

# The W.A. Lewis legacy of industrialization and Caribbean economic policy

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## ABSTRACT

*The paper argues that contemporary Caribbean economic policy agenda is driven by a quest to liberalize the economic realm and minimize the role of a developmental state. In particular, the agenda of financial liberalization – which holds that minimizing the role of the state in the financial sector is growth augmenting – is examined. The Fry (1989) financial liberalization model is augmented to demonstrate that what has actually taken place is a movement from government financial repression to private oligopoly bank stagnation. The paper also underscores that stabilization via market-based monetary policy has taken precedence over long-term production-based or industrial policy, a primary component of the Lewis legacy. However, a model which aims at unifying stabilization policies and long-term industrial strategy is presented.*

Key words: industrial policy, monetary policy

JEL Codes: E52, O16, O25, O42

## 1) INTRODUCTION

This paper argues that financial liberalization policies in the Caribbean have tended to emphasize stabilization policies at the expense of production-based industrial policies. Therefore, Caribbean economic policy has drifted away from the original vision outlined by Lewis (1950). A theoretical framework is presented to demonstrate how stabilization policies *alone* could engender tight business credit conditions and therefore harm economic growth. A model which links the finance and real sectors via industrial policy is proposed. The model shows that market-based (or indirect) monetary policy can have an asymmetric effect on output; while a monetary expansion tends not to facilitate business credit expansion, a contraction tends to decrease credit. However, the analysis will demonstrate that it is possible to dampen this asymmetric outcome; thus facilitating a more expansionary role for indirect monetary policy.

The analysis is built around several key notions. First, it underscores the ability of financial institutions, particularly commercial banks, to dominate financial markets whether it is the market for government securities, foreign exchange or credit. Prices – the loan rate, interest rate on government securities, and the ‘flexible’ foreign exchange rate – are largely determined by these institutions. In less developed economies, therefore, market outcomes are determined by oligopolistic forces. For the purpose of

our analysis the most important interest rate, the loan rate, is a mark-up rate over the marginal cost of bank production<sup>1</sup>.

Second, the role of industrial policy as unifying stabilization and direct production-based policies is emphasized. In other words, industrial policy has two key roles: (i) it accentuates the role of finance in economic growth; and (ii) it facilitates a more expansionary role for monetary policy. Thus, finance is subservient or endogenous to real sector policies. Finance would not play a significant role in economic growth until a developmental state is able and willing to ignite the facilitating role of finance in economic development. Moreover, monetary policy plays a passive, but yet complementary, role to industrial policy.

Third, the paper emphasizes a developmental role for the state<sup>2</sup>. However, we should underscore the notion of a developmental state, which is both autonomous and embedded at the same time, as opposed to a predatory state (Evans, 1995). According to Evans, corporate coherence (meritocracy, long-term career opportunities, etc) gives the state a sense of autonomy. However, this autonomy does not disengage the social ties that connect the state to society; thus it is embedded in positive societal goals (Evans, 1995, p. 12). The developmental state, furthermore, is not captured by special interest groups and individuals. A reasonable proposition to make is a developmental state is best positioned to pursue selective industrial policy – as outlined by Lall (2004) and Chang (2004) – instead of a predatory state<sup>3</sup>. According to Lall (2004, p. 76) industrial policy is both functional and selective intervention. Functional intervention is not aimed at any specific industry (e.g. government funded research and development), while selective industrial policy (see Chang 2004, p. 112) aims at pointing out particular industries and working along with the private sector. The idea that industrial policy could be functional and selective is the spirit of the definition on which later arguments in this article are premised.

Fourth, the paper postulates that the “binding constraint” is investment demand rather than savings supply. A mark-up loan rate above the competitive natural rate – which equilibrates savings and investment decisions in a loanable funds model – is proposed as the mechanism which constrains investment demand. In other words, financial liberalization creates oligopolistic loan markets because entry barriers are pervasive in developing economies. Therefore, there is no inherent tendency for the loan rate to converge to the natural rate as this rate is a mark-up over the marginal cost of production in banking. This banking sector’s marginal cost, moreover, is a function of the cost structures in the non-banking sectors of the economy. Therefore, if industrial policy can minimize these non-bank costs of production by enhancing overall non-bank sector efficiency, the loan rate would be reduced thus the investment constraint is eased.

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<sup>1</sup> The issue of oligopolistic foreign exchange and government security markets is the subject of further research.

<sup>2</sup> See Shapiro and Taylor (1990) for theoretical arguments outlining why the state should articulate industrial policy.

<sup>3</sup> See Evans (1995) for the definition of a predatory state.

