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Bi-Communalism and the Economic Origins of Democracy: A Case Study

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Abstract

The paper shows how democratic elections in a bi-communal society with entrenched ethnic voting results in an elected oligarchy in which elites of one ethnic group control the allocation of scarce economic resources. Using a simple strategic game, the paper shows that the control of resources results in the Nash equilibrium of uneven development. Heterogeneous agents are included in the model, which is solved for the conditions under which democratic consolidation might occur. Token resource transfers from elites to other groups will tend not to guarantee consolidation. Remittances to the masses tend to prevent democratic consolidation, while bi-lateral grants to an elite dominated government prevent consolidation under some restricted conditions. Constitutional institutions might be necessary to incentivize explicit cooperation – the anti-Nash equilibrium.

Key words: fractionalization, political economy, prisoner's dilemma, bi-communalism, institutions

JEL Codes: B0, O10, P16, P48

1. Introduction

Democratic elections were reintroduced to Guyana on October 5, 1992. On this date, the Peoples National Congress (PNC) was displaced by the Peoples Progressive Party (PPP) through free and fair elections sponsored by former US President Jimmy Carter. Prior to this date the PNC maintained power through rigged elections. However, since free and fair election in 1992 there has been a gradual decline of democratic ideals (or some just never emerged). The opposition is excluded from the state-owned radio and television network, equal treatment under the law appears to be on the wane, the private press was pressured with government advertisement boycott, there have been no regional

elections in eighteen years, and independent private investors are being pressured while the government uses state resources to support the connected business owners.

This paper argues that the deterioration of political freedoms is rooted in the desire to control the economic space. Therefore, there is an economic underpinning of the ethnic conflict in Guyana. This conflict manifests itself in strategic ethnic voting that results in the Nash equilibrium of uneven economic growth. The elected PPP government draws its votes from mainly East Indians, while the main opposition PNC relies almost entirely on the African Guyanese population for its support, thus the bi-communal nature of the society (Milne, 1988)¹. On the surface, both parties display a multi-ethnic image with individuals from the other ethnic group taking up leadership roles². However, this cross-ethnic leadership does not reflect the voting pattern of the population. The ethnic voting pattern naturally results in conflict as occurred during the disturbances between 1998 and 2003 (Kissoon, 2007). The African PNC fears it will be permanently banished to the opposition given the entrenched ethnic voting and the numerical advantage of East Indians. Fearing permanent banishment to opposition status, African Guyanese elites seek to mobilize its masses for resistance through voting as an undivided bloc. Given the previous period of rigged elections by the African dominated PNC, East Indians respond strategically by also voting for their own ethnic leaders. The numerical advantage of East Indian masses almost always makes certain the PPP wins, thus resulting in an East Indian

¹ An established literature examines how ethnic fractionalization impedes the formation of economic institutions that are critical for promoting economic growth. Although the following is not an exhaustive list, see Easterly and Levine (1997) and Collier (2000) for work on this topic.

² See Schmitt (1991) for a definition and survey of various bi-communal societies around the world. Guyana was given as one of the examples. Other examples are Fiji, Israel, Trinidad and Tobago, Sri Lanka, Belgium, Malaysia, Burundi, Canada, Suriname, etc.

dominated elected oligarchy. Later in the paper it would be explained how East Indian elites use the democratic process in order to engineer the control of economic resources.

Is it possible that this situation could make the task of economic development more difficult to achieve? How would resources be distributed? Under what conditions will democracy consolidate and take firm root? This paper confronts these questions by utilizing the framework of Boix (2003) and Acemoglu and Robinson (2006). The approach allows for working out comparative statics showing how exogenous variables such as bi-lateral aid and remittances will influence the consolidation of democracy. The proposed model will also be used to determine the level of resource allocation at which point the masses of each group are no longer apathetic and would demand democratic reforms. The level of token compensation East Indian elites will need to pay the masses of each group to maintain the status quo is also worked out.

The model developed herein takes into consideration the bi-communal nature of Guyana. Therefore, it includes intra-group as well as inter-group heterogeneity in the framework. Instead of having only homogenous elites and masses, this paper includes East Indian (EI) elites, African Guyanese (AG) elites, East Indian working masses and African Guyanese working masses. The EI elites mobilize the votes of the EI masses to gain power, thereby gaining control of economic resources. EI elites, however, must compensate the other groups in order to maintain the status quo. On the other hand, the AG elites draw on the AG masses when it wants to disrupt the economic activities of the EI elites. This heterogeneous nature of the two dominant groups will influence the payoff structure and Nash equilibrium of the simple strategic game that will be used later in the paper.

2. The Making of an Elected Oligarchy and Economic Control

The elected oligarchy is rooted in the following arrangements. First, it emerges out of the principle of Democratic Centralism of the Peoples Progressive Party's (PPP's) Executive Committee and Central Committee. Essentially, the committees select the Presidential Candidate and Members of Parliament who are then offered to the electorate in free and fair general elections. Since the candidates are selected from the top, they do not necessarily reflect the interests of the mass members of the party. Take for example Mr. Moses Nagamootoo and Mr. Frank Anthony who received, respectively, the fifth and third highest vote count in the 29th Party Congress (in 2008). At the Congress a total of 913 votes were casted from a list of 1020 delegates³. The delegates would represent the PPP's grass root supporters. However, neither Mr. Anthony nor Mr. Nagamootoo was elected by the 35 member Central Committee to be part of decision-making Executive Committee. Therefore, the voting decision of a committee of 35 individuals trumped the voting of the mass delegates who came from every region in Guyana. Clearly, the internal organization of the PPP opens the door for voter collusion as a way of marginalizing dissenting party leaders. Recently the *Stabroek News*, the independent daily newspaper, reported Mr. Nagamootoo as saying party members no longer matter in the selection of

³ See the following report for more detailed election result: "PPP's 29th Congress -Moses, Donald, Frank in top 5". (2008, August 4). *Stabroek News*, <http://www.stabroeknews.com/2008/stories/08/04/ppp9s-29th-congress/>

their presidential candidate⁴. However, the PPP has recently signaled its continuing commitment to the top-down method of leadership selection⁵.

