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Effects of High Interest Rate on Technology Implementation in Jamaica

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Abstract: *Jamaica has long ago adopted a high interest rate policy, largely through the conditionality of the International Monetary Fund (IMF) programme. The expressed purpose of this was to stem the slide in the value of its currency by "mopping up the liquidity", thus removing any excess money from the economic system that could be used to purchase foreign exchange. The resulting lack of funding hinders technology growth while at the same time technology continues to be progressively responsible for wealth creation worldwide. The means to this wealth creation could be pushed out of the reach of the average Jamaican due to excessive interest rates and high currency exchange rates. This paper examines how these rates have affected the affordability and implementation of technology in Jamaica.*

Keywords: *Interest Rate, Exchange Rate, Technology, Research, Export, Economic Stability, Jamaica*

1. Introduction

In the early nineteen seventies when Jamaica started to feel the impact of increasingly higher oil prices, the solution was to seek financial assistance from international funding agencies. At that time the agencies pointed out that the value of Jamaica's currency was too high for it to benefit from economically priced exports and advised Jamaica to lower its exchange rate and then peg the rate to its economy. Subsequent visits from the lending agencies also led to adjustments in bank interest rates and lending policies as preliminary conditions to the disbursement of new loan funds. A third pre-condition for financial assistance was that Jamaica should liquidate its major assets that incessantly drained its budget. These government-owned assets such as the telephone and electric power companies, and more recently, the national airline, were costing the country through government subsidies that could no longer be afforded. Thirty-one years later, Jamaica is in an even more desperate situation with no assets to either liquidate or generate revenue. Without the financial means to acquire proprietary technology, the visible lack of technological solutions has now become evident.

Capital investment in research is a vehicle for wealth creation through technology acquisition and implementation, but when the very means by which to fund research is severely hampered by high interest rates and the absence of foreign exchange, it is reason for concern. The country continues to be pushed into debt and poverty with minimal funds being used to develop, innovate or acquire proprietary technology or to otherwise fully utilise appropriate technology in the agricultural, manufacturing and services sectors.

2. The Policy of High Interest Rates

Brailsford et al. (2006) studied three Asian countries (namely Thailand, Malaysia and the Philippines) that embarked on a high interest rate programme to protect the value of their currencies. All of these countries returned to normal market rates within one year with stabilised currencies. Brailsford et al. (2006) questioned the use of high interest rate policies to defend the currency, noting that other significant economic consequences can be associated with high interest rates. For example, sharply higher interest rates, if sustained, will lead to a marked slowdown in economic activity. Jamaica has maintained this high interest rate policy since its inception in 1980, a staggering 31-year period.

Ohno et al. (1999) argue that interest rate policies did not seem to have any significant impact on calming collective market psychology and results were disappointing. Gordon (2001) noted that for a long time Jamaica has had a highly regulated economy that needed to be structurally adjusted. A period of economic alterations in the 1980s resulted in the elimination of price controls and a liberalisation of the financial system including the freeing up of the foreign exchange control for a market-based management system. The financial liberalisation, however, was not accompanied by a strengthening of the supervisory capacity of the monetary authorities and this led to serious irregularities in the financial market and worsened the economic

situation.

During this period, minimal investments were made in technological research and development to establish proprietary technology for wealth creation. The fiscal and monetary measures had neither stemmed the slide of the dollar nor eased the pressure on the government coffers. As a result, the economy plummeted.

To make matters worse, Jamaica lost much of its foreign exchange reserves resulting from a massive exodus in the early seventies due to the impending threat of communism (then called democratic socialism). Meeks (1991) noted that by the end of 1976 some US$300 million had left the country and the government was faced with a negative net foreign reserve situation for the first time in its history. Even with a declining economy and a continually sliding dollar, Jamaica has stuck dutifully to its high interest rate policy and to date, has shown no real sign of economic recovery or currency stabilisation.

3. The Effect of the High Interest Rate

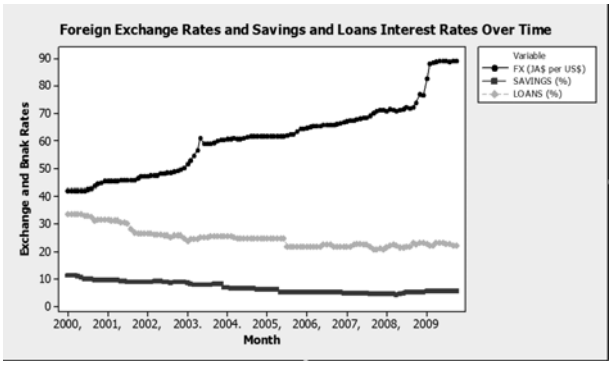
Utami and Inanga (2009) analysed the influence of interest rate differentials on exchange rate changes. They found that interest rate differentials have "positive but no significant influence on changes in exchange rate for the USA, Singapore, and the UK relative to that of Indonesia". They did find a significant negative influence on changes in exchange rates for Japan, however, over a five-year period (2003-2008) and overall results did show that inflation rate differentials do have a significantly positive influence on interest rate differential.