When investment demand is the binding constraint financial sector development by its self does not lead to higher economic growth. Worrell (1982) has argued that financial development is most effective when savings is the constraint. On the other hand, the model that is presented in section III has savings as endogenous to investment demand. Investment engenders economic growth, which increases the society's savings levels. Industrial policy, therefore, reduces the rate of interest not through repression by government mandate, but via efficiency improvements throughout the non-bank sector. Thus investment demand is stimulated, growth is augmented, and this savings adjusts endogenously.

Fifth, in our model commercial banks substitute low productivity excess liquidity for loans at some threshold loan rate. The threshold rate is the minimum mark-up rate, which constrains investment demand. Khemraj (2008) provides empirical support in favour of this hypothesis. It is this threshold loan rate, which is the outcome of oligopolistic pricing power<sup>4</sup>, which causes monetary policy to be ineffective in the loan market when the mark-up rate is binding. However, when the mark-up rate is non-binding monetary policy can engender a substitution between interest earning credit and low productivity excess liquidity. These substitutions, however, occur at interest rates significantly above zero (see Khemraj 2008).

The paper takes the following structure. Section II presents a brief review of the evolution of Caribbean economic policy since publication of Lewis' 1950 article. Section III presents a theoretical analysis of the shift from financial repression to liberalization. This section proposes reasons for the interest rate being a mark-up rate that is beyond the natural rate. Given the natural entry barriers into the financial sector, the natural rate is unattainable unless there is some industrial strategy which enhances the efficiency of the economy and pushes the mark-up rate towards the natural rate, which clears savings and investment decisions. Section IV demonstrates the connection between monetary stabilization and industrial policy. Section V concludes.

## II) BRIEF REVIEW OF CARIBBEAN ECONOMIC POLICY

Lewis' 1950 paper on Caribbean industrialization outlined a clear vision for economic policy:

...industrialization of a new country cannot just be left to the ordinary forces of the market, but demands very positive and very intelligent actions by the governments. (Lewis 1950, p. 36)

These insights imply an important role for governments in economic development. In other words, it implies the role of a developmental state. Lewis argued for a balanced role among private domestic enterprise, foreign capital and the state in economic development. In his famous 1954 article – often cited as the founding article of development economics (see Kirkpatrick and Barrientos 2004) – Lewis outlined the

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<sup>4</sup> See Moore and Craigwell (2002) for empirical evidence suggesting that oligopolistic market power determines the mark-up of the loan rate above the deposit rate.

mechanism for industrialization with unlimited supplies of labour. He postulated that surplus labour economies would be characterized by low marginal productivity of labour in the subsistence sector. Thus a new high productivity modern sector is needed to increase the society's output per head. The ideas of this article have been presented as the Lewis model. The model not only gives a growth mechanism (rooted in capital accumulation), but also a notion of structural change, which would require totally new high productivity sectors. These new sectors would require the state and the market working together (with foreign multinationals) within the confines of a smart, creative and transparent industrial policy framework.

Emphasizing industrialization as Lewis' policy legacy has its perils. For instance, the plantation school economists have been quite cynical of Lewis' view that industrialization would require courting MNCs and a suppression of real wages to productivity growth (see Girvan 2005). However, we should note that the contribution of MNCs to development is not a black and white issue. There are significant grey portions. Take for instance Dupuy (1991) essay on the application of the Lewis model to Haiti. Dupuy noted that attempts to encourage foreign capital into manufacturing (via Export Processing Zones) in Haiti did not lead to the higher living standards and employment creation. This outcome, according to Dupuy, resulted from the presence of a predatory state and failure of foreign manufacturing to form backward linkages with domestic agriculture. Moreover, MNCs seem to work best when a developmental state has a clear vision of what role foreign corporations will play in development. Lall (2004) underscores this point by explaining how South Korea, Singapore, Hong Kong and Taiwan had different roles and objectives for MNCs – some liberal and yet some quite restrictive.

Highlighting the importance of agriculture in development, Figueroa (2004) warns us against the conclusion that the Lewis structural transformation mechanism gives precedence to industrialization. According to Figueroa, industrialization in the Lewis framework, by necessity, implies a symbiotic role for industry and agriculture, especially in relation to domestic food production.

We can now move on to discussing the evolution of Caribbean economic policy over the past four decades. In an early paper, Best and McIntyre (1961) argued for real output growth as the primary focus of monetary policy. They saw macro objectives such as “the maintenance of the external value of the currency, the guarding of the external reserve position, and the stabilizing of the internal value of money must necessarily be subordinate” to the objective of productive investment and growth (Best and McIntyre 1961, p. 353). Thomas (1972) also envisaged a “developmental bias” for Caribbean central banks. Writing in 1972, Thomas noted that the developmental performance of commercial banks has been poor. Then the banks would have largely reflected the Colonial legacy investment patterns. Therefore, the role of the central bank is to ensure that credit is directed to key productive sectors.

