained by election and regime change. In a case study of Jordan, Sweidan (2016) found that per capita GDP is adversely affected by local instability, border instability, regional instability, and the index constructed from the exploratory factor analysis. The author argued that government expenditure is an important transmission channel. Murad and Alshyab (2019) employed an empirical model that estimates growth economic growth rate based on political instability, growth rates of capital and labour, and trade openness. It found that output growth was negatively affected by freedom rate, crime and cabinet changes, and a positive relationship between output growth and border instability.

Literature on political instability in Guyana

As noted earlier, this study is motivated by the absence of any empirical research that links economic growth to political stability even though Guyana's post-independence history is littered with several episodes of political instability that incarnated in violent protests, riots, political assassinations, politically-motivated crime spree, and even insurrection. Indeed, Hinds (2010) argues that Guyana has been in a permanent state of instability since the 1997 elections due to the

tendency of *'losing parties to accept election results or cooperate with the government after elections*' (ibid, 2010, 333). According to Hinds, the political instability manifests in extra-parliamentary actions such as boycotting parliament and street demonstrations, which often culminate in attacks of PPP's supporters. Hinds also notes that these events occurred even as the PPP government struggled to gain the corporation of *'African-dominated institutions, such as the police, army, and civil service*' (ibid, 2010, 335.).

In an earlier study, Hinds (2005) contends that after replacing the authoritarian PNC regime in 1992, political stability intensified to the point where the state became 'dysfunctional' and ungovernable. Hinds argued that the best example of the dysfunctional state was the virtual siege by 'political criminals' who targeted citizens, mainly, Indo Guyanese. According to Hinds, political criminals *'usurped the police's role and engaged in social and political terror and the dispensation of their own form of justice*' (ibid, 2005, 69).

The forgoing were not the only studies to highlight the instability during the 90s. Like Hinds (2005), Kissoon argues that the main opposition party, PNC, tacitly supported the criminals who terrorized the citizens during the crime spree. According to Kissoon, the criminals' actions were a response to the marginalization of African Guyanese who supports the PNC. In his study, Kissoon (2007) shows that the PNC has always used violence as a political tool.

Myers and Calder (2011) argue that election disputes triggered public unrest that followed the 1992, 1997, and 2001 elections. Like Kissoon (2007) and Hinds (2010 and 2005), Myers and Calder agree that the crime wave during the 2002-2003 period had both ethnic and political dimensions as the victims were mainly East Indians and the criminals received support from the '*opposition political parties, media personalities and former military personnel*' (p. 22). According to the authors the political masterminds wanted to use the criminals to destabilize and remove the government. In their study, Myers and Calder also chronicle the history of the ethnopolitical violence from the 19660s to 2000s. According to the authors, between 1961 and 1964, the social and political instability manifested in various forms (strikes, protest actions, blockades and political subterfuge) which deteriorated into '*near-genocidal warfare between East Indians and African politicized communities*" *where many 'hundreds were killed, thousands*

displaced, and millions of dollars in homes and property destroyed' (p. 2). The political instability manifested in the 135-day long sugar strike in 1977 and assassination of Dr. Walter Rodney in 1980 while it incarnated in election related street protests, court actions, ethnic violence and crime spree in the 1990s and 2000s according to Myers and Calder.

The many incarnations of political instability have been attributed to the struggle for political and economic power between the Indo Guyanese and African Guyanese. The PPP and PNC, respectively represent them. Premdas (2004), which echoes Despres (1975, 1969), explains that the competition for jobs and resources drives Guyana's ethnic conflict. Similarly, Norton (2007) argues that political conflict in Guyana is an expression of the two large ethnic voting bloc's desire to control the resources by capturing the government.

Much of the literature on ethno-political contestation in Guyana is descriptive. However, Dev (1991) and Ramharack (1992) went one step further in proposing a theoretical framework for analyzing ethnic conflict in Guyana. They applied the inter-country security dilemma from International Relations to intra-country ethnic conflict. They proposed the thesis of the ethnic security dilemmas (ESDs) – an Indo-Guyanese dilemma and an Afro-Guyanese dilemma. According to Dev and Ramharack, the Afro-Guyanese dilemma stems from the fear of being unable to win a free and fair election owing to the Indian numerical advantage. The Indo-Guyanese dilemma is rooted in physical insecurity since the other dominant group predominates in the civil service, army, police, and the capital city.

