Growth Diagnostic: Belize

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Prepared for the Inter-American Development Bank

December 2007

Executive Summary

Belize's economic history shows marked periods of growth accelerations and recessions. There have been two such expansions and collapses in the past two decades, with disturbingly similar features. While not always initiated by public spending, these booms quickly became public-investment led, until ballooning budget, trade, and current account deficits and the resulting shrinking reserves and growing debt required home-grown adjustment programs. The huge cuts in public investment and sharp increases in reserve requirements created marked recessions. In addition, the second acceleration happened after a significant collapse in private savings, and ended up creating a huge debt overhang which has eliminated public savings. As a consequence, Belize is a country with a low savings, little access to international finance, and an extremely high domestic cost of finance. Access to finance is the binding constraint to economic growth.

We show that other potential constraints are not binding. Returns to education are low, and there is little to no infrastructure congestion, suggesting that although Belize is a structurally high-cost country, lacking complementary factors of production are not holding back growth. Furthermore, tax, inflation, exchange rate stability, and law and order do not seem to restrict investment through lowering appropriability. Finally, the country is not being held back by a lack of self-discovery. Although the movement to new export goods is critical for Belize's growth, this process is being hindered by the cost and availability of finance, both public and private.

The appropriate policy stance is therefore to institutionalize fiscal discipline and gradually reduce the cost of credit. Given that low public savings are presently the result of expensive debt service, and also that foreign debt has created barriers to foreign borrowing and a heightened tax on financial intermediation which are key contributors to the high cost of finance, fiscal sustainability is key for drawing down the cost of finance in Belize. Reforms to prevent a lack of fiscal discipline in the future, particularly surrounding political cycles, are critical to end the past two decade's 'stop-and-go' growth pattern. Finally, the government must address the rapidly rising implicit tax expenditure on investment promotion, as well as the fall in the tax take.

But these reductions in the domestic cost of finance will, as best, be gradual given the size of the debt. In the meantime, there is a need for public investment in areas such as public safety, road maintenance, and rural airports that if ignored, could have deleterious effects on long-term growth. Creative ways to finance such productivity-enhancing investments, which would not increase publicly-guaranteed debt, must be pursued. In addition, the industrial strategy of the country must adapt to the current financial constraints and focus on attracting investors who aren't subject to the high domestic interest rate, namely foreign investors. The current industrial strategy is not consistent with Belize's constraints to growth.

Long-Term Growth Dynamics in Belize

Belize's long-term growth performance has been comparatively good. It is not clear what comparator group is relevant, given Belize's status as both a Caribbean and Central American country. Compared to its Central American counterparts, Belize has been a growth star, starting 1960 as the second-poorest country in the region, but now among the 'top-tier' with a GDP per capita near that of Costa Rica and Panama. Moreover, much of this growth was achieved after independence. Among its Caribbean peers, however, Belize's performance has been average, and it has not been able to close the gap with the better performing economies in the region.

Figure 1
GDP per capita (logs), 2000 USD
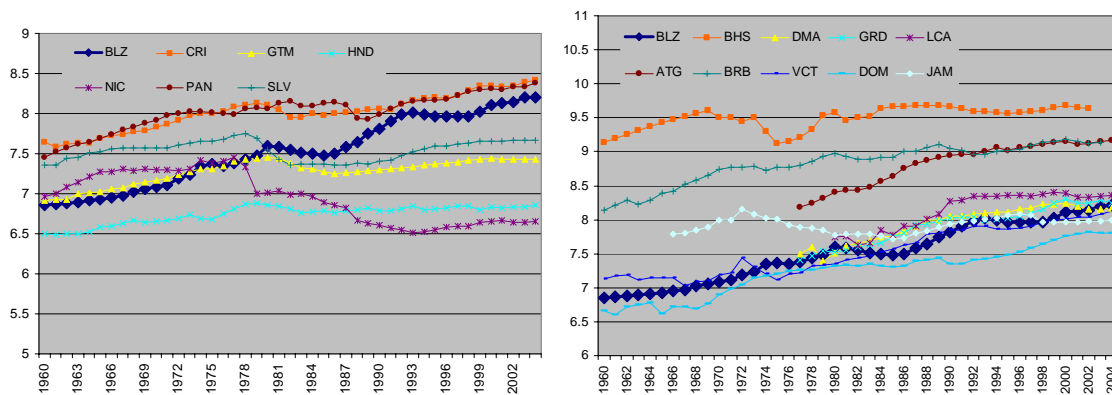
Source: World Bank WDI

The dynamics of output per capita in Belize since independence show very marked periods of growth acceleration and recession. There was a recession after independence until 1985, when the growth rate averaged -2.2% per year, until 1986 when the country entered a relatively sustained growth acceleration: from 1986 to 1993, output per capita rose by 7% per annum on average. This acceleration was followed by a four-year economic contraction, from 1994 to 1998, with an average annual growth rate of -1.1%. The country entered a second growth acceleration in 1999, but this acceleration was weaker (average annual growth of 5%) and also shorter than the first. By the end of 2003, output per capita began to fall, and for the past four years the economy has been in a period of stagnation, with output growth barely keeping up with population growth.

Figure 2
Growth Rate of GDP per capita
Including Post-Dean Projection and Period Averages
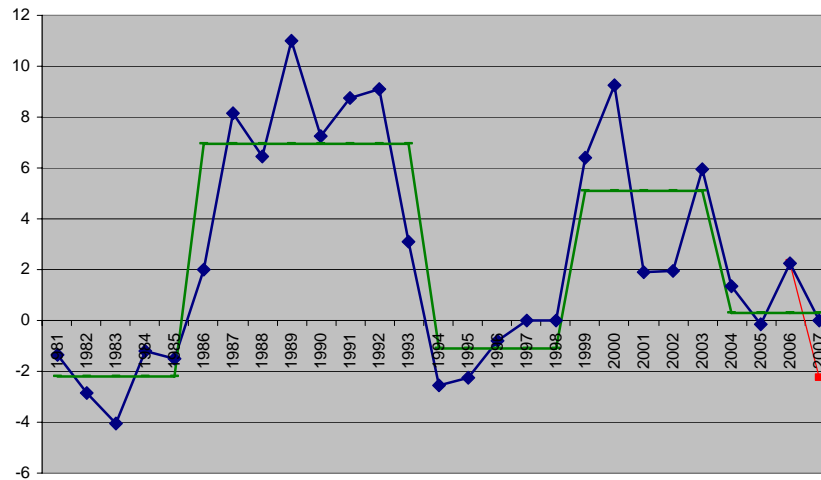
Source: 1981-2005, World Bank WDI. 2006 value using Government of Belize data, 2007 value using Government of Belize estimate. 2007 value incorporating the effects of hurricane Dean (red) using IDB (2007).

The timing of these periods of boom and decline will be very important for the growth diagnostic. By definition, if a constraint is binding then changes in the binding constraint should have some growth consequence. Conversely, it is difficult to argue that a constraint is binding if it has changed markedly in the recent past with no growth effect. We will therefore use these marked periods to identify the binding constraints to Belize's growth.

What were the general events surrounding these periods of accelerated growth and decline? The recession at the point of independence was preceded by an unprecedented export boom, which was collapsing at the same time that independence was achieved. The figure below shows that in both 1975 and 1980, exports per capita peaked to almost triple their current levels. Today, merchandise exports per capita are similar to their levels in 1960.

Figure 3
Exports and GDP per capita over Time
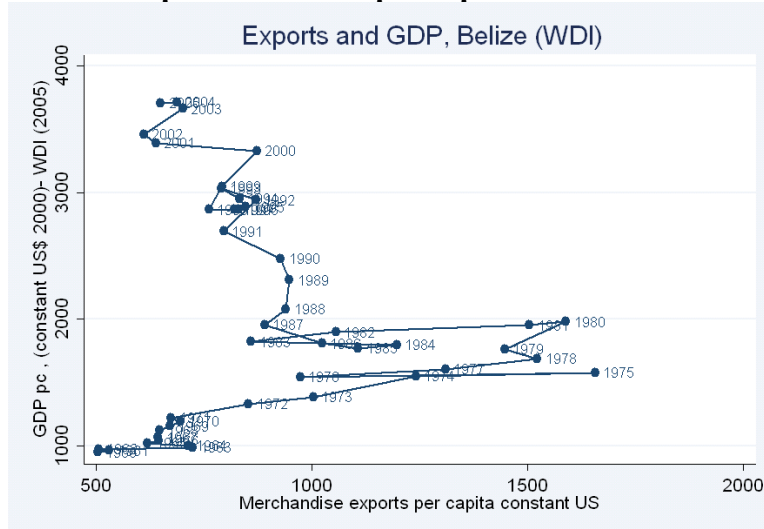
Source: World Bank WDI

These booms and collapses in exports during the 1970s and early 1980s were concentrated in the sugar market, and mainly due to fluctuations in international prices. The first recession can therefore be traced to this sugar collapse. The following figure shows that the non-sugar merchandise export basket has in fact expanded since independence, although to a small degree.

Figure 4
Real Exports per Capita, Including non-Sugar
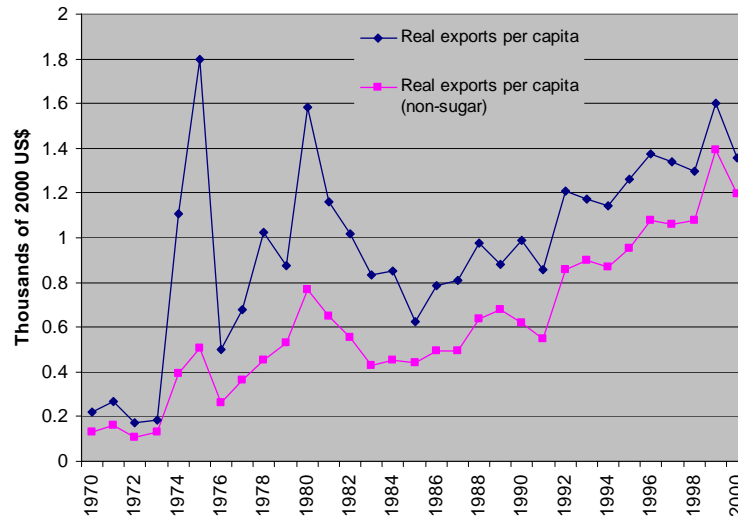
Source: Author's calculations using Feenstra

The first growth acceleration, from 1986 to 1993 has been attributed in part to the 'discovery' of the tourism sector. Prior to this period, the tourism sector was virtually non-existent in Belize, but it has since gone on to become one of the largest sectors of the

economy, representing approximately 20% of GDP and 25% of employment (BTIA 2007). There was also an investment boom associated with the short-lived 'economic citizen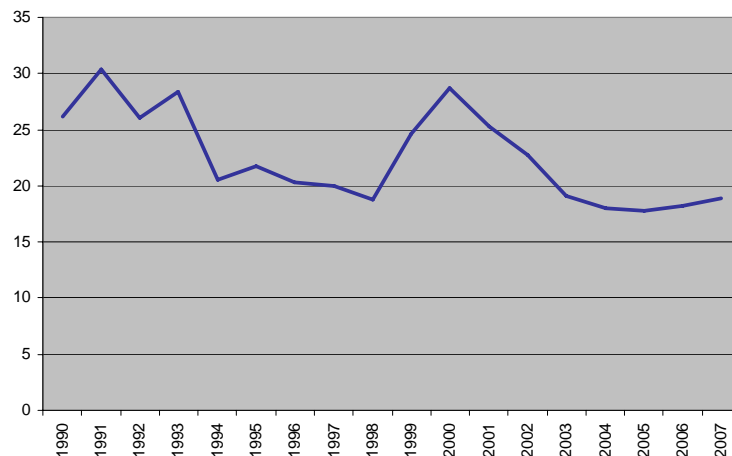ship' program (MOF 2007). Investment during this period was over 25% of GDP, as illustrated in the following figure. Some of this investment was due to an FDI boom, but the majority was domestically financed.