Bourne (1989) presented econometric evidence which links balance of payments outcomes to growth in the money supply in several Caribbean economies. Using the

methodology of the monetary approach to the balance of payments, Bourne argued that monetary growth in excess of economic growth would engender balance of payments crisis, exchange rate pressures and the loss of foreign reserves. Foreign reserves, moreover, is required for growth-promoting imports. Therefore, he concluded that there is a “prominent role for monetary policy in the pursuit of balance of payments and price stability objectives” (Bourne 1989, p. 285). Moreover, “economic growth is not sustainable in the absence of strong balance of payments performance” (ibid, p. 284).

By 1990 Caribbean economic policy would be couched within the general global de-regulation agenda. Financial liberalization would soon become the fundamental motivator of economic policy. In particular, interest rates were de-repressed, directed credit programmes were dismantled, a flexible exchange rate was adopted in Guyana, Jamaica and Trinidad and Tobago, exchange control restrictions were removed, banks were privatized, and market-based monetary policy was adopted (see Khemraj 2007; El Hadj 1997; Peart 1995). This new policy agenda is largely determined by consultations with major bilateral donors and the international financial institutions. Delivering the first Adlith Brown Memorial Lecture in 1986, Blackman was quite critical of the new policy agenda noting that:

...developing countries had merely to trim their deficits, devalue their currencies, and hit a monetary target and, presto, growth would follow. The notion that economic development should be achieved through pure market strategy was carried to its logical conclusion in Chile by General Pinochet” (Blackman 1986, p. 537).

In the backdrop of this policy shift, however, Pantin (1995) argued for industrial policy:

Caribbean economies will not be able to achieve desirable economic goals unless there is an active, production-oriented State utilizing an appropriate variant of industrial policy. (Pantin 1995, p. 546)

Noting the smallness and the highly open nature (being price takers in global markets) of Caribbean economies, Pantin proffers the critical question: “what domestic policies can provide both relative insulation from external shocks, and also optimize income generating opportunities?” The author also notes that the economies, given their rentier nature, are not constrained by savings that tend to be allocated in favour of consumption rather than investment. As it relates to Pantin’s fundamental question, we hope to make a contribution in that regard by proposing a theoretical framework which highlights that investment demand rather than savings supply is the binding constraint.

### III) FROM FINANCIAL REPRESSION TO OLIGOPOLY STAGNATION

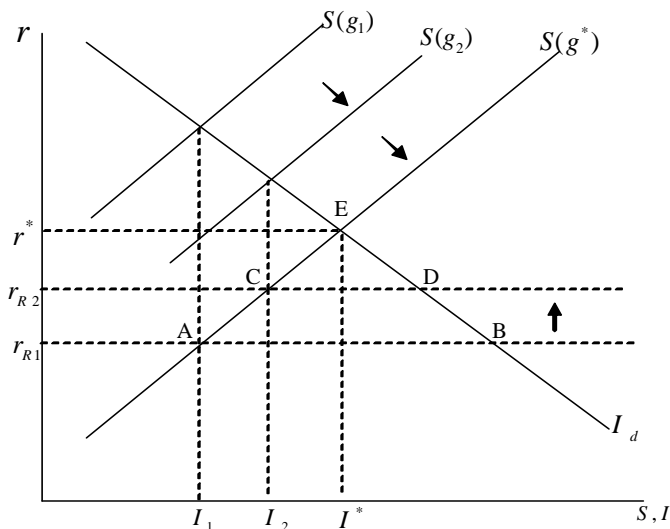
For completeness the classic model, popularized by Maxwell Fry, explaining financial repression is presented in figure 1. This is a replication of the model presented

in Fry (1989)<sup>5</sup>. Savings ( $S$ ) is a positive function of the real interest rate ( $r$ ) and the rate of growth of the economy ( $g$ ). Equation 1 implies that the savings function shifts out as the rate of growth increases (note  $g^* > g_2 > g_1$ ). Equation 2 represents investment demand ( $I_d$ ), which is inversely related to the interest rate. We add a productivity/technology variable,  $T$ , which increases demand for investment and shifts out the investment demand curve. This variable comes into play as the cost structure of the non-bank sector diminishes owing to productivity and technological improvements. Point  $E$  is an equilibrium which balances the forces of productivity and thrift; that is the society's desired savings (the net supply of funds) and desired investment (the net demand for funds) are in balance. The rate of interest, rate of growth and investment resulting at this equilibrium are, respectively,  $r^*$ ,  $g^*$  and  $I^*$ .

$$S(r, g) \quad S'(r) > 0, S'(g) > 0 \quad (1)$$

$$I_d(r, T) \quad I'_d(r) < 0, I'_d(T) > 0 \quad (2)$$

Figure 1, Government financial repression



Financial repression, however, results in the real interest rate being mandated by government below the equilibrium. At the repressed deposit interest rate,  $r_{R1}$ , the investment level is  $I_1$  because the level of savings forthcoming is reduced to that level. The rate of economic growth is  $g_1$  and the loan rate charged by banks for the scarce investment funds is  $r_3$ . Investment demand given by  $AB$  is unsatisfied.