Khemraj (2016) was the first to make an explicit connection between the ESDs and long-term economic growth in the subgame Nash equilibrium theoretical framework under the pre-1992 PNC dictatorship and the prisoners' dilemma under the return of free and fair election in 1992. Both situations led to less than desirable growth outcomes, according to the prediction of the models. In his 2019 paper, Khemraj further clarifies how the ESDs can be expressed in a prisoners' dilemma and how voters' impatient discount rate leads to short-termism and non-cooperation – hence perpetuating what he labels a colonial underdevelopment trap of sub-optimal economic growth. Finally, in Khemraj (2020), the author further develops the two ESD thesis – this time introducing leadership conflict using a one-period prisoners' dilemma game and pro-ethnic voting in a stag

hunt. The leaders are motivated by a preference of "joy of destruction" or malevolent utilities. In both cases, uncertainty regarding how the other side will behave leads to non-cooperation, the desire to sabotage the winner, and lower long-term economic growth.

IV. Methodology

This study follows closely Tabassam et al. (2016), which utilized a GARCH (1,1) models where the growth in Gross Domestic Product (GDP) is taken as the dependent variable. The econometric approach is considered appropriate since previous studies have found convincing evidence of volatility clustering in economic growth rates using GARCH models (see Fang and Miller, 2008). Like Tabassam et al (2016), several dummy variables are employed to capture political stability, which originates from the conflict between the two major political parties and their supporters. These are mass violence (riots), insurrection, political assassinations, anti-government demonstrations and major strikes, and domestic terrorism (politically motivated crime spree). Proxies for the change in the head of state and insurrection are also used to measure the impact these events in line with extant literature. The proxies are assigned '1' when the particular event occurs and '0' otherwise.

The estimation process commences with an examination of the GDP series to determine if it follows a random walk by performing the Augmented Dickey-Fuller (ADF, 1979), Phillip-Perron (PP, 1998), and Kwiatkowski et al. (KPSS, 1992). These tests are performed with intercept, as well as, intercept and trend. Since previous studies have found structural breaks in long time series data for GDP, the Zivot and Andrews (1992) unit root test with structural break is also utilized (see Fand and Miller, 2008).

Following Tabassam et al. (2016), the AR(1) model is estimated and residual examined to determine the presence of autoregression in the GDP time series and autoregressive conditional heteroscedasticity (ARCH) effect. Similar to Tabassam et al. (2016), the AR(1) model is also estimated to ascertain the appropriateness of using the GARCH (1,1) model. The GARCH(1,1) model is estimated with the independent variables in the mean and variance equations. The exact specification of the GARCH(11) model is as follow:

Mean equation

$$\Delta GDP_t = c + \varphi_0 \Delta GDP_{t-1} - \varphi_1 CHOS - \varphi_2 RIOTS - \varphi_3 INSUR - \varphi_4 TER - \varphi_5 AS - \varphi_6 AGD + \varepsilon_t;\ \varepsilon_t | I_{t-1} \sim N(0, h_t^2)$$

Variance equation

$$h_t^2 = \alpha_0 + \alpha_1 \mu_{t-1}^2 + \beta h_{t-1}^2 + \rho_1 CHOS + \rho_2 RIOTS + \rho_3 INSUR + \rho_4 TER + \rho_5 PA + \rho_6 AGD$$

Where ΔGDP represent economic growth rates, ΔGDPt-1 is a proxy of economic growth with one lag; CHOS is a proxy for change in the head of state, RIOTS is a proxy of racial conflict, INSUR is a proxy of the attempt to annex a section of the country (Rupununi), TER is a proxy of domestic terrorism, and PA is a proxy of the assassination of political leaders and AGD is a proxy for anti-government demonstrations and politically motived strikes. The data for GDP growth rates cover the period 1961-2018. An inverse relationship is expected between economic growth and the various proxies of instability since the economy should be adversely affected by riots, insurrection, terrorism, the assassination of political leaders, and anti-government demonstrations. Thus, the estimated coefficients are expected to be negative and statistically significant.