Figure 5
Gross Fixed Investment (% of GDP)
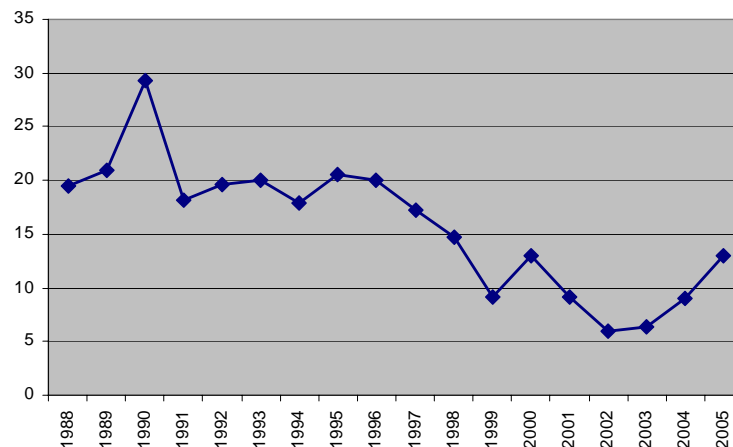

Source: EIU

After 1990, however, the trend that ignited this growth acceleration reversed. FDI net inflows fell from a peak of 5.15% of GDP in 1989 to 1.6% of GDP in 1993 (World Bank WDI), and the government increased investment to fill the gap. Capital expenditures as a percentage of GDP went from 12.6% of GDP in 1990 to almost 19% by 1992. Government consumption also increased slightly, from 20.4% of GDP in 1990 to 21.8% in 1992, while government revenues fell from 31.2% of GDP in 1990 to 29% of GDP in 1992 (COB 2007). As a result of ballooning current and capital expenditure along with falling revenues, the government quickly went from a small overall budget surplus in 1990 to a deficit of almost 8% of GDP by 1993. At the same time, exports fell from 38% of GDP to 35% of GDP, while imports grew from 56% of GDP to 62% of GDP, worsening the trade balance. The current account went from a surplus of 7% in 1990 to a deficit of 11% in 1993, leading to expanding debt and falling international reserves.

Although the private investment boom in 1986 and 1987 slowed by 1990, growth was continued on the back of expansions of government investment. But by 1993, this public spending binge could not be sustained, and the government instituted a home-grown adjustment program. Public investment was cut significantly, from a peak of nearly 19% of GDP in 1992 to only 6% of GDP by 1996, at which point the overall budget returned to near balance. Reserve requirements were increased, which raised interest rates and tightened credit. After 1993, the fiscal, trade, and current account deficits all began to close, and output per capita fell by an average of 1.1% for the following five years.

In many ways, the subsequent decade was déjà vu all over again: a grow acceleration fueled by a public investment binge that was unsustainable, subsequently requiring adjustment leading to a recession. In 1999 public investment jumped by a whopping 5% of GDP, and by 2000 was well over double its 1998 level. In 2000, the current account deficit doubled, and the budget deficit tripled. There was loose money and an expanding trade deficit. By 2004 the government had to again institute a home-grown adjustment program, which initiated the current phase of economic stagnation.

However, there were also some important differences between the two accelerations. Gross domestic savings collapsed in the mid 1990s. It had been steady at approximately 20% of GDP since 1988 (with a small spike during the boom), but between 1996 and 1999, it fell by half, and since then have fluctuated around 10% of GDP. This was principally a collapse in private savings, which went from 15% of GDP in 1994 to 5% by 1998.

Figure 6
Gross Domestic Savings (% of GDP)

Source: EIU

The second boom in investment during the second growth acceleration was in the context of low national savings, making the resulting current account deficits much larger than during the first boom. Government deficits were not domestically financed, unlike the first investment boom. This can be seen in the ratio of national savings to investment, which was at 80% during the first growth acceleration, but fell below 20% during the second growth acceleration.

Figure 7

Gross National Savings / Investment
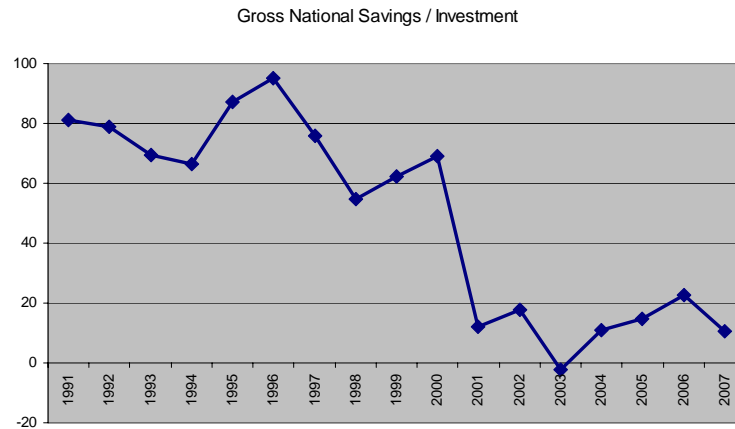
Source: EIU

The 1999-2003 growth acceleration was driven by external borrowing. Public sector external debt tripled, from $300 million in 1999 to over $900 million in 2003. Taxes were lowered, public investment increased, inexpensive credit was provided through state-owned enterprises, while at the same time money was loosened which increased private sector credit further (CBB 2007).

Much of the spending during this boom was not productive investment that would generate immediate accelerated growth which could maintain the acceleration. The Development Finance Corporation, a publicly-owned finance institution, was a significant source of new investment. The majority of their new lending was in building and construction, much of which was residential construction along with some school construction (MOF 2007).

Figure 8
Belize: DFC Loan Porftfolio (1977-2006)

BELIZE: DFC LOAN PORTFOLIO
(IN THOUSAND B$)
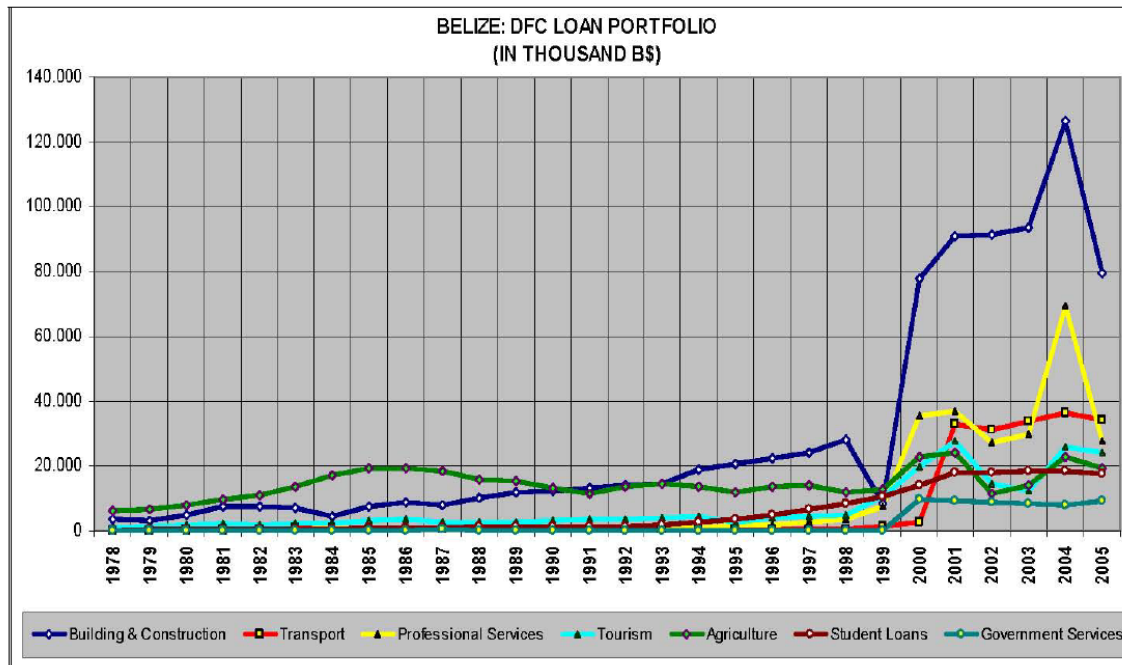
Taken from Nogales (2006)

A significant proportion of these loans subsequently went into default (for example, 92% of DFC real estate lending, Nogales 2006), and had to be assumed by the government. There were important and costly cases of corruption as well (IMF 2006), and as a consequence the DFC was put into liquidation.

The current period of stagnation, from 2004 to the present, has been in the context of significant fiscal adjustment. Between 1999 and 2005, interest payments on external debt as a percentage of GDP went from 2% to 7.5%. To maintain the same overall budget surplus of -5.5% of GDP, the government had to slash public investment from 12.9% of GDP to 4.1% of GDP, a reduction of 8.8%[1]. As detailed in IMF (2006) and IDB (2007), this adjustment program has basically placed a moratorium in public investment and infrastructure maintenance, as well as new hires and public sector wage increases.

This synopsis of growth dynamics over the past two decades reveals that periods of growth acceleration and collapse are tightly linked with booms in public spending, credit to the private sector, and deteriorations in the current account. This signals that the binding constraint to growth is likely on the finance side of the Hausmann Rodrik and Velasco (2004) decision tree. We will first move down the decision tree, showing that indeed, problems of access to finance are the principal constraints to Belize's growth. We will then provide evidence that other potential constraints are not binding, and conclude with policy recommendations in light of the diagnostic.

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[1] 1% of this reduction was a re-classification of current expenditure that was previously classified as investment.

Growth Diagnostics

The growth diagnostics framework is framed with the question 'why is investment not higher?', and begins with the distinction of low investment because of a high cost of finance, or low investment because of low appropriable returns. Low appropriable returns could be because of appropriability problems, a lack of complementary inputs, or coordination and failures in the emergence of new activities.

Is it bad finance?

The interest rates charged on loans in the country are quite high. The following figure shows that they are among the highest in the country's income group. This is despite the fact that Belize has been pegged to the US dollar at the same rate for over 30 years, meaning there should be little exchange rate risk. The leading local bank reports that even it's best corporate customers are charged 12% on loans, when inflation has not surpassed 4% in more than a decade. Belize is clearly a high cost of finance country.

Figure 9
Histogram of Real Lending Rates in Belize's Income Band, 2005
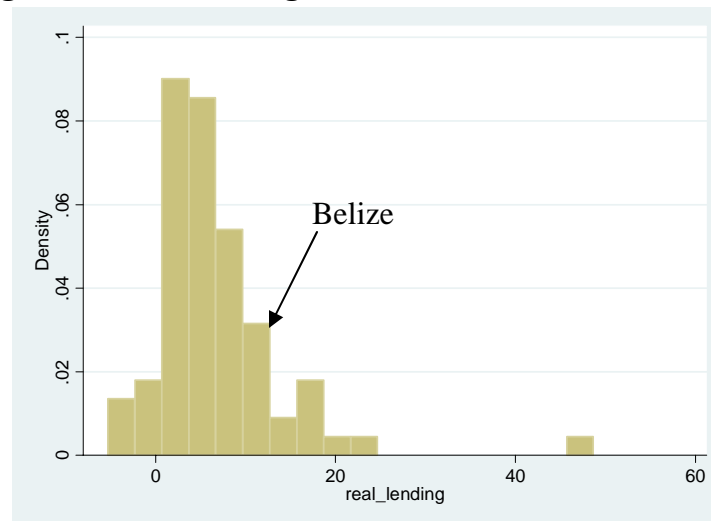
Source: EIU. Real lending rate calculated using change in consumer prices. Histogram for all countries with log GDP per capita (PPP) equal to Belize +/- 1.