The two primary reasons for maintaining the high interest rate policy are to increase export and to stem the movement of the currency. Over the years what we have seen is a significant decrease in manufactured goods and a clear decline in technology driven manufacturing. Technology is becoming less affordable and accessible due to interest and exchange rate increases. Jamaica no longer manufactures, it imports.

High interest and exchange rates do not favour importations unless a country is unable to produce basic raw materials competitively. As such, over the years the continued decline in the economy has been driven by the continually falling exchange rates.

Traditionally, foreign direct investment (FDI) does not transfer proprietary technology to its host country, but instead, utilises mature technology to reap benefits from low cost labour and huge tax breaks which lead to greater outflows of capital in the form of profits.

A chronological comparison of the Jamaican interest rate with its exchange rate shows a direct inverse relationship (see Figure 1). The Jamaican dollar has shown no real sign of revaluation in the last 31 years, since the inception of the high interest rate policy. The graph shows a falling interest rate since 2000. However, the current interest rate of an average of 24% is still repressive and non-productive. It is observed that slight downward movements in interest rates generally lead to corresponding increases in the foreign exchange rates. This may seem to argue well for the imposition of these high interest rates to stem the rise in foreign exchange rates. However, higher rates also mean a decline in the ability to invest in and to afford technology to drive wealth creation. High rates also benefit speculators with free capital to profit from the movement of the dollar.



Data based on Historical Exchange Rates: Jamaica Dollar vs. United States Dollar: December 1971 - September 2010.

Figure 1. Foreign Exchange Rates and Savings, and Loans Interest Rates over time
Source: Bank of Jamaica (2010)

As the country pushes more towards services and away from agriculture and manufacturing, it has found that services (including tourism), demand large amounts of foreign exchange. Local services are built on imported consumables that demand foreign capital. This leads to continued pressure on the exchange rate without earnings from technology to support it.

Jamaica faces the challenges of economy of scale. It is a very small country and extremely vulnerable to external events, such as natural disasters and first world depressions, which can directly impact national income and impede the economic growth process. Meanwhile, in the rest of the world, technology continues to be the catalyst for wealth creation through the establishment of exports. Proprietary technology is important to economic stability or at minimum a country must be able to afford technology licenses. Even the services sector needs technology to operate competitively. Without technology, it is difficult to avoid constraints to economic growth. Blavy (2006) argues that as the real effective exchange rate appreciates and labour costs increase substantially, competitiveness will decline. Figure 2 shows Jamaica's inflation rates since 2003. Real exchange rate movements are commonly used to measure competitiveness. In Jamaica, the real effective exchange rate appreciated by more than 35 per cent from 1990 to 2001 leading to a decline in external competitiveness (Blavy, 2006).

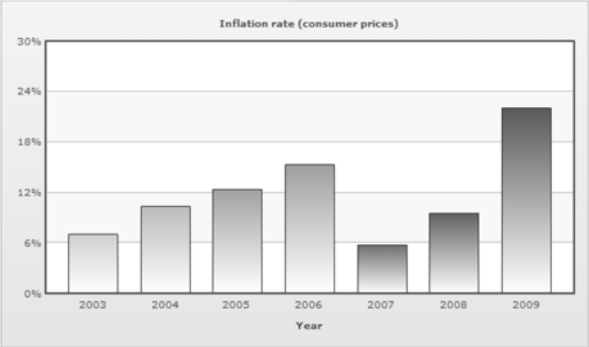


Figure 2. Inflation rate (consumer prices) 22% (2009 est.)
Source: CIA (2009)

As an illustration of its impact, The World Bank (2003) reports a 50 per cent decline in Jamaica's market share of world merchandise. The private sector, in particular small domestic producers, has had minimal access to capital given the limited scope of the financial sector. The government sector is the largest borrower and often leaves very little in the financial system for commercial use. The small farmers suffer the most since there is no system in place to buffer their very vulnerable assets. To make matters worse, the government continues to offer bonds at rates that compete with the most reasonable returns on investments from the commercial sector making it attractive to investors and without the risks normally associated with commercial investment. Many proprietors closed their factories and invested the cash in government bonds known as "easy money".