The GARCH (1,1) model is estimated using the Bolleslev-Wooldridge's quasi-maximum estimator and Berndt-Hall-Hall-Hausman algorithm. The ARCH-LM test and Ljung-Box Q-statistics are also employed to test the robustness of the estimated model.

V. Discussion of results

The unit tests reveal that the GDP series is stationary at the 1 percent level of significance. Table 1 below shows the results from the Augmented Dickey-Fuller (ADF, 1979), Phillip-Perron (PP, 1998), and Kwiatkowski-Phillips-Schmidt-Shin (KPSS, 1992) unit root tests. The Zivot and Andrews (1992) unit root test with structural break provides similar results and suggests a structural break in 1991 (see Appendix A1). The correlation matrix shows that the relationship among the independent variables is weak, and there is no multicollinearity consequently (see Appendix A2).

The AR(1) model estimated using the Ordinary Least Square (OLS) and data for the period 1962-2018 confirms that GDP is influenced by prior values in the models with and without the structural break at the 1% level of significance (see Appendix A3). Therefore, it follows that there is serial correlation or autoregression in the data series, which makes the GARCH (1,1) models suitable for the empirical exercise. The ARCH LM test also confirms the presence of heteroscedasticity in the data series. The Obs*R-squared is 3.602214, with an associated probability of 0.0577 (see Appendix A4).

The ARCH(1) model is estimated with and without the structural break. The results are shown in Appendix A5. The coefficient for the lagged value of GDP in the mean equation is positive and significant in both models, suggesting that prior growth in GDP impacts on current growth rate. However, the RESID(-1)^2 is not statistically significant.

The GARCH (1,1) model is estimated with and without structural breaks. The results are provided in Appendix A6, which confirms that the lagged GDP is statistically significant at the 1% level of significance. This means that the previous value of GDP impacts on the current value. The GARCH(-1) coefficient is also statistically significant at the 1% level of significance. It, therefore, means that the volatility in GDP is caused by volatility in the past. These shocks are also persistent, as reflected by the sum of the RESID(-1)^2 and GARCH(-1), which amounts to 0.73 (see Appendix A6). It is instructive to note that the coefficients of the conditional variance specification meet the stability conditions.

The independent variables are added to the mean equation of the GARCH (1,1) model. The results suggest that Head of State (CHOS) changes have significant positive effects on GDP at the 5% and 10% levels of significance in model 5 and model 7, respectively (see Table 1). Therefore, it means that a change in the head of state enhances growth in the economy, probably due to the transitory goodwill enjoyed by the incoming Head of State that dampens the ethnic tensions and consequently lessen political instability. In two instances, death motivated the change in the head of state (Burnham in 1985 and Cheddi, 1997), and another instance, the president resigned, paving the way for the swearing-in of another whom the population displayed less hostility. Anti-government demonstrations and strikes (AGD), on the other hand, causes growth in GDP to

decline, as reflected in models 3 and 7 at the 5% level of significance (see Table 1). This is understandable since these events in the 1960s, 1970s, and 1990s directly affected the production and productivity of critical sectors. The strikes in the 1960s and 1990s caused major disruption in the capital city while the strike in the 1970s resulted in major losses for sugar, which was the most dominant sector in the economy.

Table 1 report the following GARCH(1,1) model with independent variables in mean equation:

Mean equation: $\Delta GDP_t = c + \varphi_0 \Delta GDP_{t-1} + \text{Break\_91} - \varphi_1 CHOS - \varphi_2 RIOTS - \varphi_3 INSUR - \varphi_4 TER - \varphi_5 AS - \varphi_6 AGD + \varepsilon_t;\ \varepsilon_t | I_{t-1} \sim N(0, h_t^2)$