This selection mechanism, moreover, represents a crucial filtering process to find like-minded leaders who would be supportive of the President. These like-minded individuals determine the destiny of the country as they become part of the government and Members of Parliament. Once elected, the leadership of the PPP, purged of dissenting leaders, now enjoys the benefits of the marginally reformed 1980 Forbes Burnham Constitution. An addition to the 1980 Constitution requires that coalitions occur before the election and not after. The reason for this is for the PPP to scare their East Indian voters into not splitting their votes. At election time the rallying cry is a vote for an independent third party is a vote for the PNC; as a scare tactic East Indians are reminded about the bad years under the PNC dictatorship. The PNC also does its fair share of voter mobilization of African Guyanese almost completely ignoring East Indian communities. As noted earlier, the internal selection process of the PPP is susceptible to voter collusion and even coercion. This was made clear in the media by one faction of the PPP which wants the Presidential Candidate to be elected by secret ballot, while another prefers show-of-hands (Ramkarran, 2010). In the event where the show-of-hands is used, President Jagdeo could see those who have dissented against his chosen candidate. The dissenters could be punished by a loss of job and other privileges.

⁴ “PPP statement on candidate selection shows members ‘no longer count’- Nagamootoo”. (2010, September 28). *Stabroek News*, <http://www.stabroeknews.com/2010/news/stories/09/28/ppp-statement-on-candidate-selection-shows-members-%E2%80%98no-longer-count%E2%80%99/>.

⁵ See for instance the article: “PPP retains selection procedure for Presidential candidate”. (2010, September 24). *Stabroek News*, <http://www.stabroeknews.com/2010/news/stories/09/24/ppp-retains-selection-procedure-for-presidential-candidate/>.

Second, like-minded leaders are propelled to the national stage by general elections through a party list system. The tinkered 1980 Burnham Constitution thus avails significant power to the leaders to essentially form an oligarchic government. The national Constitution – written by the PPP’s archrival, the PNC – gives the President enormous powers, and the system of proportional representation enshrined in the Constitution allows for unaccountable Members of Parliament to be selected by the PPP party leaders. While there are free and fair elections, only a narrowly selected list of Members of Parliament is offered to the electorate.

Third, powerful members of the party and selected like-minded government officials are in a position to channel state contracts, jobs and even implement laws to benefit those with the political connections. One example is the tax breaks offered and special government procurement contracts offered to the Queens Atlantic Investment Inc. (Ram, 2008). The concessions were granted to Queens Atlantic – owned by a good friend of the President – without regard to their legality. The government used its majority in Parliament to amend the rules in order to bring the concessions in line with the law. The concessions, furthermore, were initiated without open bidding and a business proposal from Queens Atlantic to support its purchase of state-owned assets⁶. Another relatively more recent example involves the decision by the government to award a road-building contract for the Amaila Fall Hydroelectric project to Synergy, a firm that has no major road building experience but is expected to construct the access road through virgin forests and over swamp terrain (Ram, 2010). The owner of Synergy, like the proprietor of Queens Atlantic Investment Inc., is well connected to President Jagdeo. Apart from

⁶ “Law to be amended for Queens tax breaks.” (2008, June 16). Stabroek News, <http://www.stabroeknews.com/2008/archives/06/16/law-to-be-amended-for-queens-tax-breaks/>.

facilitating the favored entrepreneurs who are referred to as the ‘Newly Emerging Private Sector’ by President Jagdeo, the government also punishes members of the business community who are deemed to be unfriendly. This appears to be the case with Mr. Robert Badal who publicly criticized the president at a shareholders’ meeting in 2009. Following this incident the President indicated his intention to offer the Marriott chain a government subsidy to invest in Guyana. The move by President Jagdeo was intended to encourage Marriott to set up operation in Guyana in order to compete with the Pegasus – a prestigious hotel owned by Badal (Badal, 2010; Ram, 2010).

In conclusion, this section describes the following chain of events as the root of the elected oligarchy. First, Democratic Centralism allows the few individuals in the PPP to select a Presidential Candidate who is then presented to the party mass supporters and the nation as a whole (this is the reason why the President wants the method of show-of-hands over that of secret ballots). Second, given the entrenched ethnic voting patterns, the Candidate is likely to win the national election and therefore enjoy the immunities of the mildly tinkered 1980 Burnham Constitution. Third, this Candidate then surrounds himself with chosen like-minded individuals. Fourth, generous state-sponsored incentives are then offered to chosen members of the business class. This allows the elected oligarchy to control the economic space in Guyana.

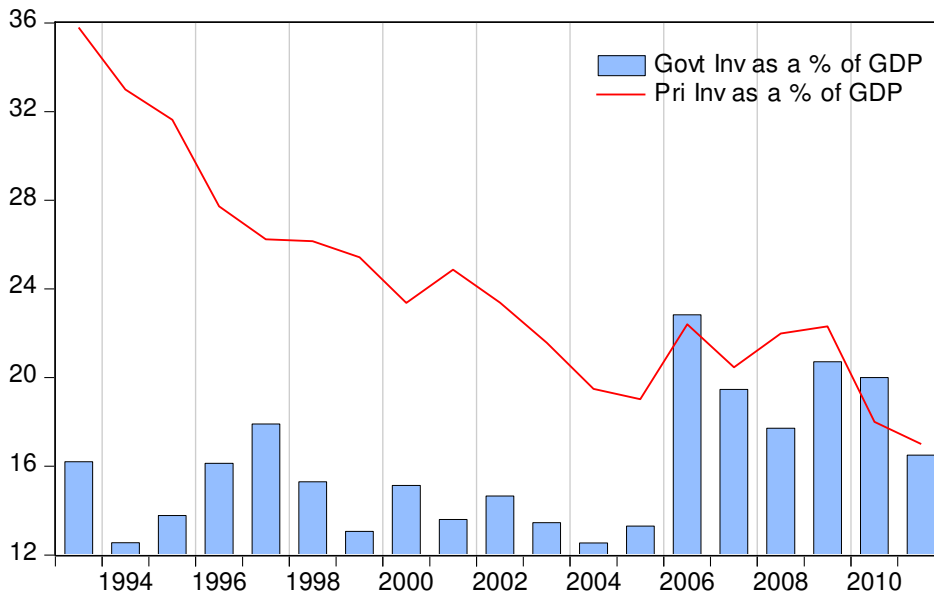
3. Stylized Facts

This section presents some selected stylized data to give a flavor of the development challenges Guyana faces. In addition, understanding some of the structural

features in the economy will help us to isolate the argument proposed in this paper – that an elected oligarchy retards development when the society is ethnically bi-communal.