<sup>5</sup> For a comprehensive discussion of financial repression and liberalization see Gibson and Tsakalotos (1994). Also, see Arestis and Demetriades (1999) for a discussion of some of the underlying theoretical assumptions of financial liberalization.

Easing financial repression by increasing the real rate to  $r_{r2}$  increases savings and investment to  $I_2$  and therefore closes the gap of unfulfilled investment from AB to CD. The higher interest rate leads to investment projects with higher rates of return being financed; thus economic growth increases to  $g_2$  and the savings function shifts out to  $s(g_2)$ . Complete liberalization increases the rate further (until it reaches point E), eliminates the gap of unsatisfied investment demand, and increases growth to  $g^*$  because higher quality investments are financed at the higher rate. Embedding financial development – often implied to accompany financial liberalization – within endogenous growth models also leads to similar predictions through different and similar channels as the classic McKinnon-Shaw framework (see Arestis and Demetriades 1999, p. 443).

An important issue, however, is whether in a post-liberalized environment the rate of interest reaches equilibrium at a point such as  $E$ . It is very likely that the competitive market mechanism is circumvented by the pricing power of financial institutions, which in underdeveloped economies mainly involve the pricing power of commercial banks. In the post-liberalized era commercial banks have typically been privatized and other forms of government repression such as the direction of credit to specific firms or industries has been dismantled. Therefore, oligopolistic pricing of the loan rate by private profit-maximizing commercial banks is a real possibility. Banks typically possess significant influence over the spread between the loan rate and the deposit rate; this spread, moreover, has widened in the post-liberalized era and it has persisted in many economies<sup>6</sup> Therefore, it is important to incorporate this important stylized fact into our loanable funds model.

The mark-up loan rate is given by equation 3, which can be derived from a concave profit function of the representative bank; a similar derivation is obtained by Khemraj (2008) who uses the assumption of a Cournot oligopoly banking model. Equation 3 implies that a profit maximizing bank will mark up the loan rate ( $r_L$ ) over the marginal cost of production ( $MC$ ), the marginal cost of screening and monitoring ( $MC_{S\&M}$ ), and the rate of return on a safe foreign asset ( $r_F$ ). The mark-up factor ( $m$ ) is determined by various motivations and preferences of the individual bank.

$$r_L(1 + m) = r_F + MC + MC_{S\&M} \quad (3)$$

The foreign interest rate (for example the LIBOR or the US Treasury bill rate) is used as the benchmark rate for various reasons. First, commercial banks possess substantial bidding power in the local market; thus they do not take this rate as given as in the classic banking model<sup>7</sup>. Second, the deposit rate is not the benchmark because it is also determined by oligopolistic forces. Third, foreign assets form an important component of commercial banks' asset portfolio; therefore, a foreign interest rate ought

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<sup>6</sup> See Moore and Craigwell (2002) and Chirwa and Mlachila (2004).

<sup>7</sup> Usually when the model is applied to advanced economies, particularly the United States, banks are assumed to be price takers in the Treasury bill market (see Slovin and Sushka, 1983).

to act as the benchmark when the classic banking model is applied to small open underdeveloped economies.

Since the equilibrium interest rate at  $E$ , which equilibrates desired savings and investment positions, can be interpreted as the natural rate, why would the actual rate overshoot the natural rate? We have already seen that the actual interest rate can be repressed through government mandate. However, it is not recognized in the literature that the rate can be stuck indefinitely above the equilibrium natural rate.

This paper proffers that natural barriers to entry preclude the commercial banking sector from adjusting actual interest rate to the long-term equilibrium natural rate. Banking requires not only substantial up front capital, but also significant fixed costs. These costs can be substantial in small economies in which it is not possible to stretch the average fixed costs over a very large loan base. In addition, the costs specific to the credit market – associated with screening and monitoring good from bad borrowers – can also be very high. Thus it should not be a surprise that a de-repressed interest rate will be very high and does not necessarily have to adjust to equilibrium.