Lending rates could be high because of poor financial intermediation or low savings. One way to distinguish between the two possibilities is through interest rate spreads: poor local financial intermediation would manifest itself in high operating costs in banks, and correspondingly high spreads. Instead, if the problem is savings rather than intermediation, the deposit rate should be high and the spread low.

Figure 10
Histogram of Interest Rate Spreads in Belize's Income Band, 2005

Source: EIU. Histogram for all countries with log GDP per capita (PPP) equal to Belize +/- 1.

Figure 11
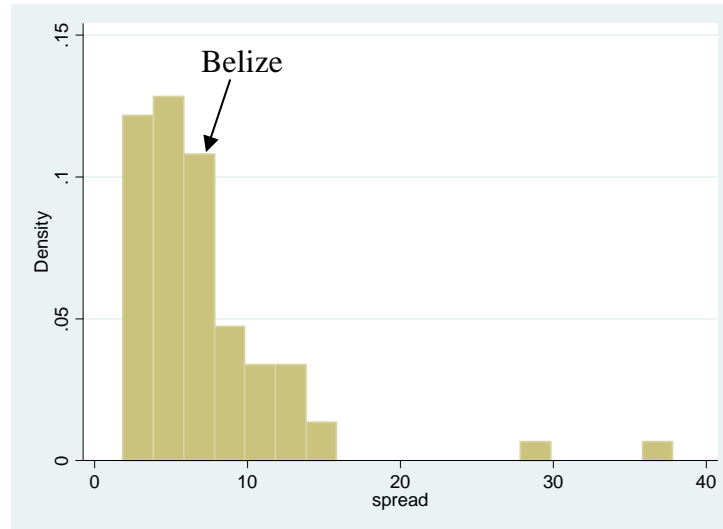**Histogram of Real Deposit Rates in Belize's Income Band, 2005**
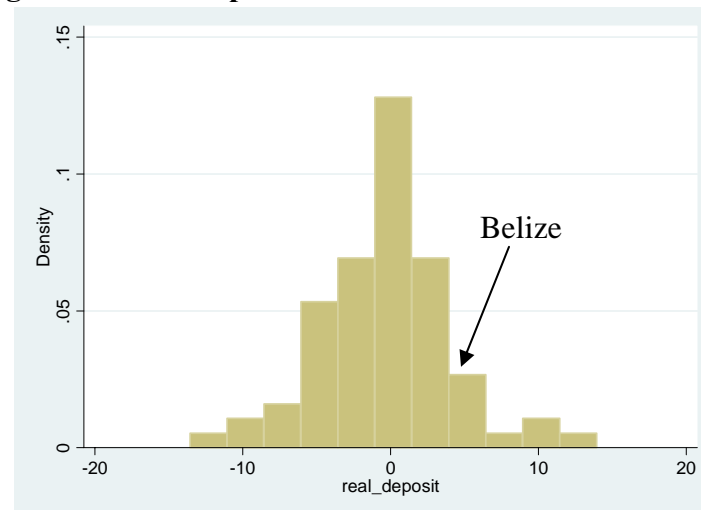
Source: EIU. Real deposit rate calculated using change in consumer prices. Histogram for all countries with log GDP per capita (PPP) equal to Belize +/- 1.

Both spreads and deposit rates are high in Belize. However, on the margin it seems that while spreads could be considered high but reasonable, the deposit rate is clearly very high. This is despite the fact that Belize has a substantial tax on financial intermediation through reserve requirements, which according to our estimate (see below) contributes a substantial portion to the spread. It is important to note, however, that IMF estimates suggest a lower contribution of reserve requirements, making poor financial intermediation more of a worry. But on balance, while financial intermediation in Belize may also be a constraint to growth, the principal source of the high cost of finance in Belize seems to be low savings.

11

As discussed above, aggregate national savings suffered a significant collapse in the early 1990s and have not recovered. Private savings were the main source of that collapse, going from 15% of GDP in 1994 to 5% in 1998 and -6.5% in 2002 (IMF 2006). They have since rebounded, and in 2005 reached 10% of GDP. Unfortunately, however, at the same time public savings have been wiped out by ballooning debt service payments, keeping aggregate savings low. Gross domestic savings in Belize remains among the lowest in its income group (as a percentage of GDP).

Figure 12
Gross Domestic Savings vs. GDP per capita (logs), 2005
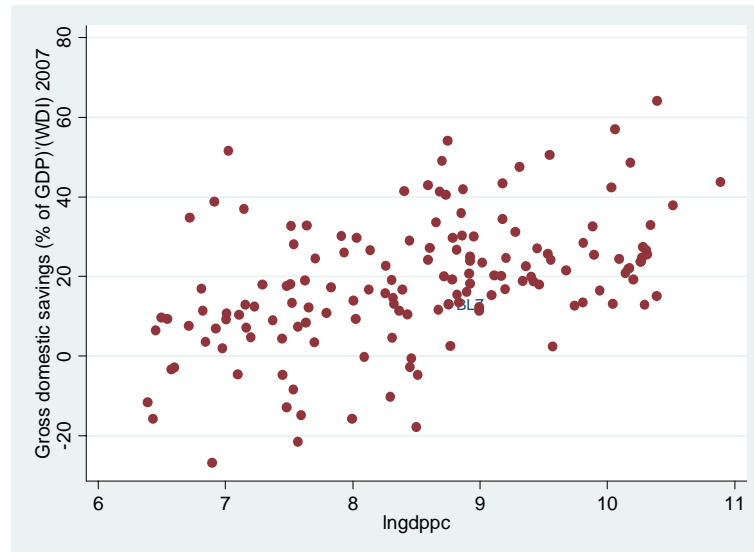
Source: World Bank WDI

Access to external finance has become a major problem since the public debt accumulation in the late 1990s. Belize had to renegotiate its debt in 2007 to avoid default. Past debt sustainability analysis showed the level to be unsustainable (IMF 2006), but the renegotiation reduced the net present value of the debt by approximately 20% and changed the time profile with a step-up interest rate. The debt level is now considered sustainable, as long as the prudent fiscal stance is maintained (IDB 2007). Not surprisingly, the government is now virtually shut out of international financial markets, and will be for the foreseeable future.

As discussed in the growth dynamics section, the Belize's growth history has been one of Keynesian growth closely linked to fiscal spending and the country's external position. The current account consistently moves into deficit during periods of accelerated growth, and then recovers during recessionary periods. During the first growth acceleration from 1986 to 1993, these flows were in the form of FDI and private investment until the early 1990s, when there was a boom in public investment. There was then a period of adjustment during the 1994-1998 recession when the public budget and current account returned to balance. Beginning in 1999, there was another public investment boom, and in the context of low savings and a lower tax take, an explosion in public debt. As

discussed above and shown in the following figure, it is clear that Belize suffers a lack of fiscal discipline.

Figure 13
Growth Rate of GDP per capita, Budget Balance, and the Current Account
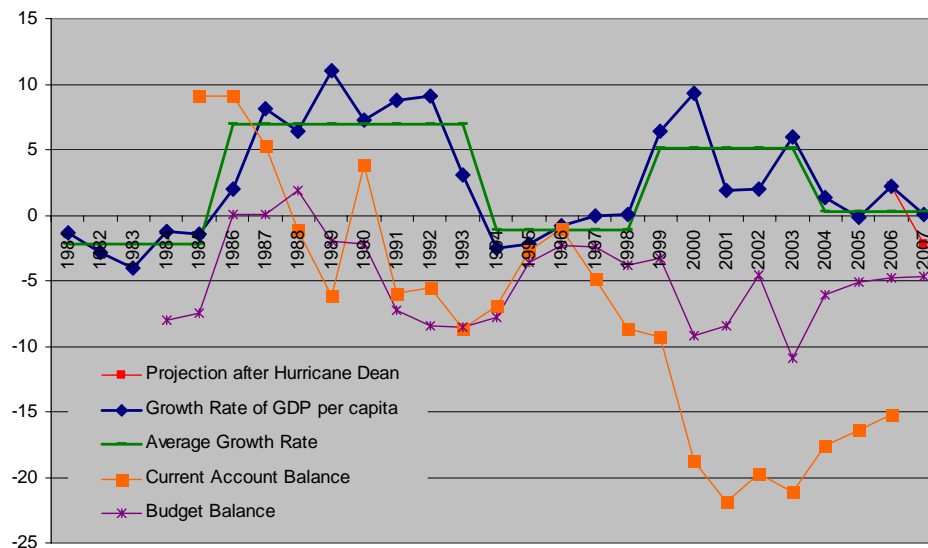
Source: 1981-2005, World Bank WDI. 2006 value using Government of Belize data, 2007 value using Government of Belize estimate. 2007 value incorporating the effects of hurricane Dean (red) using IDB (2007).

The fiscal problems seem to be principally on the expenditure side. However, there are also problems on the revenue side. The tax take is currently over 23% of GDP, making it one of the most effective systems in Central America and the Caribbean (Jenkins & Kuo 2007). However, this is down from over 30% in 1990 (CBB 2007). There was a significant fall in tax revenues as a percentage of GDP between 1990 and 1994, and they have remained at the same lower level ever since, exacerbating the budget deficit problem during the second spending boom.

There are also signals that the lack of fiscal discipline could be linked to political cycles. Both growth accelerations were fueled and extended by unsustainable public investment. Interestingly, the final years of the two growth accelerations also happened to be election years. In fact, the three years when the government's budget balance reached its low-point before reverting towards balance (1984, 1993, and 2003) were election years. While public institutions are not found to be a constraint on growth in terms of reducing appropriability, public institutions governing public spending seem be affecting growth through their impact on spending and debt accumulation.

13

Figure 14
Growth Rate of GDP per capita & Political Cycles
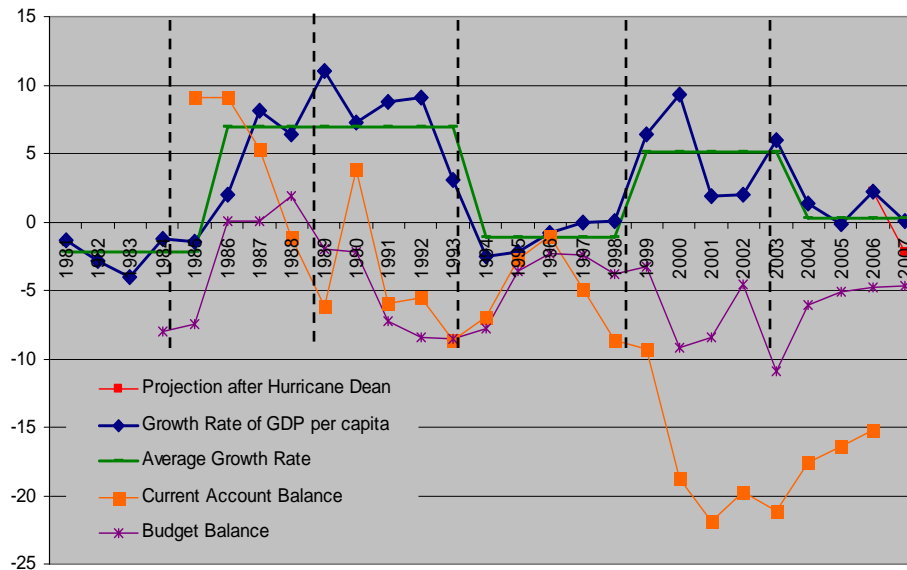Dotted Lines Indicate General Election Years

Source: 1981-2005, World Bank WDI. 2006 value using Government of Belize data, 2007 value using Government of Belize estimate. 2007 value incorporating the effects of hurricane Dean (red) using IDB (2007).