In the next section the paper addresses the transmission of causation from elected oligarchy to underdevelopment in a bi-communal system. The first chart, Figure 1, compares private investments and government investments as a percentage of GDP. This chart shows data from 1993 to 2011. In general the ratio of private investment as a percentage of GDP has declined, while in percentage terms government investment has increased. In spite of the argument herein that the government is engineering its own private business class, the overall total private investment has declined. This would seem to point out that the actions of the State to control the business environment for a chosen few – while being pro private investments – might have succeeded in decreasing overall private investments.

Figure 1. Government and private investment as a percentage of GDP, 1993 – 2011



Data source: Bank of Guyana *Annual Reports*, various years

The structure of production has not changed substantially over the past five decades. Production and export are still mainly dependent on gold, rice, bauxite, timber and sugar. The services sector, however, has increased in mainly non-tradable services such as retail and banking. Structural production transformation was seen as important among the classical development economists (see UN, 2006), and also among the more modern scholars (see Hausmann et al, 2007; Page, 2012). The Guyanese manufacturing sector has declined over the years mirroring the de-industrialization in Africa and elsewhere (Page, 2012). The benefits of manufacturing growth is often emphasized by economists who underscore the importance of production structure (Thirlwall, 2007; UN, 2006), and Hausmann et al (2007) shows that specialization in goods at the upper echelon of the global hierarchy of exports results in knowledge spill over from one sector to the next. The structure of ownership of production is also important in a political economy context. When elites are land owners who are involved in extractive industries, democratic roots may not consolidate. The consolidation might take deeper roots in societies that are industrial and where there is a high accumulation of human capital (Acemoglu and Robinson, 2006).

Economic development and structural production change have to be financed. Capital mobility, moreover, has implications for the willingness of elites to repress democratic demands (Boix, 2003). If elites are easily able to send capital abroad in times of stress, then they may be more willing to accommodate the democratic institutions others may demand. There has been a significant movement towards financial sector reforms and capital account liberalization in Guyana (Khemraj, 2008; Egoume-Bossogo et al, 2003). The implication here is funds can be easily transferred abroad in times of

political or economic stress. In spite of efforts to liberalize the financial system and promote capital and money market development, the financial system has remained dominated by oligopolistic commercial banks as asset concentration among banks has increased and there are fewer banks than under the period of financial repression. The entry of a few foreign banks has not changed this situation, perhaps because the size of the economy and level of economic activities act as natural entry barriers, thereby making the banking system non-contestable. Commercial banks lend mainly to established borrowers, they hold large amounts of excess liquidity, and the loan-deposit interest rate spread has widened since the early 1990s (Khemraj, 2008).

4. Resource Control and Undemocratic Structures

This section shows that entrenched ethnic voting in a bi-communal society can result in a Nash equilibrium that perpetuates unequal development. Before presenting the ethnic conflict in a strategic game, the paper shows the inter-ethnic and intra-ethnic relations in a flow diagram. The notable game-theoretic studies (on the emergence and consolidation of democracy) upon which this paper seeks inspiration are Boix (2003) and Acemoglu and Robinson (2006). This work has a few differences relative to Boix's framework in which the Constitution is not important for generating the choice of democratic regime. According to Boix inequality of income and capital mobility are the key factors driving the elites to accommodate or not to accommodate. In this paper, the Constitution – which bestows significant powers and immunities to the President and promotes winner-take-all politics – allows for the control of economic resources by the elected elites. The other two key differences of this work are: (i) the paper applies a

game-theoretic method to a bi-communal voting structure; and (ii) there is within group and inter-group heterogeneity.

One representative ethnic voter cannot know how the other ethnic voter will choose in a secret ballot. Since intra-ethnic social networking will play a role in the distribution of resources, and therefore influence inter-ethnic income growth payoff and inequality, the representative voter has to play it safe by voting for elites from within her group. This fear works well for the elites of the ethnic group with the slight numerical advantage. If they can gerrymander internal party elections as explained in section 2, they will enjoy the benefit of power the Constitution brings and establish a system of controlling private investments – hence the elected oligarchy.

The Constitution, therefore, allows for the winning elite to distribute resources to its ethnic group through employment, public procurement and other rights to resources (Norton, 2007). However, the winning elites are cognizant of the likelihood that the other group may rebel, especially since the group that loses the election forms a significant segment of the population. Therefore, they may be willing to bear some cost of redistribution and avoid complete discrimination (Milne, 1988). The redistribution could be done in two ways. First, the winning elite may pay off the losing elite so as to pacify the losers. Second, enough public works might get done so that all citizens may benefit. At first sight the first method of redistribution is most deleterious and engenders the greatest income inequality. The second method may be less severe. However, it can also be pernicious. For example, if the public projects are mainly built by inexperienced friends of one ethnic group the public goods may not be optimally developed, chosen or sequenced, thus resulting in a waste of economic resources (Boakye, 2012). In addition

the government could subsidize friendly business to compete with those it considers not on its side. Regardless of the method of redistribution chosen income inequality will be generated.

A contribution of this work is the introduction of heterogeneous masses and elites. Henceforth, we will assume four primary groups in the model: East Indian elites (EIEs), African Guyanese elites (AGEs), East Indian masses (EIMs) and African Guyanese masses (AGMs). In a bi-communal society there could also be a third heterogeneous minority group made up of mix ethnicities and other groups; however, for the purpose of the analysis we will assume they are not large enough to alter the electoral outcomes. In the case of Guyana this is not an unrealistic assumption because of the entrenched ethnic voting that limits the possibility for regular democratic turnover in the government. The East Indian population is approximately 45%, African Guyanese approximately 38%, Indigenous Guyanese 9% and mixed Guyanese account for the remainder.

The minority groups can be treated as the independent voters. As a result, they would tend to be more willing to vote for an independent third party. An obvious question that emerges is if East Indians only form 45% what is preventing the minority groups from voting for the AGEs and therefore remove the elected oligarchy? The short answer is the Constitution allows the party that wins the largest percentage of the votes to form the government; furthermore, there can be no post-election coalitions. Therefore, using patronage and resource transfers EIEs only need to maintain their core votes from EIMs and win over a sufficient percentage of Indigenous and other independent votes.