Furthermore, financial liberalization is accompanied by financial globalization. Given the high profit opportunities owing to high loan-deposit rate spread, why would foreign banks refuse to enter developing countries and soak up the profit opportunities? Entry barriers again play a key role in restricting entry. If the up front costs incurred today are not compensated by the risk adjusted discounted future stream of incomes, it makes no sense to enter<sup>8</sup>. Foreign banks are more likely, therefore, to purchase an existing bank (brownfield investment) rather than set up a new entity (greenfield investment) and risk further fragmenting market share and pushing up  $MC + MC_{S\&M}$ . In addition, the idea that the rate can be above equilibrium is not far-fetched; for instance several observers, especially Dani Rodrik and his co-authors, have argued that investment demand is the binding constraint in many developing countries<sup>9</sup>. This paper proposes the mechanism of a mark-up loan rate as driving the investment demand constraint.

This information is summarized in figure 2. Upon removing all government financial repression, the mark-up loan rate is placed at  $r_{Ll}^{\min}$  above the natural rate  $r^*$ . The rate of economic growth associated with this credit rate is  $g_1$ . This growth rate can persist indefinitely and there is no inherent tendency for economic growth to increase to  $g_2$  and  $g^*$  – unless it is shocked positively from conditions outside of finance<sup>10</sup> – and thus shifting out the savings function to  $S(g_2)$  and  $S(g^*)$ . One can therefore say that the

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<sup>8</sup> This point was made by Prasad, Rajan and Subramanian (2007) as they sought to explain the capital paradox.

<sup>9</sup> See Hausmann, Rodrik and Velasco (2006) and Rodrik and Subramanian (2008).

<sup>10</sup> This issue is beyond the scope of this article.

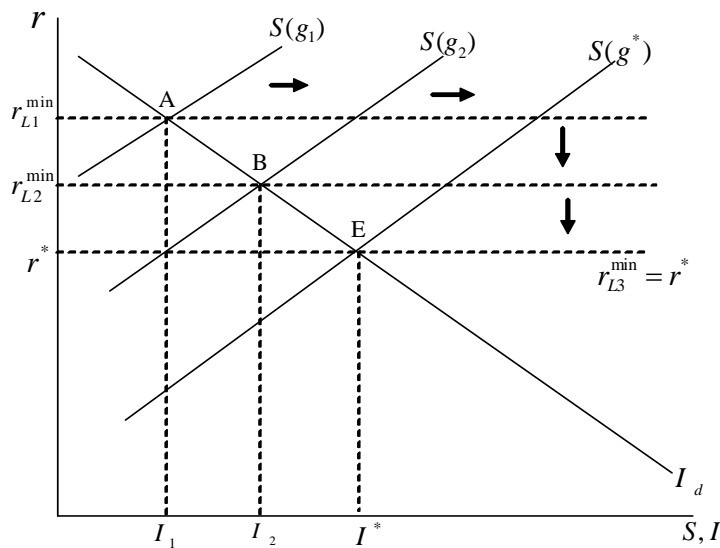


finance-growth nexus is impeded in such a situation. Therefore, our stylized economy has moved from a state of government financial repression to private oligopoly bank stagnation.

### The Role of Industrial Policy

Prescribing economic policy is never straightforward since it is essentially context specific. However, figure 2 provides some insights into the possible focus of policy. It is important, however, to elucidate the nature of the marginal cost of banking ( $MC$ ). The  $MC$  is not specific to the banking sector but rather is dependent on production costs and prices in other sectors of the economy and certainly events abroad. For instance, banks

Figure 2, Private oligopoly stagnation



are required to compete in a national market for skilled labour; they must source electricity and other public utilities from a national grid; and they must invest heavily on private security in a high crime environment. And in a geographically spacious country like Guyana where the relatively small population is scattered over a wide area, setting up rural bank branches require a substantial up front fixed investment. Therefore, there might not be a large enough rural business network over which to spread the fixed costs of setting up a new rural branch.

The point here is the cost and production structure in other parts of the economy prevents the minimum mark-up rate from adjusting to the natural rate. Also the geography and geographical settlement of business opportunities prevent the banks from spreading thin the high fixed investment costs. Private profit-maximizing banks with market power will tend to mark up the loan rate above these costs.

Our results, therefore, suggest two possibilities for industrial policy as it relates to enhancing the role of finance in development. The first relates to policies that reduce the

marginal cost of banking by improving the overall economy's money cost of production. These policies shift downwards the minimum rate of interest towards the economy's natural rate. Financial intermediation is augmented and economic growth picks up as the savings function shifts along the unchanged investment demand curve. One policy would be to have efficient and reasonably priced electricity and other public utilities.