In addition to low savings and poor fiscal discipline, there is another related driver of the access to finance constraint in Belize: monetary policy. Government borrowing may have harmed the private sector's access to external finance, but it has not crowded out domestic borrowing directly because it is from abroad. However, domestic finance is harmed by government spending through monetary policy. Belize has a fixed exchange rate regime. Along with capital controls, the country's only tool of monetary policy is reserve requirements, which are dedicated to maintaining the exchange rate. These reserves are unremunerated, and therefore are a direct and significant tax on financial intermediation, which exacerbates the cost of finance problem in a country with already high spreads and seemingly inefficient and uncompetitive financial intermediation. We estimate that just under half of the interest rate spread observed in Belize in 2006 is due to reserve requirements[2], although other estimates suggest a smaller contribution. Moreover, reserve requirements are lowered during periods of economic expansion to relieve upward pressure on the exchange rate, and vice versa during contraction, making this tax strongly procyclical. The following table shows spreads moving upward in tandem with the steady increase in reserve requirements after 2001.

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[2] This is estimated using the zero profit condition for banks, which implies that the lending rate minus the deposit rate is equal to operating costs plus the product of the reserve ratio and the deposit rate, all divided by one minus reserve ratio. Solving this equality for operating costs allows us to measure the contribution to the spread of operating costs versus the reserve ratio.

Table 1
Changes in Reserve Requirements and Evolution of Bank Spread

	Cash Reserve Ratio	Liquid Asset Ratio
Apr-00	3%	24%
Sep-02	5%	24%
Nov-02	6%	24%
Apr-04	6%	19% (classification change)
Dec-04	7%	20%
May-05	8%	21%
Jan-06	9%	22%
Sep-06	10%	23%

	Lending	Deposit	Spread
2001	15.4	11.1	4.3
2002	14.5	10	4.5
2003	14.2	9.3	4.9
2004	14	8.8	5.2
2005	14.3	8.8	5.5
2006	14.2	8.4	5.8

Source: Central Bank of Belize

The binding constraint to growth in Belize is the high cost of finance, behind which are primarily poor budgeting institutions causing a lack of fiscal discipline, low savings (in part due to the debt overhang), and taxation on financial intermediation, as well as possibly inefficient and uncompetitive domestic financial intermediation. The appropriate policies to release these constraints are to maintain fiscal sustainability and reverse the downward trend in the tax take to incrementally reduce the debt overhang, while creating budgeting institutions that are more insulated from the political cycle and do not allow for unsustainable spending booms in the future. Other initiatives to improve efficiency in domestic financial intermediation and increase domestic savings should also be explored. While this will incrementally draw down the cost of capital, in the mean time the focus will have to be on investors that don't face the domestic interest rate, which requires different priorities in the country's industrial strategy, as well as creative ways to finance needed public goods. Before discussing these policy implications, we will provide evidence that the other potential constraints to growth are not binding.

Is it low appropriability?

Investment could be restricted because investors don't expect to appropriate the high social returns that their investments generate. This could happen through a number of channels, such as direct taxes, indirect taxes through excessive regulation, price or exchange rate instability, or crime and corruption.

In terms of direct taxes, it is difficult to say that Belize is restricting investments through excessive taxation. As the table below shows, it is one of the lower tax environments in the region.

Table 2
Corporate Taxes

	Profit tax (%)	Labor tax and contributions (%)	Other taxes (%)	Total tax rate (% profit)
Costa Rica	10	30.1	42.8	83
Colombia	25.2	31.7	25.9	82.8
Dominican	48	16.4	3.5	67.9
Nicaragua	27	19.7	19.7	66.4
Panama	18.2	21.5	12.6	52.4
Honduras	17.7	11	22.7	51.4
Seychelles	22.9	25.4	0.5	48.8
Antigua and Barbuda	31.1	9.8	7.6	48.5
Grenada	24.6	5.8	12.4	42.8
Guatemala	2.7	14.7	23.4	40.9
Mexico	5.3	30.2	1.6	37.1
Dominica	26.4	8.1	0.3	34.8
St. Vincent and the Grenadines	26.1	4.1	3.5	33.6
Belize	22	6.8	3	31.7
St. Lucia	24.1	5.8	1.6	31.5
El Salvador	15	11.6	0.9	27.4

Source: World Bank Doing Business (2006)

In addition, Belize enjoys price stability, and has for some time, thanks to the exchange rate peg. Inflation has not exceeded 7% for over 20 years, and there are no inflation crises matching up with the growth dynamics noted above.

Figure 15
Inflation
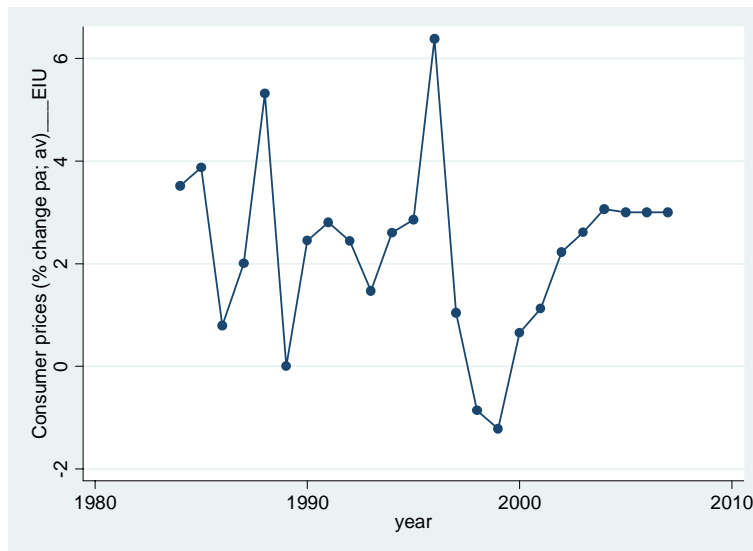
Source: EIU

The currency has been pegged to the US dollar at the same rate for over 30 years. There is no evidence that the exchange rate is overvalued, as can be seen in the graph below showing the PPP adjustment. This assessment is shared by the IMF (IMF 2006). There was some fear that the exchange rate would have to depreciate after the debt accumulation, but this threat has been eliminated by the recent debt restructuring, at least for the near future (IMF 2007). Given that international reserves are at very low levels,

there may be some continued worry about the long-term viability of the peg. Yet depreciation would only help investment in tourism and the agriculture export sector, which are key destinations of investment. Therefore, it is difficult to argue that the level or volatility of the exchange rate is restricting investment.

Figure 16
PPP Adjustment vs. GDP per capita, 2004 (Belize in red)
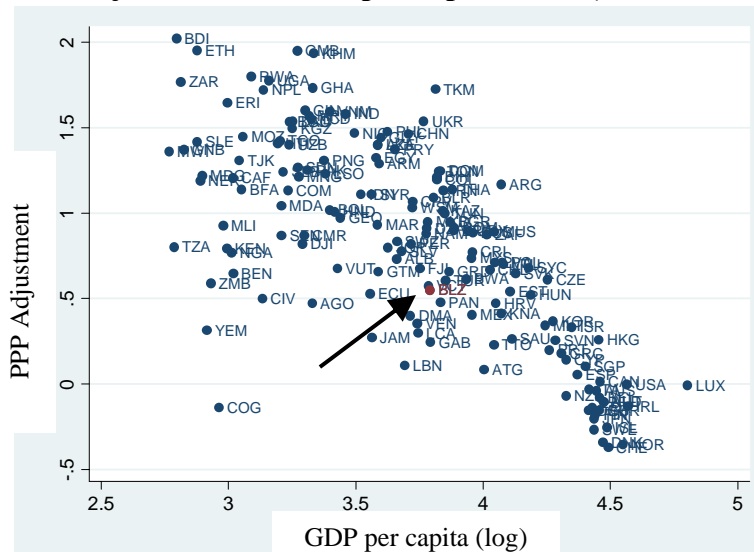
Source: WDI

The regulatory environment does not seem to be harming appropriability in Belize either, as the country rates quite well in cross-country ratings. The World Bank Doing Business data, which collects actual data on times and costs rather than opinion surveys, finds that Belize compares quite favorably to its neighbors. In addition, the Kaufmann indicators do not suggest worries of crime or expropriation. One potential are for future concern is crime. There has been a surge in violent crime in Belize City, which the tourism industry cites as a long-term concern for that sector (BTIA 2007). But on balance, the evidence suggests that concerns over appropriability aren't restricting growth in Belize.

Table 3
Doing Business Indicators

Country	Ease of Doing Business Ranking (2006)	Country	Ease of Doing Business Ranking (2006)
Mexico	43	St. Lucia	27
Belize	56	Antigua and Barbuda	33
Nicaragua	67	St. Vincent and the Grenadines	44
El Salvador	71		
Colombia	79	*Belize*	56
Panama	81	Dominica	72
Costa Rica	105	Grenada	73
Honduras	111	Seychelles	84
Dominican Republic	117		
Guatemala	118		

Source: World Bank Doing Business

Figure 17
Kaufmann Governance Indicators, 2004
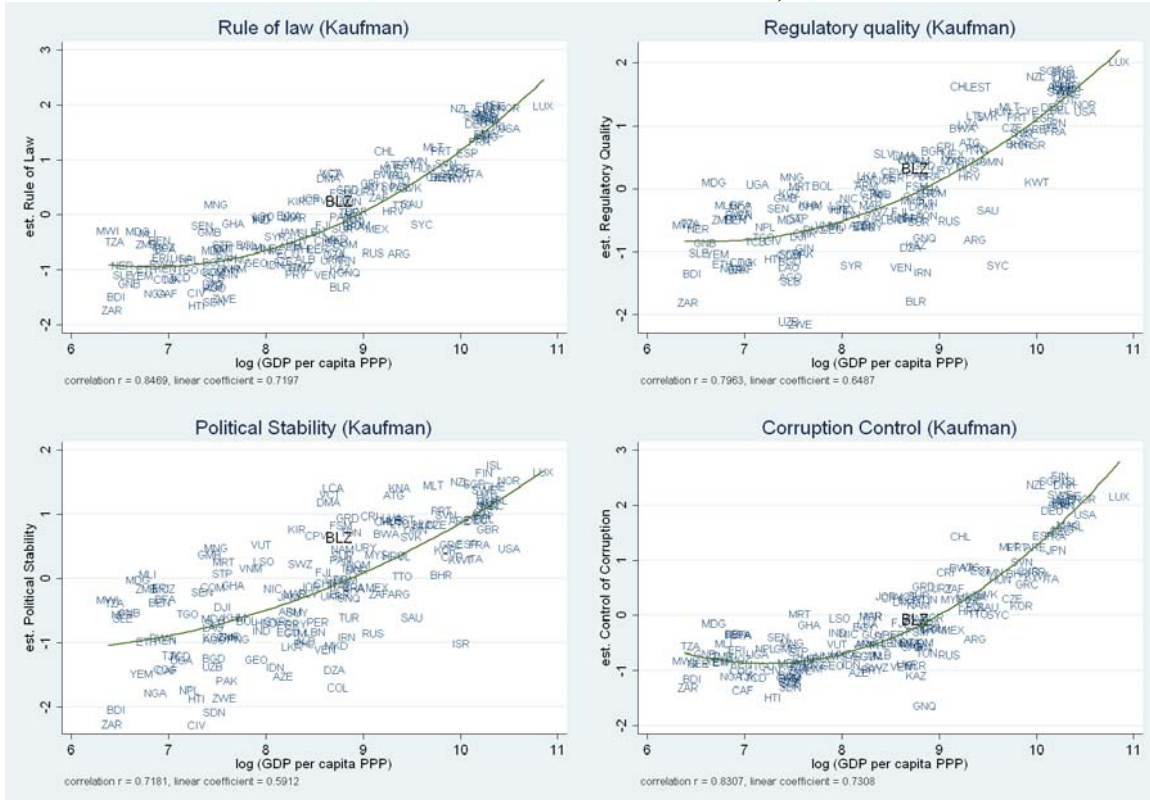
Source: World Bank

Is it missing complementary factors of production?