Variance equation: $h_t^2 = \alpha_0 + \alpha_1 \mu_{t-1}^2 + \beta h_{t-1}^2$

	M1	M2	M3	M4	M5	M6	M7
Mean Equation							
C	0.653	0.649	1.046	0.799	0.544	0.665	0.278
	[9.331]*	[1.188]	[1.933]**	[29.526]*	[0.890]	[1.222]	[0.508]
GDP(-1)	0.563	0.562	0.593	0.574	0.555	0.563	0.535
	[5.715]*	[5.468]*	[6.324]*	[5.567]*	[6.136]*	[0.849]*	[23.478]*
Break_91	7.152	7.134	7.545	7.034	7.220	7.154	7.423
	[0.011]	[0.000]	[0.454]	[0.006]	[0.000]	[0.019]	[0.001]
RIOTS	0.950						0.480
	[0.679]						[0.242]
PA		1.742					2.919
		[0.794]					[1.175]
AGD			-4.968				-5.035
			[-1.925]**				[-2.342]**
TERR				1.917			0.984
				[1.131]			[0.463]
CHOS					2.937		3.450
					[1.602]***		[1.962]**
INS						5.815	6.201
						[0.033]	[0.023]
Variance Equation							
C	3.743	3.875	4.425	4.694	4.381	3.713	4.863
	[4.069]*	[4.328]*	[4.575]*	[3.796]*	[5.870]*	[4.998]*	[1.478]
RESID(-1)^2	-0.063	-0.063	-0.059	-0.067	-0.065	-0.060	-0.057
	[-1.885]***	[-6.756]*	[-8.589]*	[-2.391]**	[-3.591]*	[-2.274]**	[-0.770]
GARCH(-1)	0.748	0.736	0.692	0.708	0.702	0.735	0.598
	[9.009]*	[12.687]*	[13.273]*	[7.098]*	[12.247]*	[11.824]*	[1.752]***
R-squared	0.14	0.186	0.242	0.170	0.225	0.163	0.424
Adjusted R-squared	0.09	0.14	0.199	0.123	0.181	0.115	0.328
Q-Stat (24 lags)	35.956 (0.055)	30.901 (0.157)	23.656 (0.481)	32.875 (0.107)	31.544 (0.139)	29.609 (0.198)	21.787 (0.592)
ARCH LM	0.041 (0.839)	0.049 (0.825)	0.0611 (0.805)	0.394 (0.530)	0.388 (0.533)	0.186 (0.666)	0.090 (0.765)

Note: Numbers in parenthesis are the z-Statistics.

*, ** and *** means that the coefficients are statistically significant at the 1%, 5% and 10% respectively.

The other forms of political instability, such as riots, insurrection, terrorism (crime spree), and political assassination, did not significantly impact growth rates. The dispersed nature of the economic activity, coupled with the fact that these events did not directly affect production or productivity, may be responsible for this outcome. In all the models estimated, the previous year's growth rates are significantly related to the current growth rate at the 1% level of significance (see Table 1). It is instructive to note that all the models passed the diagnostic tests (see Table 1). Additionally, they also satisfy the stability conditions.

The independent variables were added to the variance equation of the GARCH (1,1) model. The results show that only change in the Head of State is statistically significant but negative (table 2). This suggests that GDP volatility is reduced with a change in the Head of State due probably to the new Head of State's goodwill that may have dampened hostility between the two largest ethnic camps. This, in turn, may have contributed to lower instability in those periods and therefore enhanced economic growth.

Table 2 reports the following GARCH(1,1) model with independent variables in variance equation:

Mean equation: $\Delta GDP_t = c + \varphi_0 \Delta GDP_{t-1} + \text{Break\_91} + \varepsilon_t;\ \varepsilon_t | I_{t-1} \sim N(0, h_t^2)$

Variance equation: $h_t^2 = \alpha_0 + \alpha_1 \mu_{t-1}^2 + \beta h_{t-1}^2 + \rho_1 CHOS + \rho_2 RIOTS + \rho_3 INSUR + \rho_4 TER + \rho_5 PA + \rho_6 AGD$