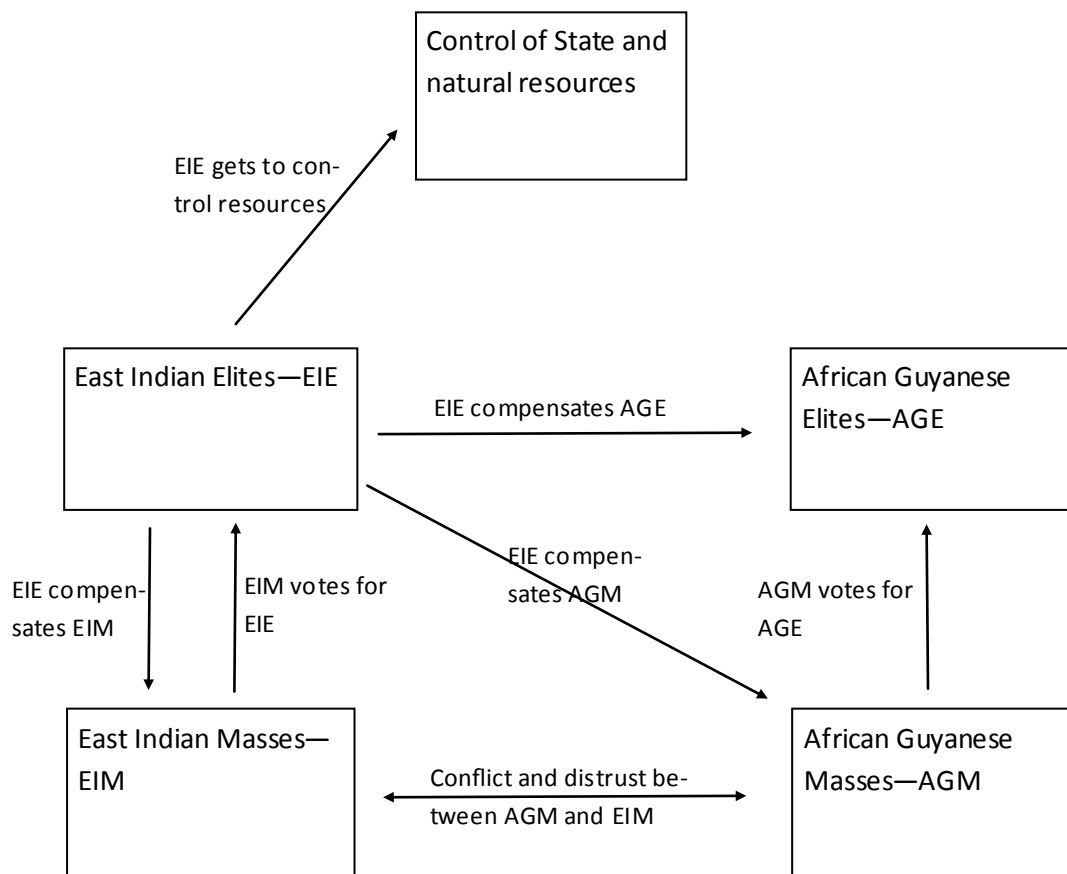
As we develop the strategic behavior below it will be seen that the third party does not change the nature of the Nash equilibrium. The third party does not draw

significant support from the two dominant ethnic groups because of the inherent fears highlighted earlier. The voting is taking place as a simultaneous move game or secret ballot on one day. Since EIMs do not know how AGMs will vote they vote for EIEs; AGMs also do not know how EIMs will vote, therefore they vote for AGEs. In this scenario the independent third party faces an existential threat as it could fail to win even a single seat at the election.

Figure 2 shows the main voting pattern, resource control and resource allocation in our bi-communal setup. At the pinnacle of the diagram is the box of resources that elites can control if they win the election. The elites who earn the goodies in this box will experience the fastest accumulation of capital and therefore income growth. Given the numerical advantage of EIMs, EIEs win the election and are therefore in a position to control the government and natural resources. Aware of the possibility of discontents among its core support, EIEs transfer some compensation to EIMs. This is shown by the downward pointing arrow from EIEs to EIMs. Aware of the possibility of rebellion, EIEs will transfer some compensation to AGMs; this is shown by diagonally pointing arrow from EIEs to AGMs. EIEs may also try to drive a wedge between AGMs and AGEs by compensating the latter in more generous terms. Some of these strategic relations will be developed in the game later in the paper. Suffice to say, the elites who control the State and the natural resources will experience the highest income growth and therefore will be in a position to share resources with its group. In that case, we assume EIEs will experience the highest income growth and share of resource endowment. Therefore, inequality is a natural outcome of this process of ethnic voting and resource allocation.

The two lower boxes in Figure 2 have a bi-directional arrow between EIMs and AGMs, indicating the mutual distrust between the two main ethnic groups. This distrust is played out in ethnic voting at election time. As noted earlier, a representative voter perceives that if the other side wins the national election then her economic fortunes will worsen. The representative voter also does not know how the other voter will vote. Therefore, to protect her perceived economic interest she votes for the elites within her ethnic group. We will make the assumption that a voter perceives her income will grow the fastest if the elites from her group win. This is not an unrealistic assumption given the intra-ethnic social networking. The party that wins obviously will turn to trusted members of its ethnic group for key jobs, contract procurements and resource allocations.

Figure 2. Voting pattern and resource allocations in Guyana



Let us write out the utility payoff of each agent to reflect some of the strategic details explained above. The risk-averse EIEs have the following utility (where $a < 1$). The variable C represents the costs of redistribution the EIEs must bear to preserve the status quo. Let us assume a simple cost function that will subtract from utility of EIEs,

$$C = y_{EIE}^2.$$

$$U_{EIE} = y_{EIE}^a - C \quad (1)$$

Income of (y_{EIE}) of EIEs is accumulated as follows

$$y_{EIE} = \left(\frac{K_{EIE}}{K} \right)^\alpha = k_{EIE}^\alpha \quad (2)$$

k_{EIE} is the capital stock of EIE (K_{EIE}) as a ratio of the total capital stock of the country (K). The parameter $\alpha < 1$ indicates diminishing returns to capital. Diminishing returns is a plausible assumption in this case given that capital is mainly deployed in extractive industries and agriculture. The manufacturing sector is underdeveloped and the service sector is mainly in the form of the non-traded variety. Therefore, for the purpose of this paper we can ignore the usual technology variable in this type of production function.