Low expected appropriable returns could be constraining investment in Belize not because of low appropriability, but instead because of low social returns to investment due to missing complementary factors of production, particularly infrastructure and education.

Infrastructure provision is inherently problematic in a tropical country with a very low population density, making Belize a structurally high-cost country for infrastructure and utilities (PUC 2007). However, notwithstanding these difficulties, Belize rates quite high in the infrastructure category of the Global Competitiveness Report (2006). This is the only category where Belize surpasses the Latin America & Caribbean average.

Figure 18
Global Competitiveness Report 2006
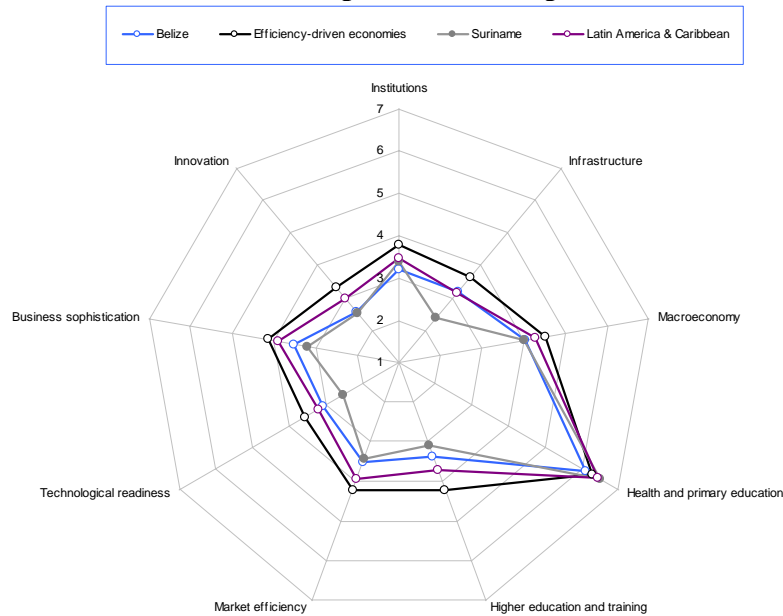
Source: World Economic Forum 2006

According to comparative data in the World Development indicators, telephone and road coverage in Belize is lower than its neighbors, but this is to be expected given Belize's low population density. There are few, if any, reports by the private sector of congestion at shipping ports or of road quality hampering output (IDB 2007b). In terms of IT infrastructure, the country rates quite well. A new fiber optic connection was brought online in 2001 (PUC 2007), and there has been recent growth in call centers. Ready Call, an international call center, opened in June 2005 and has approximately 700 employees (Great Belize Productions 2006). There are also IT firms in a local techno park (principally in the online gaming industry).

Figure 19
World Bank Infrastructure Indicators
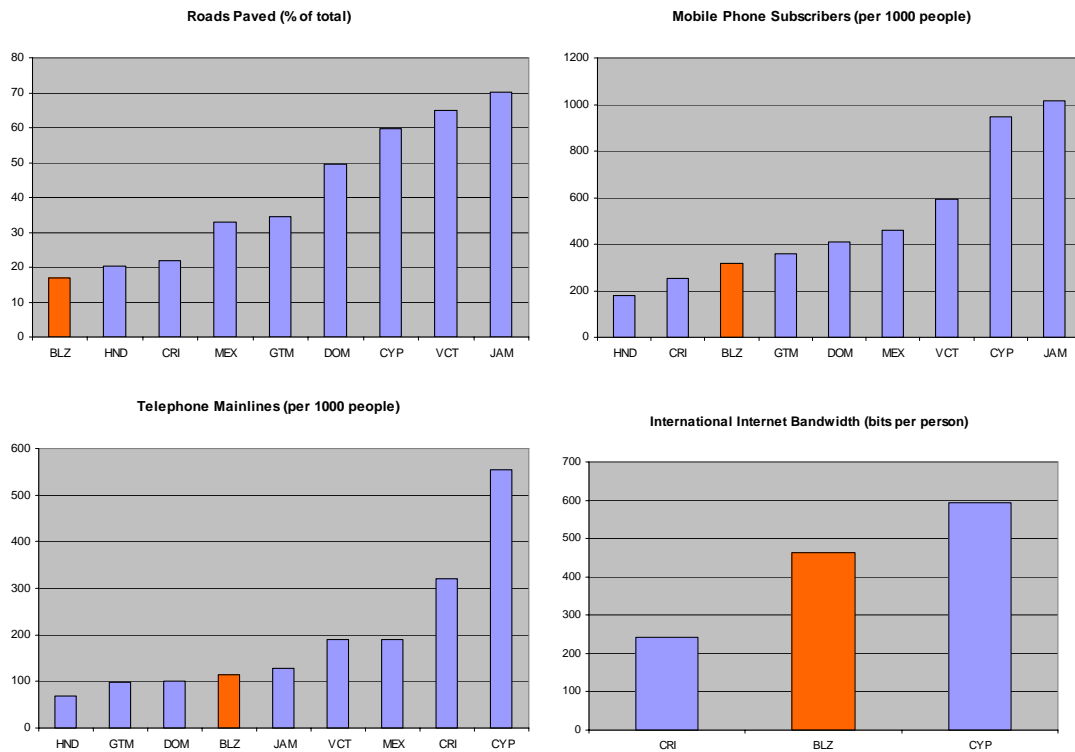
Source: WDI 2005 (Roads Paved data for 1999, which is last available year). According to the PUC, mobile phone penetration in urban areas is 700 per thousand, and will increase markedly in urban areas as CDMA has now been introduced (PUC 2007).

Given that there is growing investment in infrastructure-intensive industries, few reports of congestion, good international rankings, and a lack of infrastructure shocks coinciding with growth dynamics, it is difficult to argue that infrastructure is the binding constraint to Belize's growth.

However, there are some concerns for the future. The fiscal adjustment to ballooning interest payments on government debt has led the government to cut public investment by over 7% of GDP. According to the ministry of finance, this was accomplished in part with a virtual suspension of road maintenance. This is worrisome given Belize's geography and weather conditions, as the road network could quickly deteriorate and become a constraint on investment (IDB 2007b), particularly in agriculture which is intensive in rural roads.

In addition, there are complaints about sanitation within Belize City, as well as rural airport infrastructure, which may negatively affect the tourism sector. Belize tourism is marketed as 'Mother nature's best kept secret,' therefore sanitation problems could harm the country's image, particularly within the Cruise sector which docks in Belize City. Moreover, the rural airport network is important for transporting international arrivals in Belize City to their ultimate destination, often in the cays. Currently, the rural airports do

20

not have lighting that allows for night flights, meaning that any international tourists that arrive in Belize City late in the day have to overnight there before getting to their ultimate destination, which hurts the country's competitiveness in tourism. Infrastructure problems may become drags on future growth, largely as a result of the lack of funds for public investment.

Returns to investment could also be low due to insufficient provision of education to the workforce. However, on the whole it is difficult to make this argument in Belize. The country enjoys relatively high enrollment rates in basic education (primary and secondary). In addition, the stock of tertiary education in the labor force compares well to neighboring countries. As of 2004, 8.9% of Belize's labor force had completed tertiary education (author's calculations), compared to 7.6% in Brazil, 8.6% in Chile, 11.6% in Colombia, 7.2% in Costa Rica, 7% in El Salvador, and 4.1% in Nicaragua (Auerbach Genoni & Pages 2007).

Figure 20
Enrollment Rates for Primary (left) and Secondary (right)
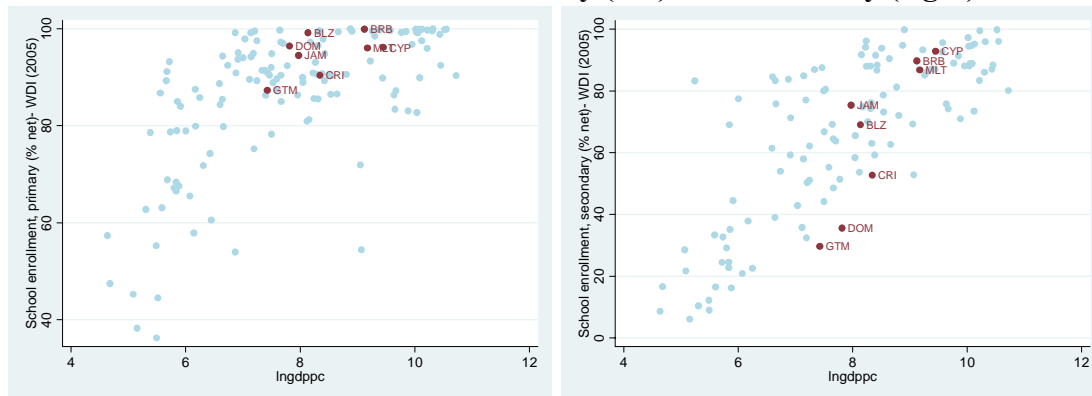
Source: World Bank WDI

This is despite the fact that Belize has not been accumulating education at the same rate as other Latin American countries. This can be observed by considering the average years of schooling by cohort year of birth. Among those born in the 1940s, and therefore educated in the 1950s, average years of education were higher in Belize than in Peru, Colombia, Mexico, and Paraguay. But by the 1990s, Peru Mexico and Paraguay had overtaken Belize, with Colombia close behind.

Figure 21
Average Years of Schooling by Cohort of Birth
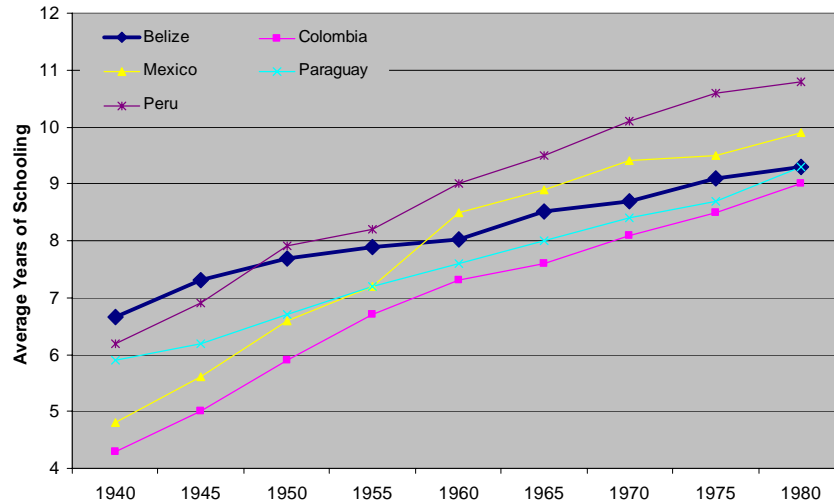
Source: Author's calculations using household surveys. Cohorts defined as those born in the year indicated or 4 years prior.