	M1	M2	M3	M4	M5	M6	M7
Mean Equation							
C	0.796	0.864	1.068	0.807	1.527	0.780	1.660
	[3.471]*	[1.841]***	[2.319]**	[1.684]***	[255.293]*	[3.073]*	[1.719]***
GDP(-1)	0.577	0.579	0.595	0.574	0.427	0.575	0.393
	[5.144]*	[7.816]*	[6.714]*	[5.633]*	[4.375]*	[6.151]*	[2.266]**
Break_91	6.912	7.158	6.899	7.016	5.862	7.832	5.561
	[0.0745]	[0.138]	[0.061]	[0.000]	[0.005]	[0.539]	[0.011]
Variance Equation							
C	5.201	3.382	4.211	3.52	3.281	3.826	8.850
	[1.224]	[3.661]	[2.189]**	[0.912]*	[1.427]	[4.299]*	[1.322]
RESID(-1)^2	-0.062	-0.077	-0.067	-0.073	0.105	-0.062	0.060
	[-1.815]***	[-2.453]*	[-2.982]*	[-5.614]*	[0.769]	[-2.514]*	[0.352]
GARCH(-1)	0.59	0.752	0.623	0.814	0.748	0.739	0.570
	[1.586]	[8.738]*	[3.806]*	[14.197]*	[4.880]*	[10.380]*	[2.300]**
RIOTS	10.387						1.835
	[0.509]						[0.281]
PA		6.838					12.869
		[1.253]					[0.415]
AGD			30.265				14.369
			[0.811]				[0.432]
TERR				-2.993			-5.662
				[-0.717]			[-0.471]
CHOS					-10.712		-19.039
					[-1.911]***		[-1.889]***
INS						2.528	3.705
						[0.154]	[0.074]
R-squared	0.134	0.133	0.122	0.135	0.157	0.134	0.156
Adjusted R-squared	0.102	0.101	0.09	0.103	0.126	0.102	0.124
Q-Stat	38.183	36.002	29.975	35.210	22.745	32.035	25.372
(24 lags)	(0.034)	(0.055)	(0.186)	(0.065)	(0.535)	(0.031)	(0.386)
	0.143	0.196	0.075	0.030	0.001	0.055	0.036
ARCH LM	(0.706)	(0.658)	(0.784)	(0.862)	(0.980)	(0.815)	(0.849)

Note: Numbers in parenthesis are the z-Statistics.

*, ** and *** means that the coefficients are statistically significant at the 1%, 5% and 10% respectively.

VI. Conclusion and Recommendations

This essay empirically examined the relationship between GDP growth and political stability using variables that capture the disruptions in the social and political landscape inspired by competition

between the two major ethnic voting blocs for racial supremacy in Guyana. The article departs from previous studies by specifically exploring the impact of political instability on Guyana's economic fortunes since political instability has been a permanent feature of our political and economic history, and has manifested in various forms, anti-government demonstrations, riots, politically motivated crime wave, political assassinations, constitutional changes, insurrection. To a large extent, the various incarnations of political instability may be linked to the continuous struggle for political and economic power by the two largest ethnic voting blocs. Very often, the violence emanating from the conflict deteriorates to the point where it attracts descriptions such as 'civil war' (Premdas, 1995) and 'near-genocidal' (Mars, 2001). Hinds (2010) contends that Guyana even becomes ungovernable.

The empirical results show that change in the Head of State (CHOS) was positively related to economic growth, suggesting that these events stimulated economic growth. The results also point to a negative relationship between economic growth and the strikes, indicating that the country's economic fortunes were adversely affected by these activities. Riots, insurrection, political leaders' assassination, and politically motivated crime spree are not significant economic growth determinants. Additionally, change in the Head of State moderated the volatility of economic growth.

While the findings are mixed, there are important policy implications. Firstly, the PNC has consistently used violence and anti-government demonstrations to destabilize every PPP government during the 1960s, 1990s, and 2000s. The empirical results suggest that these events have harmful effects on the economy. Secondly, there has been a noticeable intensification of political instability since 1992 (Hinds, 2010). If one accepts that the competition for resources by the two largest ethnic voting blocs is the main driver of political instability, then the recent discovery of oil may contribute to more intense conflict and cause greater political instability in the future (Khemraj, 2020). Thirdly, since current growth is affected by past economic performance, any slowdown caused by anti-government demonstrations can contribute to suboptimal economic performance. Therefore, it means that for Guyana to grow and develop, focus on the reducing binding constraints, while a necessary condition, is not sufficient. It is vital to have political stability, which necessitates reforms that would reduce disruption motivated by