Continuing a policy of debt financing without a firm, feasible technological plan is not the economic solution for Jamaica. The public and private sectors have reached their breaking point. Personal income tax rates are already above 40% and consumption taxes are as high as 25%. Harsher tax measures are not the answer. This will only serve to further impede the creativity and innovativeness of the country and its people.

The economic measures imposed by the IMF are to prevent spending and to control the economy at a manageable level rather than to direct spending in ways that can improve Jamaica's financial position through entrepreneurship and research towards proprietary technology and wealth creation. The country is in a dilemma. After years along this economic track, the country's high interest rates and high exchange rates, in a financially starved climate, can no longer support the necessary infrastructure to create entrepreneurial wealth. There is no evidence that restrictive internal monetary measures have led to an improvement in Jamaica's economy. The better way to improve standard of living is through increased export; technology being the instrumental resource that can best create exports. Without modern technological means, the situation is dismal.

Nurse (2007) explains durables and diffusers as dynamic goods with high technology content and the potential for increasing value, exports and links to the world economy. Figure 3 compares the CARICOM and Central American export countries from 1970 to 2003. Nurse (2007) argues that Jamaica has maintained a high dependence on traditional low value-added, low technology exports and thus has experienced limited diversification over the last three decades. Jamaica has also under-performed relative to other economies in the region such as Costa Rica and Mexico.

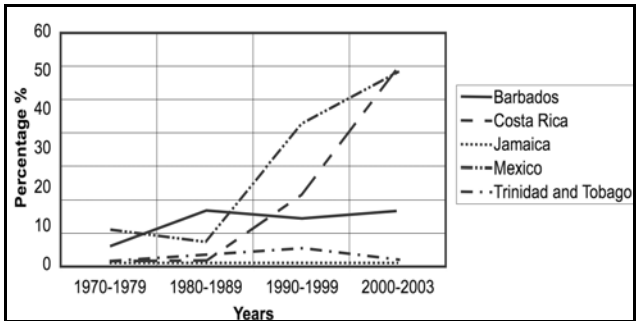


Figure 3. Exports of durables and diffusers of technical progress as a percentage of total exports to the rest of the world selected
Sources: UNECLAC (2006a, b); Nurse (2007)

Caribbean countries invest little in research and development (R&D). Throughout the region, R&D expenditures are estimated to be an average of 0.13% of GDP. This level of investment is considered extremely low by developing countries' standards (Nurse 2007).

One good indicator of a country's research efforts and thus the amount of proprietary technology it develops is the number of patents it registers annually. Figure 4 shows a meagre amount by Jamaica and a total deficiency since 1997. Between 1965 and 2006 Jamaica registered ninety (90) patents in the USA (bettered only by Bahamas (378), Cuba (162) and Bermuda (147) of a total of 1,333 for the entire region).

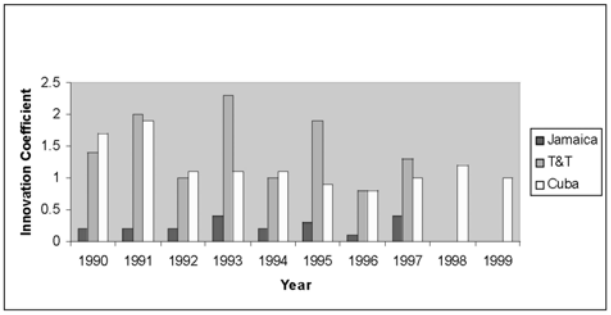


Figure 4. Innovation Coefficients in the Caribbean (Patent applications by residents/100,000 inhabitants)
Sources: UNCTAD (2006); Nurse (2007)

Caribbean patent registration is very low in relative terms when the whole region is compared with Singapore, for example. Singapore like many Caribbean territories had patent registration in the single digit numbers in the early period, 1965-1969, with small increases in the 1970s to 52 and up to 144 in the 1980s. Singapore's growth in patent registration occurs during the period 1990 -1999 (1755) and 2000-2006 when patent registration tripled to a total of 5,937 (see Figure 5).