The most telling indicator of insufficient education constraining economic growth is in the economic returns to education. If the labor force is demanding more education than the state is supplying, the price of educated workers will be high and rising. As can be seen below, returns to education in Belize have been rising slightly, but they remain under 10% per year. This is much lower than Mexico's 16%, Colombia's 13.5%, and Paraguay's 11.5%.

Figure 22
Returns to Education, Urban Males
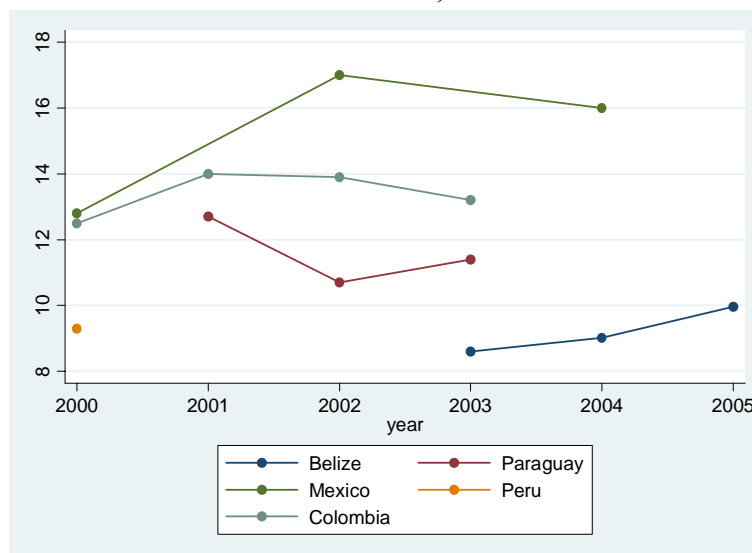
Source: Author's calculations using national household surveys

The slow accumulation of education may be a long-term growth concern as well as an immediate social concern. Moreover, behind the aggregate tertiary education numbers, it is possible that some sectors are suffering a shortage of specific skills that they must import, partly due to specific vocational gaps in the provision of tertiary education. However, on balance the evidence shows that the provision of education is not currently a significant drag on growth.

Is it too little self-discovery?

We have discarded low returns due to appropriability problems, as well as lacking complementary investments as constraints to Belize's growth. However, another potential constraint is low social returns due to market failures in the discovery of new productive activities. It is possible that even in the presence of good infrastructure, education, and investment conditions, growth is constrained simply because of a lack of productive investment ideas and the market failures that prevent their emergence.

One indicator of this constraint can be found in the terms of trade. If a country's growth dynamics are driven by price changes in their primary export goods, then the lack of movement to new sectors when existing sectors face headwinds can be a signal of a lack of self-discovery (Hausmann Rodriguez & Wagner 2006). But in the case of Belize, this signal is not present, as the terms of trade remained steady when the economy went from growth acceleration to recession in the early 1990s, and deteriorated when the country underwent another growth acceleration in the late 1990s.

Figure 23
Terms of Trade
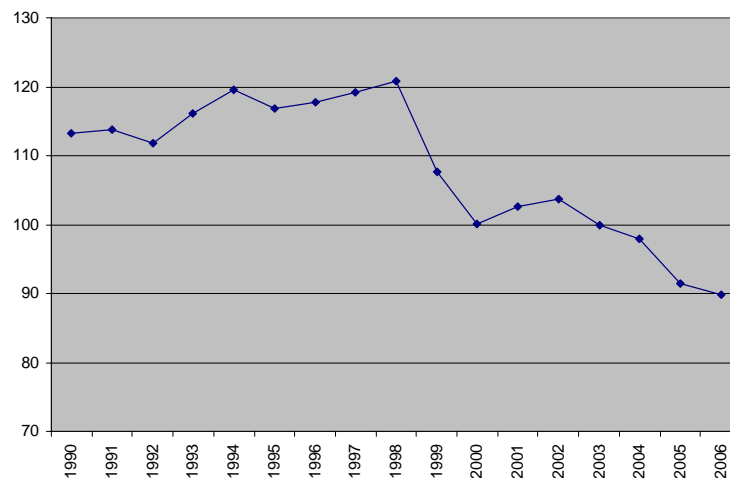
Source: IMF Country Desk

The sophistication of the export basket is another signal, and has important growth consequences (Hausmann Hwang and Rodrik 2007). If a country is suffering a lack of growth due to insufficient new activities entering the export basket, this indicator should be low for the country's level of development. On the other hand, if the country has a

23

stock of high-value export activities already existing relative to its income level, it is difficult to argue that a lack of discovery is holding back growth.

Figure 24
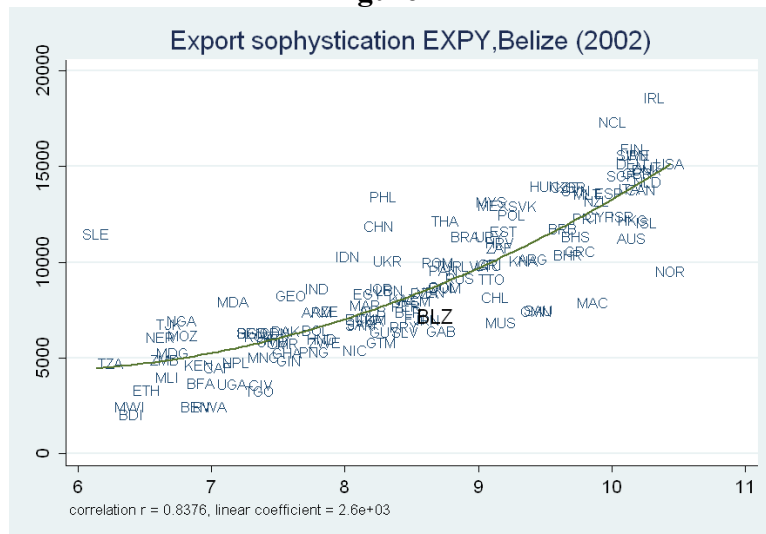
Source: Author's Calculations

In the case of Belize, the export package has a low EXPY (see Appendix for technical details), meaning the country exports goods typical of countries poorer than itself. However, this metric only considers merchandise exports, and therefore is typically lower for tourism-concentrated countries. Moreover, it is typically lower for smaller countries, meaning Belize should be compared with other small states intensive in tourism. But even when compared to other Central American and Caribbean countries, Belize continues to have a low level of export sophistication, in part because it has not kept pace with the upgrading of the export basket observed in other countries.

Figure 25
EXPY over time
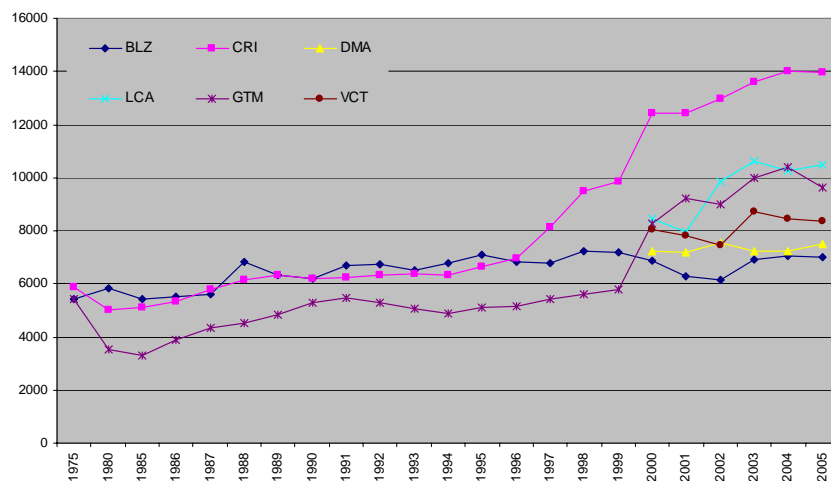
Source: Author's calculations

While a high EXPY is a strong signal that a lack of self-discovery is not the problem, the reverse is not necessarily true: a low EXPY does not necessarily imply that market failures are hindering growth. In the case of Belize, there appears to be significant potential for expanded investment in tourism and agriculture. These sectors are already the most important in Belize's productive structure, and therefore should not require significant coordination compared to countries in which completely new activities have to be discovered.

In the case of tourism, there remains much room to grow. Using indicators from the World Tourism Organization, we see that the country is one of the few in the world that has grown steadily in terms of arrivals per capita since 2001.

Figure 26

Arrivals (per 100,000 population)
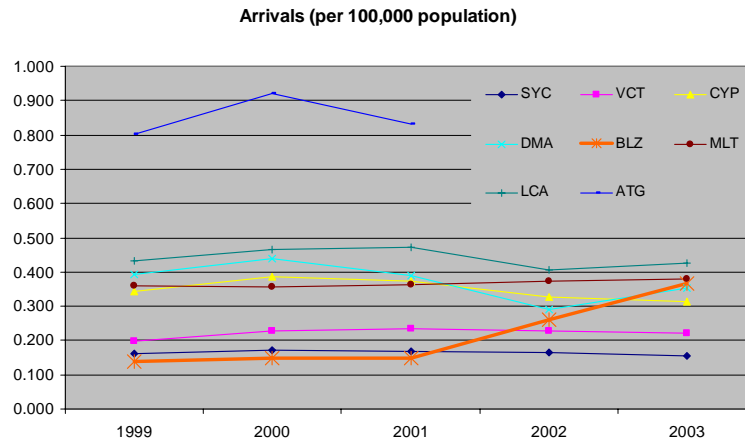
Source: World Tourism Organization

Yet as a percentage of merchandise exports, tourism earnings remain small: 67%, compared to 133% for Dominica, 190% for St. Kitts & Nevis, 260% for St. Vincent & Grenadines and Grenada, 550% for St. Lucia, and 950% for Antigua & Barbuda (all as of 2003, source World Tourism Organization & WDI). This is in part because the arrivals data includes those arriving on cruise ship stopovers. Overnight visitors as a percentage of overall arrivals in Belize are the lowest among comparators. As a consequence, tourism expenditure per capita in Belize is very low, and there remains tremendous room to grow in the area of overnight tourism.