Therefore, one can say that the role of finance in development – although critical – is subservient and endogenous to industrial policy. The finance-growth nexus remains impeded for as long the mark-up rate stays above the equilibrium. In such a situation investment demand is constrained by high interest rates, which additionally reflect the overall inefficiencies of the economy. In an investment demand constrained economy one can expect a banking sector – the most important financial institutions in the Caribbean – to hold substantial quantities of excess liquidity, government securities and foreign assets<sup>11</sup>.

The second role for industrial policy would be to stimulate the demand for investment and thus shift out the investment demand curve. This typically involves enhancing the economy's productivity and thus activating the productivity variable  $T$ . It should be noted, however, that the effects of the two policy sets are not mutually exclusive. As the productivity of the non-bank sector increases the marginal cost of banking will fall. Hence, shifting out the investment demand curve also shifts down the minimum mark-up loan rate. The savings function adjusts endogenously in each case.

The second policy role could be accomplished by publicly funded research and development, refocusing technical education at the university level and other tertiary institutions. It could also include a Diaspora policy to mobilize technical skills from citizens living abroad. These policies could involve selective industrial policy which aims “at particular industries (and firms) to achieve outcomes that are perceived by the state to be efficient for the economy as a whole<sup>12</sup>.” It makes little sense, for instance, that Guyana does not have manufacturing industries producing things such as pasteurized milk, cheese and butter. It does not seem wise for Guyana to import chicken and eggs, as it currently does, from advanced economies. Static comparative advantage theory, of course, would tend to suggest that Guyana does not have a comparative advantage in these fundamental food items and as such it should import them. However, comparative advantage is not static but dynamic (Reinert 2007). New production activities can result from industrial policy that promotes “self discovery.” Although coming from different theoretical perspectives, two recent books emphasize this point – see Reinert (2007, chapter 3) and Rodrik (2007, chapter 4). Moreover, Evans (1995) notes that static comparative advantage can place a country in a low position in the global hierarchy of products. This means, as Reinert argues, that a country could specialize in being poor while the advanced economies specialize in being rich.

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<sup>11</sup> Khemraj (2008) reports excess liquidity for several Caribbean and African economies.

<sup>12</sup> This quote is taken from Chang (2004, p. 112). Moreover, Chang's 2004 book presents theoretical and political economy arguments in favour of industrial policy.

In a country such as Guyana – which imports a substantial percentage of its food requirements – where the private sector seems unwilling to pursue these obvious production activities, the onus falls on the state to get it done. The state can provide the initial impetus and then sell the entities to private investors. Or the state can run them indefinitely once technocratic business professionals backed by Parliamentary provisions, and not the politically connected, are placed at the helm. These new production activities shift out the investment demand and savings supply curves. However, the specific organization of these entities is beyond the scope of this macro-oriented paper.

#### IV. INDUSTRIAL POLICY AND STABILIZATION

The main plank of stabilization is the issue of money and its relationship to prices and the real sector. This section proposes a model that shows that monetary stabilization and supply-side industrial policy do not necessarily have to conflict with each other. However, the model below demonstrates that a focus only on stabilization – via monetary policy – is likely to have an asymmetric impact on credit conditions and thus real output. Specifically, a monetary expansion along a horizontal bank liquidity preference curve will have no effect on credit conditions. However, a monetary contraction along a downward sloping bank liquidity preference will increase the loan rate and decrease credit<sup>13</sup>.

Before proceeding we must make two assumptions. First, commercial banks have a stable excess liquidity preference curve which is downward sloping and eventually horizontal at a loan rate that is substantially above zero. This assumption is not unrealistic as these relationships were uncovered for several Caribbean and African economies by Khemraj (2008). The assumption, in addition, implies that at some threshold loan interest rate commercial banks view excess liquidity and business loans as perfect substitutes, thus the flat curve. The second assumption, related to the first, proffers that the threshold interest rate is a mark-up rate as depicted by equation 3. The liquidity preference curve, moreover, is flat at this mark-up threshold interest rate. Given these assumptions, we have a mechanism by which to link excess bank liquidity with bank loans to businesses.