The utility of the representative EIM is follows

$$U_{EIM} = y_{EIM}^b + \theta_1 C \quad (3)$$

The income of EIM is determined as follows

$$y_{EIM} = \left(\frac{K_{EIM}}{K} \right)^\beta = k_{EIM}^\beta \quad (4)$$

k_{EIM} is the ratio EIM capital to the total of the country. The percentage of the cost that EIE bear that is paid to EIM is given as $\theta_1 C$, thereby adding to the utility of EIM. The parameter $\beta < 1$ indicates diminishing returns of capital, while the parameter $b < 1$ indicates diminishing marginal utility.

The utility earned by AGE is expressed as

$$U_{AGE} = y_{AGE}^c + \theta_2 C \quad (5)$$

Income is accumulated as follow

$$y_{AGE} = \left(\frac{K_{AGE}}{K} \right)^\gamma = k_{AGE}^\gamma \quad (6)$$

k_{AGE} is the ratio of the country's total capital stock shared by AGE. The parameter $\gamma < 1$ indicates diminishing returns to capital ownership and the parameter $c < 1$ indicates diminishing marginal utility. The share of the cost redistributed towards AGE is $\theta_2 C$.

Finally the utility gained by AGM is expressed as

$$U_{AGM} = y_{AGM}^d + \theta_3 C \quad (7)$$

Income grows as follows

$$y_{AGM} = \left(\frac{K_{AGM}}{K} \right)^\lambda = k_{AGM}^\lambda \quad (8)$$

k_{AGM} shows the ratio of the country's total capital owned by AGM. $\theta_3 C$ is the share of redistribution that goes to AGM. The following parameter values and conditions are assumed to hold $d < 1$, $\lambda < 1$ and $\theta_1 + \theta_2 + \theta_3 = 1$. Also the sum of the capital shares is equal to 1 ($k_{EIE} + k_{EIM} + k_{AGE} + k_{AGM} = 1$).

Similar to Boix (2003), ethnic income inequality is built into the model by differences in ratio of ownership of capital. The identity $k_{EIE} + k_{EIM} + k_{AGE} + k_{AGM} = 1$ shows that if any group's relative share of capital increases that group will experience a higher threshold of income, while the other gets a smaller share. The political structures discussed earlier imply that if EIE continues to win the election owing to the ethnic numerical majority of EIM then they can continue to own a larger share of capital. However, EIE can only continue to own more of productive capital by redistributing some resources to EIM, AGM and AGE. This redistribution can be done through token mechanisms so as to maintain the status quo of an elected oligarchy in which democracy has not consolidated. Or the redistribution can take the form of constitutional changes that allows for some form of power sharing. This is likely to result in more egalitarian accumulation of productive capital as it allows co-operation.

Using domestic the institutional context, the paper shows how the Nash equilibrium of unequal development can result from an entrenched ethnic voting pattern. A representative voter AGM has two options when voting in a secret ballot. Vote for AGE or vote for a multi-ethnic independent third party. Of course the representative AGM voter has the option to vote for EIEs. However, this is not likely to occur in any large number to alter the election; therefore we can exclude this strategy. On the other hand, the representative EIM has two strategies: vote for EIEs or a multi-ethnic independent third party. Let us also assume that EIM will not vote for AGE to fundamentally alter the election result. However, they may be willing to vote for a multi-ethnic independent third party. Assume the utility payoffs are as given in the table below.

On the surface it would appear that the best outcome for both AGM and EIM is for them to ignore ethnic allegiance and vote for the multi-ethnic political party. This allows a genuine multi-ethnic group of leaders to emerge, backed by cross-ethnic support and networks. Here the multi-ethnic government would be able to allocate resources more equitably across groups as social networking processes will more likely draw on people from diverse backgrounds; in this case let us assume the utility of (10, 10) results. However, uncertainty and suspicion at secret ballot brings distrust, which is further accentuated by the pro-ethnic campaigns of the respective elites. The representative EIM does not know how the representative AGM will vote. If EIM votes for the independent party and AGM does not, then the utility payoff is (2, 15). This utility results because enough EIM votes independently to allow AGEs to win. Distribution of resources will be skewed in favor AGM – thus resulting in the skewed utility payoff. On the other hand, AGM does not know how EIM will vote in secret ballot. She knows if she votes for the independent party and EIM does not then EIE will win the election with a utility payoff of (15, 2).

Table 1. Utility payoff from bi-communal voting

		AGM	
		Vote AGE	Vote multi-ethnic party
EIM	Vote EIE	$U_{EIM} = 5 ; U_{AGM} = 3$	$U_{EIM} = 15 ; U_{AGM} = 2$
	Vote multi-ethnic party	$U_{EIM} = 2 ; U_{AGM} = 15$	$U_{EIM} = 10 ; U_{AGM} = 10$

The classic prisoner’s dilemma game would predict the Nash equilibrium in which each group votes for its respect ethnic leaders. Since East Indian elites win the

election the intra-group social networking will see EIM getting a higher payoff. This will lead to an uneven distribution of investment capital, and therefore unlikely to lead to the higher level of overall group satisfaction. The Nash equilibrium of (5, 3) results because each group plays it safe as it cannot trust how the other group will vote on the day of secret ballot⁷. Although this is a simple one shot game, both groups are guided by historical voting patterns to observe they cannot fully trust the other group on the day of secret ballot. EIMs enjoy a slightly higher rate of growth because the possibility exists for intra-group networking to be in their favor. However, this equilibrium is clearly sub-optimal compared with choosing the independent party. A further auxiliary result taking place is the difficulty an independent third party will face in emerging as a serious challenge to the status quo.