25

Figure 27
Overnight as % of Arrivals (left) and Tourism Expenditure per capita (right)

Overnights as a % of Arrivals

Travel Expenditure ($ per 1000 population)
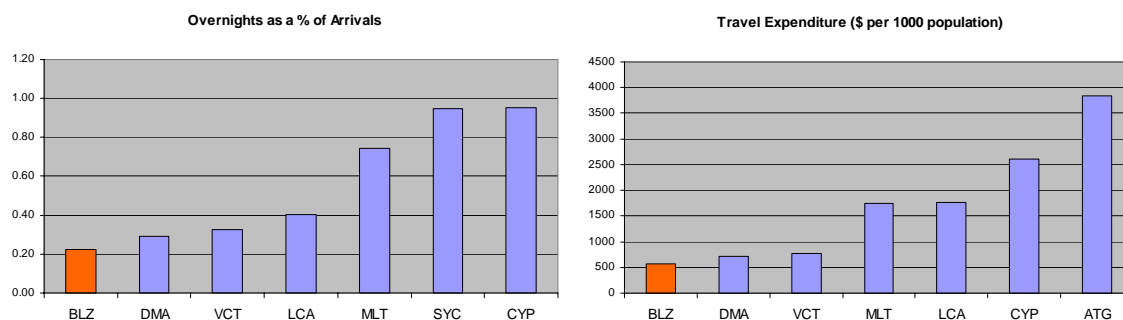
Source: World Tourism Organization

In agriculture, there is also significant room for new investment and growth. Existing fruit production could be expanded, and there is much talk of other non-traditional products, such as black-eyed peas and kidney beans, as well as livestock production. Foreign buyers complain of supply constraints from Belize in non-traditional agricultural products, and domestic producers complain about the cost of credit rather than a lack of opportunities (MOA 2007). The country has an ample supply of unused land that is well-suited to agriculture. For example, the area harvested for sugarcane is less than 10% of high-suitability land, and 5% of high and medium-suitability land (Author's calculations), the rest of which is not used for any crops. The ministry of agriculture reports that there are no limits on the agricultural frontier.

There does not seem to be any confusion about what the high-potential sectors are for Belize. The 2001 investment guide for Belize lists agriculture and agro-processing, tourism, mariculture, forestry-based industries, and tourism as high-potential sectors for investment (Chamber of Commerce and Industry 2001). In 2004, a commissioned study again identified agriculture, tourism, and furniture, as high-potential sectors, along with financial services and ICT industries. Beltraide is now releasing an export strategy identifying agriculture and agro-processing, environmental goods and services, tourism, ICT, and fisheries & aquaculture as high-potential sectors (Beltraide 2007). Finally, the product space analysis included in the appendix of this document also identifies agriculture and agro-processing as well as aquaculture as both near to the country's current structure of production and of high value.

The problem does not seem to be identifying the high-potential sectors, or co-ordination in their emergence, as there are already first movers in these industries. It is clear that Belize needs to upgrade its export basket, particularly to non-traditional agriculture for export, given the low level of EXPY and eroding preferences for banana and sugar exports. But it seems that something other than coordination failures is preventing investment. A piece of anecdotal evidence reinforcing this conclusion is that the Mennonite communities in Belize, who use the same infrastructure, property rights, and workforce as the rest of the economy but have their own access to finance from abroad, have been investing heavily and expanding significantly in agriculture (Nogales 2006).

26

Achieving upgrading in the export basket and higher growth will depend on overcoming the financial constraints hindering investment, and in the meantime, finding sources of public and private investment that aren't subjected to the government and domestic private sectors' finance constraints. This is taken up in the following section.

Conclusions & Policy Recommendations

The growth 'syndrome' in Belize is that of a highly-indebted state with a crippling debt overhang, arising from periodic public spending binges. This lack of fiscal discipline (whose timing coincides with political cycles) has created the expected symptoms: repeated episodes of growth on the back of fiscal expansion with ballooning current account, budget, and trade deficits, which eventually require harsh adjustment and recession. The debt overhang has led to the virtual elimination of public investment, while investments in road maintenance, sanitation, crime, and rural airport upgrading are key for achieving future investment growth. Deficit spending has also led to increases in reserve requirements, and therefore greater taxation on financial intermediation. This, combined with very low aggregate savings and inefficiency in the financial system, has resulted in an extremely high cost of capital in Belize. Although high-potential sectors for investment exist and have been clearly identified, high lending rates and little access to international financial markets have prevented greater investment.

The short-term tactical plan to emerge from this debt overhang has been put in place in the form of a home-grown adjustment program. Additional recommendations for slowly decreasing the debt burden and recovering macroeconomic stability have also been laid out in IMF (2006) and IDB (2007). It is important to stress that what is needed is not just short-term tactics to escape the debt overhang, but also a longer-term strategy to end the country's continuous cycles of public spending binges. It is critical to institutionalize fiscal discipline and better insulate it from political cycles. The timing of ballooning budget deficits and general elections is not likely to be a coincidence, and there may be a political economy story whereby the beneficiaries of the public investment-led Keynesian growth strategy followed over the past two decades are different from those that would benefit from a more sustainable, export-led growth pattern. The political economy of these two growth strategies in Belize deserves further study.

In addition to the need to follow the short-term adjustment program and institutionalize budgeting institutions, there are two inter-related issues that we feel deserve special mention: implicit tax expenditures and the declining tax take. As mentioned above, the tax revenue to GDP ratio is lower today than it was in the early 1990s, and the government has to reverse this trend. There are some reforms suggested in Jenkins & Kuo (2007) to increase revenues. However, there is a risk to future revenues due to the investment incentive schemes currently offered by the government. Anecdotal evidence suggests that the list of firms designated as export processing zones (EPZs), which exempt from corporate income tax for 10 years, is rapidly growing, and the shrimp industry was recently granted a highly attractive exemption from corporate income tax. EPZs are also exempt from import duties, which are a primary source of government revenue. WTO rules will eventually require these firms to be taxed (Jenkins & Kuo

2007). Moreover, exempting the high-growth sector of the economy (new export-oriented production and tourism) from income tax is a sure-fire way to harm future government revenues. The government is attempting to tax the existing capital base but not new capital, while at the same time lacking any funds for maintenance and investments in complementary infrastructure that are important to keep private returns high. This is a short-run scheme that is not sustainable. A better approach is more uniform corporate tax treatment and promoting investment by ensuring high private returns to such investments, through the provision of the right complementary public goods and attractive investment climate.

Moreover, the lack of government revenue is leading to continuous increases in reserve requirements to maintain the exchange rate while financing government deficits. This is increasing the cost of finance in an already financially-constrained economy. The use of reserve requirements as a blunt and costly tool to maintain the exchange rate has few alternatives, and there is no appetite in the country for abandoning the currency peg. One alternative would be to remunerate reserves, but this is inconsistent with the overriding need for fiscal space. The only way to avoid raising the cost of finance through increased reserve requirements is therefore to avoid the ballooning budget deficits that require their tightening.

These actions to reduce the debt overhang, institutionalize fiscal discipline, and reduce the cost of finance will gradually draw down the cost of capital and pull Belize out of its 'stop-and-go' Keynesian growth path. But in the meantime, the government must pursue a strategy of investment attraction and promotion targeting those that aren't subject to the high domestic interest rates. The current strategy focuses on promoting local investment through tax incentives: it is focused on the wrong investors, and is using tools that only make the cost of finance higher. Beltraide is focusing its efforts first on SME promotion, second on export promotion, and third on encouraging FDI. This strategy is inconsistent with the constraints facing the country. Beltraide should re-orient its priorities and modest resources towards first and foremost attracting foreign direct investment.

However, with a staff of 15 (including administrators), Beltraide is short on resources. Given the fiscal constraints, any new resources would have to come from savings in other areas. The current system of investment promotion requires that every single investment in an outward-oriented industry be examined and approved by cabinet (in the case of Beltraide's import duty exemptions) and a private sector board (in the case of export processing zone status). This highly-discretionary system has high transaction costs, while also leaving open the door to corruption and politically-based spending. Instead, a uniform and stable business taxation system consistently applied without exceptions would free up the resources dedicated to the complex and ad hoc system existing today, rebalance the currently uneven playing field for incumbents, and help reverse the downward trend in tax take. Movements towards a unified tariff regime with a focus on excise taxes would also reduce the need for outward-oriented industries to seek ad hoc exemptions from import duties. These changes to the tax system are detailed in IDB (2006), where their revenue impact is addressed in detail. The point is that in addition to

their positive fiscal benefit, the reduction in transaction costs will allow resources (mainly personnel) to be re-focused on attracting new investments from abroad.

Finally, the public investments needed in road maintenance, rural airport infrastructure, crime, sanitation, and so on, combined with the need to maintain fiscal discipline to lower the cost of finance, suggests that alternative sources of funds for the productive public investments might be considered. Ports and airports already benefit from Private Sector investment (IDB 2007b), and this could be extended to the road network. Revenue bonds, used by municipalities in the United States for infrastructure investments, are another option where funds can be raised from abroad with direct claims to future flows from the infrastructure. Or perhaps low-cost multilateral finance and grants are available. The key consideration when seeking finance for such investments is that they have little to no impact on publicly-guaranteed debt, either directly, or eventually by creating contingent liabilities that the government might eventually have to assume. As discussed above, improving the fiscal situation is paramount.

Future work is needed to better define the drivers of fiscal imprudence and the policy options to bypass this constraint in the short-term and relieve it in the long-term. However, this diagnostic clearly shows that this is the binding constraint to growth in Belize, and therefore should be the focus of future projects.

Appendix: Technical Details and Product Space Analysis

Export Sophistication

Hausmann Hwang and Rodrik (2006) develop a measure of the revealed sophistication for each product, which they call PRODY, as the revealed comparative advantage (RCA)-weighted GDP per capita of each country that exports the good:

$$PRODY_k = \sum_j \frac{(x_{jk}/X_j)}{\sum_j (x_{jk}/X_j)} Y_j$$

where x_{jk} equals exports of good k by country j, X_j equals total exports by country j, and Y_j equals GDP per capita of country j. This is the GDP of the 'typical' country specialized in that product, and can be used to measure the sophistication of a country's entire export basket, which the authors call EXPY. EXPY is simply the PRODY of each good (l) that the country (i) exports, weighted by that good's share in the country's export basket (X_i). It represents the income level associated with a country's export package.

$$EXPY_i = \sum_l \left(\frac{x_{il}}{X_i} \right) PRODY_l$$

The Product Space

In standard trade theory, moving to new export products (structural transformation) is a passive consequence of changing comparative advantage based on factor accumulation. However, there are many reasons why structural transformation may be more complicated than this picture suggests. Several factors may create market failures such as industry-specific learning by doing (Arrow 1962; Bardhan 1970) or industry externalities (Jaffe 1986). There may also be technological spillovers among industries (Jaffe, Trajtemberg, and Henderson 1993). The process of finding out which of the many potential products best express a country's changing comparative advantage may create information externalities if those who identify those goods provide valuable information to other potential entrepreneurs but are not compensated for their efforts (Hausmann and Rodrik 2003; Klinger 2007). These hypotheses suggest that moving to new export products may not be a passive consequence of factor accumulation, nor a smooth process that occurs along a continuum. But if not a continuum, what is the structure of this "product space"?

Hausmann and Klinger (2006) investigate this question, and find that the types of information and coordination failures mentioned above are less binding when moving to "nearby" products. This is based on the idea that every product involves highly specific inputs such as knowledge, physical assets, intermediate inputs, labor-training requirements, infrastructure needs, property rights, regulatory requirements, or other public goods. Established industries have already sorted out the many potential failures involved in assuring the presence of all of these inputs, which are then available to

subsequent entrants in the industry. But firms that venture into new products will find it much harder to secure the requisite inputs. For example, they will not find workers with experience in the product in question or suppliers who regularly furnish that industry. Specific infrastructure needs such as cold storage transportation systems may not exist, regulatory services such as product approval and phytosanitary permits may be underprovided, research and development capabilities related to that industry may not be there, and so on.

Hausmann and Klinger (2006, 2007) find evidence supporting the view that the assets and capabilities needed to produce one good are imperfect substitutes for those needed to produce another good, but this degree of asset specificity will vary. Correspondingly, the probability that a country will develop the capability to be good at producing one good is related to its installed capability in the production of other similar, or nearby goods from which the currently existing productive capabilities can be easily adapted. The barriers preventing the emergence of new export activities are less binding for nearby products that require only slight adaptations of existing capacity. This finding suggests a discontinuous product space in which structural transformation favors nearby goods.