The essential ideas are summarized in figure 3, which presents the monetary/financial flow counterpart of the savings and investment given in figures 1 and 2. The right of the vertical axis depicts the demand and supply of loans, primarily business oriented loans. The demand for business loans is given by equation 4. There is an inverse relationship between the minimum rate and business loan demand because an increase in  $r_L^{\min}$  reduces the present value of future streams of business profits and therefore decreases the demand for loans. On the other hand, a reduction in  $r_L^{\min}$  increases

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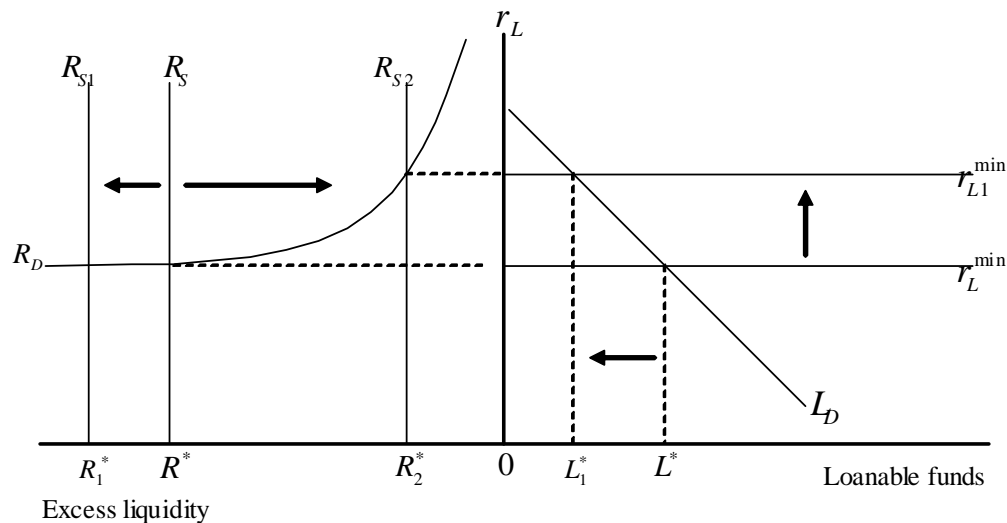
<sup>13</sup> We emphasize commercial banks because they are the most important financial institutions in the Caribbean. They are central in the process of financial intermediation. Therefore, from a methodological standpoint this article incorporates institutions (banks) in determining economic outcomes. It is customary in the literature to use an amorphous money demand function. However, we are more interested in the stability and behaviour of bank liquidity.

the present value and thus the demand for business credit. The productivity variable,  $T$ , increases business profits and therefore shifts out the demand for loans.

$$L_D(r_L^{\min}, T) \quad L'_D(r_L^{\min}) < 0, L'_D(T) > 0 \quad (4)$$

The supply of loans is effectively the minimum rate. The term minimum rate by definition implies banks would not offer credit at a rate below the said threshold. Earlier we have said this rate could be made consistent with profit-maximization. However, why should banks refuse to offer credit at a rate above the mark-up rate? This can be explained by the theory of credit rationing that was proposed by Stiglitz and Weiss (1981). Essentially the rate of interest is not increased above  $r_L^{\min}$  because the expected rate of return would decline owing to the assumption that the probability of default increases. Therefore, the supply of credit, assuming all other factors are constant, is given by the horizontal line at  $r_L^{\min}$ .

Figure 3, Loanable funds and monetary policy



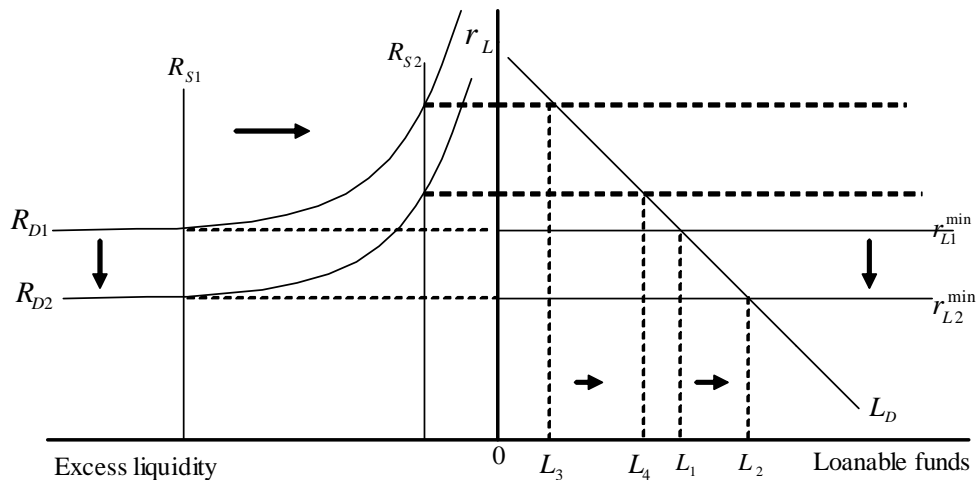
The left of the vertical axis shows the market for bank liquidity. The central bank operates in this market by changing excess liquidity through open market operations<sup>14</sup>. An expansionary policy shifts out the reserve supply curve from  $R_S$  to  $R_{S1}$  along the flat bank liquidity preference curve  $R_D$ . Such expansionary policy does not change the loan rate and alter credit conditions. However, a contraction of monetary policy from  $R_S$  to  $R_{S2}$  increases the threshold rate from  $r_L^{\min}$  to  $r_{L1}^{\min}$  thereby decreasing business credit from  $L^*$  to  $L_1^*$ . Notice, however, that  $r_{L1}^{\min}$  is a short-term deviation of the minimum rate