5. Democratic Consolidation

Why don't the elites cooperate and reform the Constitution for the greater good to promote power sharing as some scholars have noted could be applicable to these societies? The development economist Arthur Lewis (Lewis, 1965) proposed power sharing as a means of easing the conflicts in West Africa. In the context of the prisoner's dilemma game above, a constitution promoting power sharing could remove the uncertainty and distrust among the two masses and allow them to escape the sub-optimal Nash equilibrium. In other words, a constitution that incentivizes cooperation instead of

⁷ Theoretical and empirical work would lend support to the assumed payoff structure. Theoretical work by Acemoglu (2008) suggests that oligarchies would tend to result in long-term growth that is lower than democracies. The author's model shows that oligarchies would tend to earn a growth spike in the short-term because entry barriers are erected against those who are not connected. However, this growth will not sustain itself in the long-term because other elites may threaten the incumbent. In addition, theoretical work done by Boakye (2012) shows that social polarization leads to discriminatory practices, inefficient allocation of resources and diminished growth prospects. Empirical research also suggests that countries with democratic institutions enjoy superior long-term growth (Butkiewicz and Yanikkaya, 2006). Empirical research by Rodrik (2000) observed that participatory political regimes are better at dealing with adverse short-term shocks and sustaining long-term growth.

competition might be necessary. This idea is founded in the literature. For example Josselin and Marciano (2002) noted the need for constitutional instruments in addition to property rights. And Rodrik (2000) notes the need for political institutions for managing ethnic conflict.

The present Guyanese constitution, however, allows the winner to take all (minus the cost of paying off the others for maintaining the peace); therefore, the winner does not have the incentive to accommodate towards power sharing when they can have it all. This therefore begs the question of under what circumstances will EIEs be willing to accommodate? The previous literature by Boix (2003) emphasized inequality and capital mobility as determining consolidation. Soifer (2013) argues that state capacity is necessary for reinforcing the effect of inequality on the process of democratic accommodation. Elites in countries with strong state capabilities are more likely to accommodate, according to Soifer. However, this work extends the literature by examining whether remittances and bi-lateral grants can postpone democratic consolidation.

East Indian elite democratic accommodation function

EIE will only accommodate democratic reforms when the marginal income of the oligarchy falls below the marginal cost of maintaining the system. Therefore, the level of k_{EIE} that is consistent with the equality of marginal benefit and marginal cost of maintaining the political system is the upper threshold on owning the means of income growth, capital. If EIE wishes to hold more income generating capital then they must incur more marginal disutility than marginal benefit. Substituting $C = y_{EIE}^2$ and Equation 2 gives the modified utility function

$$U_{EIE} = k_{EIE}^{a\alpha} - k_{EIE}^{2\alpha} \quad (9)$$

The EIE democratic accommodation function is obtained as follows

$$\frac{dU_{EIE}}{dk_{EIE}} = a\alpha k_{EIE}^{a\alpha-1} - 2\alpha k_{EIE}^{2\alpha-1} = 0$$

Depending on the parameter values of a and α , k_{EIE}^* will solve for the upper threshold level of capital, after which point it is more costly to maintain the oligarchy. This relationship will be used later to examine how the exogenous variable of bi-lateral transfers will influence EIE's willingness to accommodate.

East Indian masses apathy function

The utility of East Indian masses can be modified as follows $U_{EIM} = k_{EIM}^{b\beta} + \theta_1 k_{EIE}^{2\alpha}$ after substituting the cost function and Equation 4. Since $k_{EIE} = 1 - k_{EIM} - k_{AGE} - k_{AGM}$ we can obtain the utility function that helps us to derive the EIM function of apathy, named as such to emphasize the point at which East Indian masses do not care for any more transfers from EIE. The intuition here is the concave utility has reached its maximum point, thus transfers from EIE gives zero marginal utility. Given the set up above if EIM become apathetic in large enough numbers then the EIE, the elected oligarchs, loses power and there is democratic turnover at a free and fair election. The following utility allows for deriving the EIM apathy function.

$$U_{EIM} = k_{EIM}^{b\beta} + \theta_1 (1 - k_{EIM} - k_{AGE} - k_{AGM})^{2\alpha} \quad (10)$$

The apathy function is therefore

$$\frac{dU_{EIM}}{dk_{EIM}} = b\beta k_{EIM}^{b\beta-1} - 2\alpha\theta_1 (1 - k_{EIM} - k_{AGE} - k_{AGM})^{2\alpha-1} = 0 \quad (11)$$

An interesting feature of this function is if EIE increases token transfers to EIM – that is increase θ_1 just to maintain the status quo of an elected oligarchy – it diminishes the value of apathy assuming the other parameters and variables are unchanged. It is in the interest of EIE to keep EIM, AGE and AGM pacified so as not to challenge the political status quo. However, what happens if k_{EIM} increases thereby showing redistribution of capital from EIE to EIM? This we will need to analyze using numerical simulation for apathy given two parameter possibilities $2\alpha - 1 > 0$ and $2\alpha - 1 < 0$. In general, we can note that redistribution will reduce apathy, thereby making EIM less comfortable with the status quo. Therefore, this paper argues that instead of token redistribution a policy of genuine redistribution (or power sharing) can be crafted to facilitate cooperation.

African Guyanese elite apathy function

Under what condition will AGE challenge the system? In other words, at what level of inequality will AGE prefer conflict instead of acceptance of the elected oligarchy? In the set up above AGE do not possess the numbers to change electoral results. They also do not possess the financial resources to compensate AGM; rather they depend on the fears of AGM to maintain the entrenched voting arrangement. Therefore, their strategy of rebellion would likely be to maintain the support of their masses as a means of continuing their political stand vis-à-vis EIEs. Let us now look at the utility of AGE so that we can study how their degree of apathy changes with capital accumulation and compensation from EIE.

Substituting the cost function of EIE so that it enters the utility of AGE gives

$U_{AGE} = k_{AGE}^{c\gamma} + \theta_2 k_{EIE}^{2\alpha}$. This can be further expressed as

$$U_{AGE} = k_{AGE}^{c\gamma} + \theta_2 (1 - k_{EIM} - k_{AGE} - k_{AGM})^{2\alpha} \quad (12)$$

The AGE apathy function is obtained as follows

$$\frac{dU_{AGE}}{dk_{AGE}} = c\gamma k_{AGE}^{-c\gamma} - 2\alpha\theta_2(1 - k_{EIM} - k_{AGE} - k_{AGM})^{2\alpha-1} = 0 \quad (13)$$

It is clear from this function that increasing token transfers from EIM to AGE – that is increasing θ_2 – will decrease apathy, thus making AGE less comfortable with the system of oligarchy. The apathy function also suggests that a better way of inducing apathy is for redistribution of capital ownership from EIE to AGM. This may point the way towards developing political institutions that can improve distribution through co-operation. The numerical simulation below shows the possible apathy values for the two possibilities $2\alpha - 1 > 0$ and $2\alpha - 1 < 0$.