competition for power between the two largest ethnic voting blocs. Fourthly, the significant positive impact the change in Head of State (HOS) exert on economic growth highlights an important benefit associated with democratic turnover. Many viable solutions exist in the extant literature to promote democratic turnover, from federalism to constitutional reforms to ensure social and economic justice. Thus far, all the attempts to change the constitution, from the 1960s to 1990s, have failed to moderate the competition for political and economic power by the two largest ethnic voting blocs, which is the source of many political instability incarnations. It, therefore, means that a different approach to constitutional reforms is necessary.

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Appendices

A1. Unit Root Test.

	Augmented Dickey-Fuller		Phillip-Perron		Kwiotkwoski-Phillips-Schmidt-Shin		Zivot-Andrews
Intercept	-5.02095	*	-5.0363	*	0.15678	*	-6.087599*
Intercept and trend	-5.03902	*	-5.0185	*	0.11227	*	-6.185708*

*, ** and *** means that variable is stationary at the 1%, 5% and 10% respectively.

A2: Correlation matrix

	CHOS	RIOTS	INSUR	TER	PA	AGD
CHOS	1					
RIOTS	-0.12585	1				
INSUR	-0.04907	-0.04499	1			
TER	-0.07001	-0.06419	-0.02503	1		
PA	-0.13725	0.221728	-0.04907	0.220044	1	
STRIKES	-0.08653	0.176295	-0.03093	-0.04414	0.152449	1

A3: AR(1) model with and without structural break using data covering period 1962-2018

Variable	Coefficient	Coefficient
C	1.301	1.145
	(0.666)***	(0.672)***
GDP(-1)	0.373	0.396
	(0.125)*	(0.125)*
Break_91		6.132
		(4.675)
R-squared	0.140	0.166
Adjusted R-squared	0.124	0.135
F-statistic	8.937	5.387
Prob(F-statistic)	0.004	0.007

Note: Numbers in parenthesis are the standard errors

*, ** and *** means that the coefficients are statistically significant at the 1%, 5% and 10% respectively.

A4: ARCH LM Test

F-statistic	3.712363	Prob. F(1,54)		0.0593
Obs*R-squared	3.602214	Prob. Chi-Square(1)		0.0577
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.56787	6.741143	2.309381	0.0248
RESID^2(-1)	0.253697	0.131671	1.926749	0.0593
R-squared	0.064325			
Adjusted R-squared	0.046998			
F-statistic	3.712363			
Prob(F-statistic)	0.05928			

A5: ARCH (1) model for growth in GDP

Variable	Coefficient	Coefficient
Mean Equation		
C	1.091	0.856
	(1.297)	(0.955)
GDP(-1)	0.433	0.483
	(2.142)**	(2.362)**
Break_91		6.686
		(3.840E-10)
Variance Equation		
C	17.131	16.139
	(6.158)*	(6.066)*
RESID(-1)^2	0.133	0.153
	(0.943)	(1.045)
R-squared	0.136	0.159
Adjusted R-squared	0.120	0.127

Note: Numbers in parenthesis are the z-Statistics.

*, ** and *** means that the coefficients are statistically significant at the 1%, 5% and 10% respectively.

A6: GARCH (1,1) model of growth in real GDP

Variable	Coefficient	Coefficient
Mean Equation		
C	0.829	0.777
	(1.601)***	(1.380E+00)
GDP(-1)	0.575	0.572
	(2.142)*	(2.55E+01)*
Break_91		7.619
		(0.378)
Variance Equation		
C	3.444	3.920
	(3.822)*	(6.066)*
RESID(-1)^2	-0.067	-0.063
	(-1.883)***	(-1.670)***
GARCH(-1)	0.796	0.740
	(11.014)*	(9.071)*
R-squared	0.099	0.136
Adjusted R-squared	0.082	0.136

Note: Numbers in parenthesis are the z-Statistics.

*, ** and *** means that the coefficients are statistically significant at the 1%, 5% and 10% respectively.