<sup>14</sup> Several Caribbean central banks have implemented a system of market-based monetary policy. In this system open market operations, at least at a rudimentary level, are used to mop up or inject excess reserves. See Khemraj (2007) for an examination of this form of monetary policy within the context of financial programming in Guyana; and see Peart (1995) for a similar outline for Jamaica.

from the underlying threshold rate. In conclusion, therefore, while market-based monetary policy will tend not to be expansionary along the flat liquidity demand curve, it would tend to contract business credit along the downward sloping segment.

The process described above could continue indefinitely as stabilization policy would tend to operate along a stable bank liquidity preference curve, thus having a deleterious effect on credit and real sector. However, industrial policy would be required to augment financial intermediation. For example, a neutral monetary policy can also result in business credit expansion if the minimum rate could be reduced via industrial policy. Consider figure 4, for instance. Industrial policy reduces the minimum rate and therefore shifts down the entire liquidity preference curve ( $R_{D1}$  to  $R_{D2}$ ), thereby creating a new threshold, which is demonstrated by a movement from  $r_{L1}^{\min}$  to  $r_{L2}^{\min}$ . There is now an expansion of the intermediation of credit from  $L_1$  to  $L_2$ , assuming monetary policy remains at  $R_{S1}$ . Notice, however, a monetary tightening – a movement from  $R_{S1}$  to  $R_{S2}$  – has a smaller effect on credit on the new minimum rate ( $r_{L2}^{\min}$ ) relative to the old one ( $r_{L1}^{\min}$ ). Therefore, we can conclude that reducing the minimum rate via industrial policy dampens the tendency for monetary policy to lead to contraction.

Figure 4, Combining monetary and industrial policy



## V) CONCLUSION

The paper argued that stabilization has taken precedence over production-based policies. We noted that this view goes with philosophy that markets would activate production if only a stable macroeconomic environment prevailed. The philosophy, moreover, holds that financial markets would intermediate the society's savings in an efficient manner searching for production projects with high rates of return. Therefore, financial liberalization, which emphasizes market incentives, is postulated to activate the role of finance in economic growth. The evidence would show that this is not the case in

Guyana and Jamaica, two active participants in the liberalization agenda. The third country, Trinidad and Tobago, achieved significant growth not on its stabilization policies, but because of significant natural resource-based production.

We have argued that the reason for the tepid role of financial liberalization in economic growth has to do with the fact that the financial sector is characterized by significant entry barriers, many of them natural. Therefore, the competitive natural rate is circumvented by an oligopolistic interest rate, which is placed above the natural rate. Thus investment demand is our primary binding constraint. We have therefore moved from a system of government-induced financial repression to private oligopoly bank stagnation.

Overcoming this stagnation would require the intervention of a developmental state pursuing direct industrial policy. Our model suggests two roles for industrial policy. The first relates to policies that reduce the marginal cost of banking by improving the economy's overall money cost of production. These policies shift downwards the minimum mark-up rate of interest towards the economy's natural rate. Financial intermediation is augmented and economic growth picks up as the savings function shifts along the unchanged investment demand curve.

The second role for industrial policy would be to stimulate the demand for investment and thus shift out the investment demand curve. This typically involves enhancing the economy's productivity and thus activating the productivity variable  $T$ . However, we should note that the effects of the two policy sets are not mutually exclusive. As the productivity of the non-bank sector increases the marginal cost of banking will fall. Hence, shifting out the investment demand curve also shifts down the minimum mark-up loan rate. The society's savings adjust endogenously. At this stage, furthermore, the onus falls on the developmental state to set incentive policies that would encourage the investor class to channel those savings at home in productive investments.

If savings is the binding constraint then financial development and market-based monetary policy are insufficient to tackle the investment constraint. Developing new esoteric financial instruments and implementing open market operations are not enough to lead to real sector production takeoff. Monetary policy would tend to operate along a stable and high liquidity preference curve. Therefore, liquidity expansions are not likely to reduce interest rates beyond the mark-up threshold. Industrial policy, on the other hand, is intended to shift down the threshold rate and thus make monetary policy more accommodating. In an investment constrained economy, furthermore, finance is endogenous and subservient to real sector policy and production.

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