African Guyanese masses apathy function

AGMs are numerically the second most dominant group after EIM. Let us analyze the utility of this group and study the effects of capital accumulation and token transfers.

The utility is as follows $U_{AGM} = k_{AGM}^{d\lambda} + \theta_3 k_{EIE}^{2\alpha}$ and can be rewritten as

$$U_{AGM} = k_{AGM}^{d\lambda} + \theta_3(1 - k_{EIM} - k_{AGE} - k_{AGM})^{2\alpha} \quad (14)$$

The apathy function is derived as follows

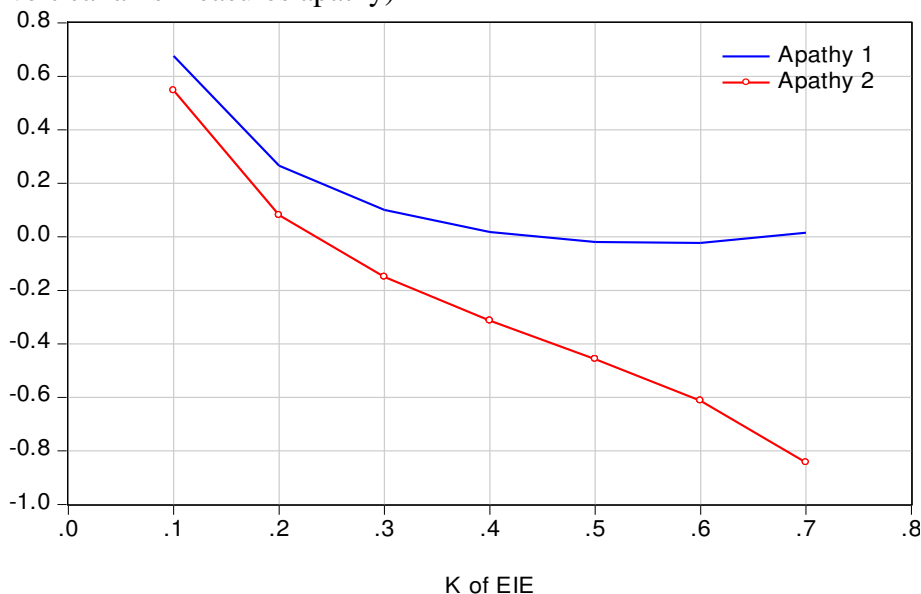
$$\frac{dU_{AGM}}{dk_{AGM}} = c\gamma k_{AGM}^{-d\lambda} - 2\alpha\theta_3(1 - k_{EIM} - k_{AGE} - k_{AGM})^{2\alpha-1} = 0 \quad (15)$$

It is clear from this function that increasing token transfers by an increase in θ_3 will reduce apathy and make the elected oligarchy less desirable. However, apathy can decline for a more noteworthy reason like redistribution of capital from EIE to AGM. Let us look at the simulations to see the possible outcomes.

Model simulation

The apathy function is similar for each group. Only the parameter values in the utility and income growth function are different, and so too are the relative shares of compensation. In that case only one function is simulated for different parameter values. The function is simulated for two possibilities $2\alpha - 1 > 0$ (apathy 1) and $2\alpha - 1 < 0$ (apathy 2). Assume that k_j takes values from 0 to 0.7 (where $j = EIM, AGE, AGM$). The upper limit of 0.7 ratio is assumed to be the maximum any single group can achieve. Figure 3 shows the decline in apathy for the two parameter restrictions above. Apathy 2 starts off at a lower threshold and declines faster as the group accumulates capital. Apathy 1 is more interesting. It starts off at a higher threshold and declines at a slower rate. After reaching a minimum point it increases gradually. The results suggest that crafting democratic institutions to allow for more egalitarian distribution can motivate people to play a more active role in democracy.

Figure 3. Simulation of apathy function for EIM, AGE and AGM (horizontal axis k_j and vertical axis measures apathy)



Bi-lateral grants

Exogenous variables may influence the consolidation of democracy. We turn to this question by first analyzing how bi-lateral transfers to EIM will influence their willingness to accommodate democratic reforms. Later the influence of remittances on the apathy function of EIM, AGE and AGM will be analyzed. Let us assume that the ruling elites get bi-lateral funding from a foreign government – a reasonable assumption since we have noted that EIE won the election and forms the government. EIE receives a transfer τ that is a percent of GDP; assume $0 < \tau < 1$. Transfers allow EIE's income to grow as follows $y_{EIE} = k_{EIE}^\alpha (1 + \tau)$. Therefore the utility function of EIE can be re-expressed as follows.

$$U_{EIE} = k_{EIE}^{\alpha a} (1 + \tau)^a - k_{EIE}^{2\alpha} (1 + \tau)^2 \quad (16)$$