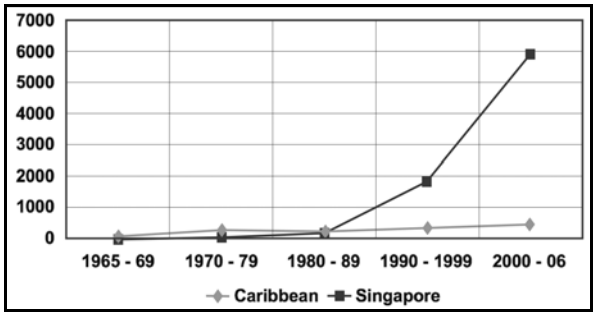


Figure 5. Utility Patent Registration by Caribbean countries and Singapore in the United States, 1965-2006
Sources: USPTO (2007); Nurse (2007)

Jamaica may have a long way to go in implementing technological solutions and realising the economic benefits but it is important that the need for such solutions be recognised. It is not enough just to make plans; funds must be put in place to materialise these plans and to start Jamaica on the road to economic recovery and growth.

4. Discussions

Jamaica is in a serious predicament with an unmanageably large negative balance of payment, minimal assets, high taxes, high interest rates, a weak currency and no operating capital. Proprietary technology is the key to wealth creation and economic stability. The high interest rate policy that Jamaica implemented 31 years ago has not been successful in stabilising the currency and the economy. Instead it has completely "mopped up the liquidity" and thus adversely affected its ability to competitively earn foreign exchange through manufacturing and agriculture. Jamaica has fallen into a state of economic depression and needs an immediate solution.

Under the high interest rate regime, Jamaica has shown little or no sign that this policy has been of any benefit. The expressed purpose of the high interest rate policy was to stem the fall of the exchange rate. There is no evidence at all that this has worked. What has resulted from the combination of high interest rates and high exchange rates is the depletion of government and private sector funds which could have been used to create technological opportunities. Research and product development are almost non-existent and the supplies of basic raw materials in the country are mainly from imports. Jamaica must recognise the urgency of the situation and begin to harness its expertise towards proprietary technology.

The services sector is important and continues to earn for Jamaica but the country must begin to replace the excessive raw material imports with locally produced goods.

On the other hand, as Jamaicans utilise their ingenuity and resourcefulness, they need only the right catalytic opportunities to spur Jamaica in the right direction towards economic recovery. Without technology Jamaica will continue down the path of economic disaster. Wealth begets wealth and any sustained movement in the right direction will eventually lead to economic success. The question then is how to turn the country around. The answer is Technology.

5. Conclusion and Recommendations

Jamaica's economic situation is dismal, to say the least. Years of technological neglect coupled with repressive interest rates and continuously downward spiralling exchange rates have left the country in a state of financial paralysis. Recovery seems insurmountable. High yielding government instruments create an "easy money" route that does not make investments in technology-based industries worthwhile or attractive.

At the same time, Jamaica must become more creative in increasing its line of exportable commercial products and services and begin to earn capital to meet its debt obligations and social responsibilities. To this end, Jamaica must provide resources for technological development and agricultural modernisation in an effort to improve efficiency, increase supply and ameliorate quality, thereby becoming more competitive on the world market.

High interest rates are not the way to improve standard of living and create wealth; these can only be achieved through increased export which is catalysed through access to capital. Other countries faced with similar economic crises have managed to improve their situation without the use of high interest rates but rather through strategic investments in technology.

Since high interest rates have not been proven effective in controlling the economy and have, instead, stifled the business sector, it is full time to revisit this policy and seek to strategically replace it with activities that build commerce and increase exports. The economic system must reward those who create exports, not those who hoard large amounts of capital, speculate on the currency and invest in "easy money". Only through increased technology driven exports can Jamaica's economic situation be improved.

Jamaica must urgently seek to put in place technological solutions that can create opportunities and generate wealth. Proprietary research and practical

implementation of technology leading to increased exports are Jamaica's only chance. It is important that the opportunities are holistic, meaning that an export opportunity must not only have the product development input, but must also have the market creation and sustenance output. Along with these, Jamaica must establish the know-how and the means to create the process that will continuously improve the development-to-export system.

Affordability of the means to develop and implement these plans may need to come through special international loans or grants that can create the opportunities the country needs. The development or activation of research centres concentrating on practical, "North Pole" (focused) research is critical since we must begin to create opportunities and compete based on technology.

Recovery may be difficult but it is not impossible. Jamaica has to develop, acquire and utilise the correct technological tools necessary to create exports as the product and process development to go hand in hand. Jamaica also has to create increased demands and develop the market to accept its products through improved quality and wider product variety. The country should opt to engage itself as a single business force, rather than as several disjointed companies, to undertake these ventures. Only through technological means will Jamaica grow toward wealth creation.

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