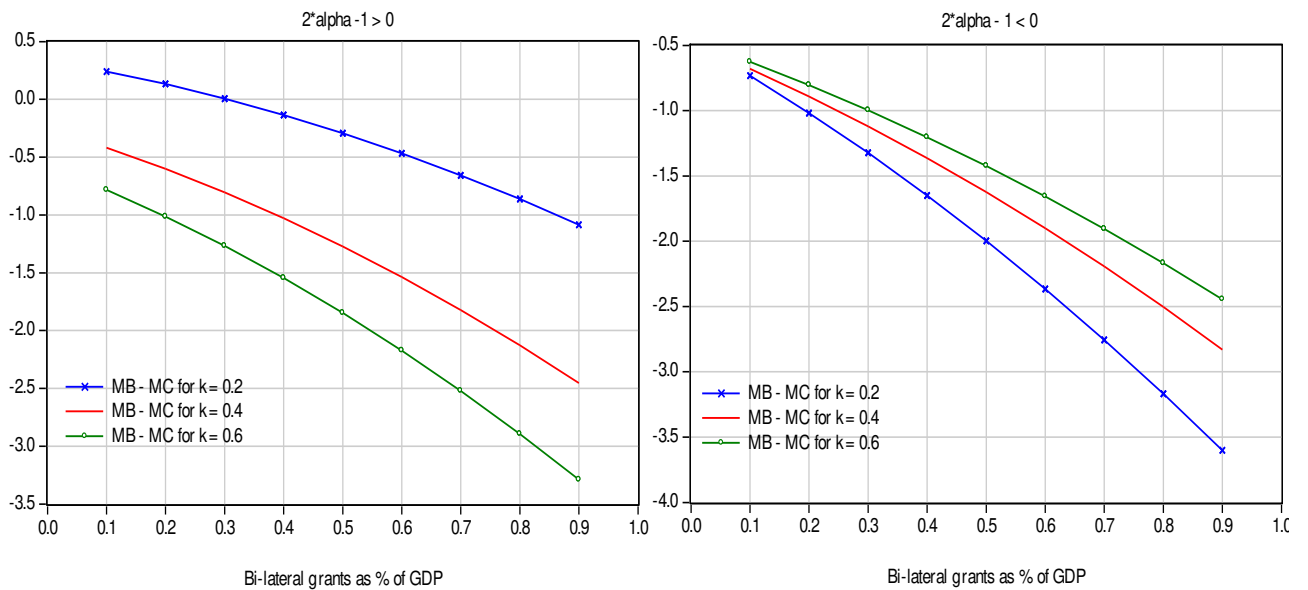
The function comparing the marginal benefit and marginal cost of EIE democratic accommodation is derived as follows. The function embeds the rate of bi-lateral transfer in marginal benefit (MB) and marginal cost (MC).

$$\frac{dU_{EIE}}{dk_{EIE}} = \alpha a k_{EIE}^{\alpha a - 1} (1 + \tau)^a - 2\alpha k_{EIE}^{2\alpha - 1} (1 + \tau)^2 = 0 \quad (17)$$

Let us use the method of simulation instead of working out the analytical derivative in order to examine the effect of bi-lateral transfers on EIEs democratic accommodation. The simulation takes place for various values of τ ($0 < \tau < 1$). If MB is greater than or equal to MC over some range of τ then EIEs are much less likely to accept democratic accommodation. If MB is less than MC over the same range of τ then accommodation is more likely because it is costly to keep paying off others for maintaining the peace. Figure 4 shows as capital level rises, the net marginal benefit of

transfers falls towards negative when $2\alpha - 1 > 0$. However, for $k_{EIE} \leq 0.2$ bi-lateral transfers up to 30 percent of GDP would tend to lead to positive net marginal benefit; hence less likelihood of EIE democratic accommodation. On the other hand, once $2\alpha - 1 < 0$ the net marginal benefit is always negative no matter the level of capital ownership. In the latter case EIEs may be more likely to accommodate.

Figure 4. The effects of bi-lateral grants to EIE on democratic accommodation for $2\alpha - 1 > 0$ and $2\alpha - 1 < 0$



Remittances

EIM, AGE and AGM receive remittances. Guyana is recognized as an economy with a very high remittance to GDP ratio given the very large diaspora community. Each group obtains κ_j percent of GDP of remittances where $\sum \kappa_j = 1$ (and $j = EIM, AGE, AGM$). Income of each group accumulates as follows $y_j = k_j^\varphi (1 + \kappa_j)$ and the utility can be represented as $U_j = y_j^e + \theta_j k_{EIE}^{2\alpha}$. It is assumed here that remittances

supplement each group's domestic capital. The two equations allow for rewriting the utility function that is used to derive the apathy function with remittances.

$$U_j = k_j^{e\phi} (1 + \kappa_j)^e + \theta_j (1 - k_{EIM} - k_{AGE} - k_{AGE})^{2\alpha} \quad (18)$$

The apathy function with remittances is as follows.

$$\frac{dU_j}{dk_j} = e\phi k_j^{e\phi-1} (1 + \kappa_j)^e - 2\alpha\theta_j (1 - k_{EIM} - k_{AGE} - k_{AGE})^{2\alpha-1} = 0 \quad (19)$$

Let A represent dU_j / dk_j . The effect of the exogenous remittance share is given as follows.

$$\frac{dA_j}{d\kappa_j} = e^2 \phi k_j^{e\phi-1} (1 + \kappa_j)^{e-1} > 0 \quad (20)$$

Equation 20 shows that remittances would unambiguously increase apathy. This would be akin to an outward shift in the curves in Figure 3. The implication here is the three groups may be less willing to pursue democratic change as remittances continue to rise as a percentage of GDP.

6. Concluding Remarks

Democratic elections can result in an elected oligarchy where economic development can be stymied. This paper examined how this could occur in a bi-communal society with entrenched ethnic voting. After controlling the outcome of internal party elections, the elites select leaders who are then offered for national elections. The East Indian numerical majority almost guarantees victory for the East Indian elites. They then use the power enshrined in the Constitution to evade accountability, prevent local elections, control the state media and allocate resources to

friendly business interests. The intra-ethnic social networking implies that East Indian masses enjoy a relatively faster rate of accumulation of income.

The paper uses a simple strategic game to show how uncertainty and distrust between the masses of the two dominant groups reinforce the ethnic elites and allow for a Nash equilibrium in which unequal income growth will result. Therefore, the paper argues that the development process is stymied. After using a simple game from which the sub-optimal development equilibrium is derived, the paper presents a formal model to work out the scenarios under which democratic transition may occur. It suggests that token resource transfers from East Indian elites to African Guyanese elites and East Indian masses do not guarantee that the regime of elected oligarchy can continue indefinitely. The model suggests that promoting redistribution through cooperation can result in higher utility and income accumulation for all groups – hence a more balanced development. In this case, a constitution promoting power sharing is needed to remove the uncertainty and escape the sub-optimal Nash equilibrium. Bi-lateral transfers from one government to the elites could postpone democratic accommodation when the elites are in the early stage of income accumulation. Remittances to other groups could increase apathy and slow the desire for seeking political reforms.

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