To measure this space, we first develop an indicator of the distance between products. We measure this based on the probability that countries in the world export both. If two goods need the same capabilities, this should show up in a higher probability of a country having comparative advantage in both. Formally, the inverse measure of distance between goods i and j in year t, which we will call proximity, equals

$$\varphi_{i,j,t} = \min\left\{P\left(x_{i,t} \mid x_{j,t}\right), P\left(x_{j,t} \mid x_{i,t}\right)\right\}$$

where for any country c

$$x_{i,c,t} = \begin{cases} 1 & if \quad RCA_{i,c,t} > 1 \\ 0 & \quad otherwise \end{cases}$$

and where the conditional probability is calculated using all countries in year t. This is calculated using disaggregated export data across a large sample of countries from the World Trade Flows data from Feenstra and others (2005) and UN COMTRADE. Unfortunately, this data only includes merchandise. As there is no disaggregated international service data, this methodology can not be applied to services.

The heterogeneity of the product space can be shown econometrically (see Hausmann and Klinger 2007), yet it is much more revealing to illustrate these pairwise distances graphically. Using the tools of network analysis, we can construct an image of the product space (Hidalgo et al. 2007).

Considering the linkages as measured during 1998–2000, we first build the backbone of the space by taking each product and connecting it to its nearest neighbor. The next step is to overlay the strong links between products, and color-code the linkages depending on their proximity (see Hidalgo et al. 2007 for a more detailed technical description). Figure

9 shows the visual representation of the product space. Each node is a product, its size determined by its share of world trade. In these figures, physical distances between products are meaningless: proximity is shown by color-coding the linkages between pairs of products. A light-blue link indicates a proximity of under .4, a beige link a proximity between .4 and .55, a dark-blue link a proximity between .55 and .65, and a red link a proximity greater than .65. Links below 0.55 are shown only if they make up the maximum spanning tree, and the products are color-coded based on their Leamer (1984) commodity group.

A Visual Representation of the Product Space
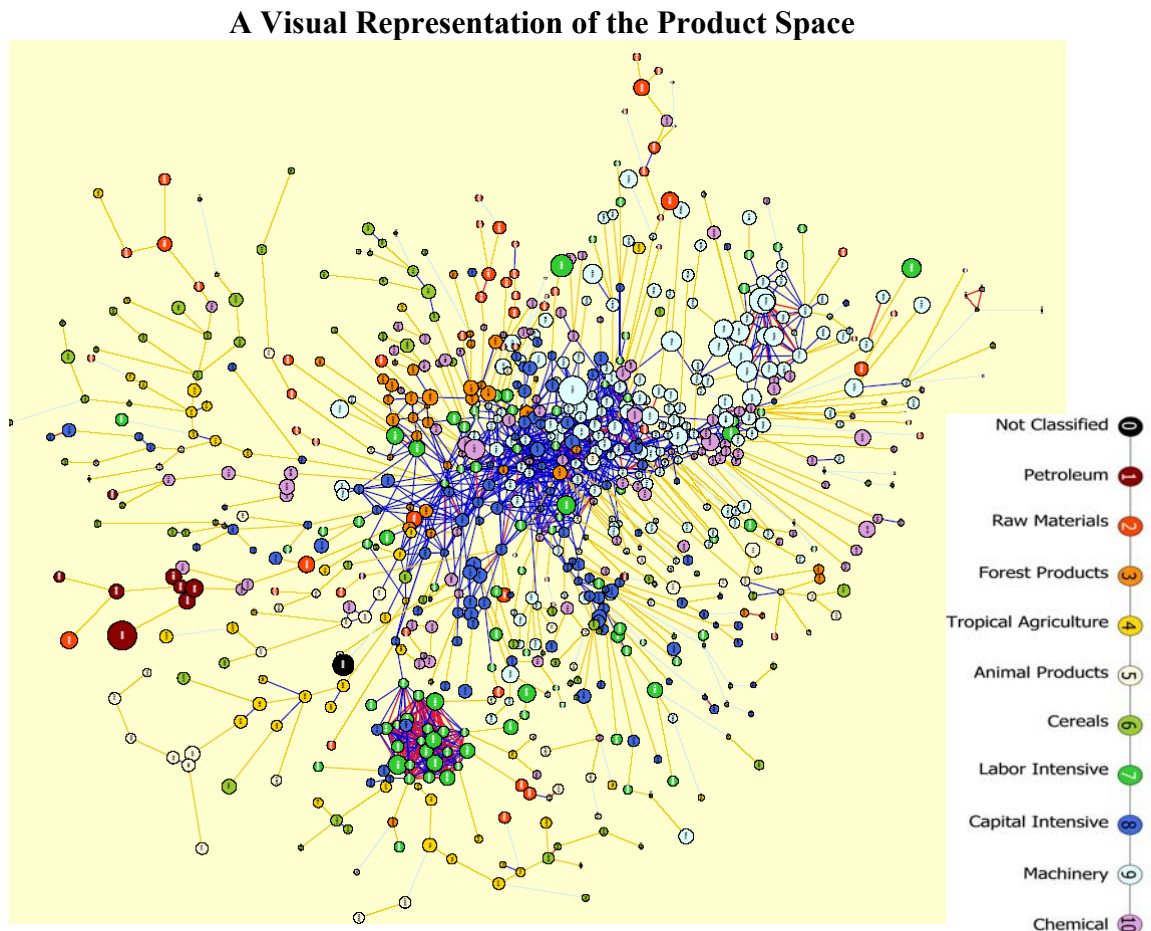
Source: Hidalgo et al. (2007).

This figure reveals that the product space is highly heterogeneous. There are peripheral products that are only weakly connected to other products. There are some groupings among these peripheral goods, such as petroleum products (the large red nodes on the left side of the network), seafood products (below petroleum products), garments (the very dense green cluster at the bottom of the network), and raw materials (the upper left to upper periphery). Furthermore, there is a core of closely connected products in the center of the network, mainly of machinery and other capital-intensive goods.

This heterogeneous structure of the product space has important implications for structural transformation. If a country is producing goods in a dense part of the product

space, then the process of structural transformation is much easier because the set of acquired capabilities can be easily redeployed to other nearby products. However, if a country is specialized in peripheral products, then this redeployment is more challenging because there is not a set of products requiring similar capabilities. The process of structural transformation can be impeded due to a country's orientation in this space.

The figures below show Belize's evolution in this product space between 1975 and 2000, where a black square on top of a product indicates that it is exported with comparative advantage.

Belize 1975
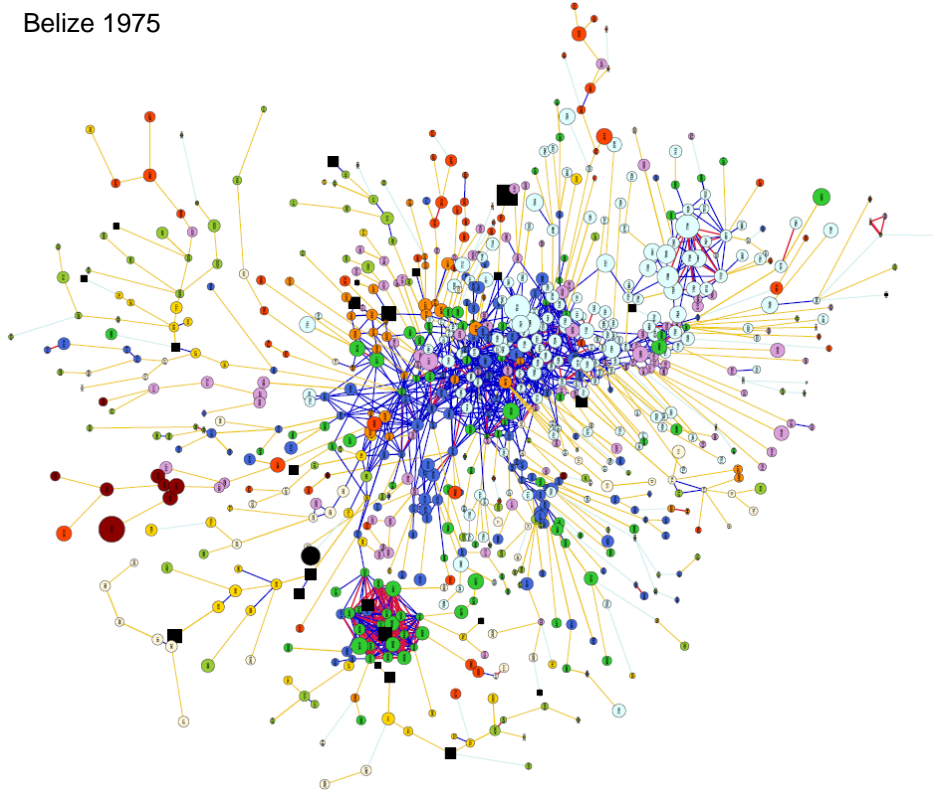
Belize 1980
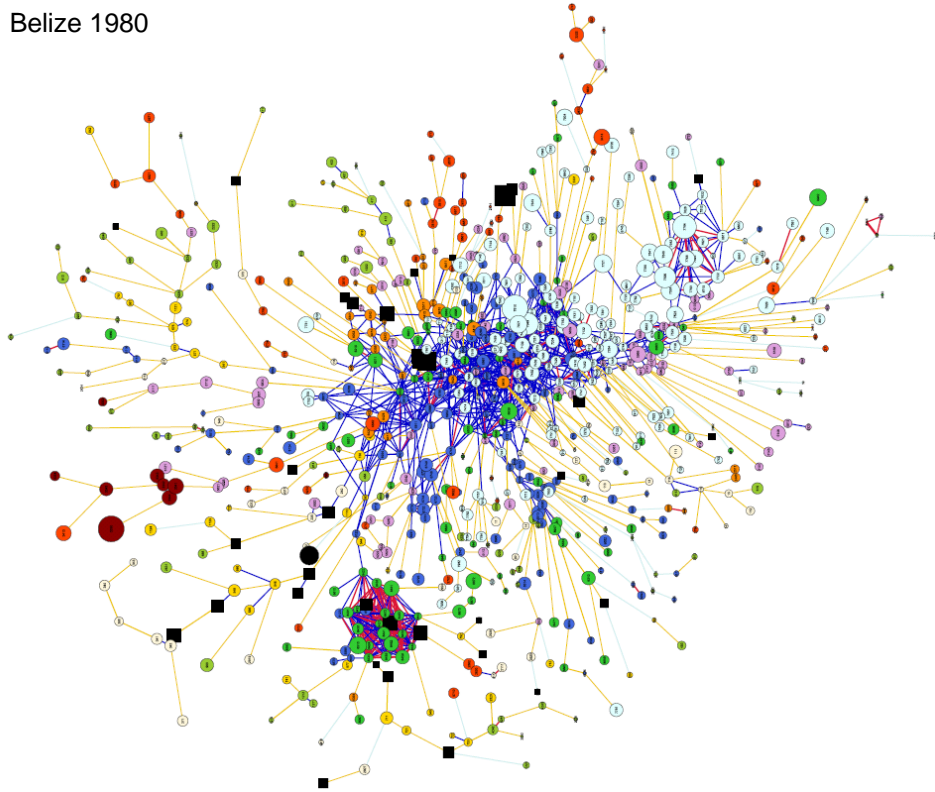
Belize 1985
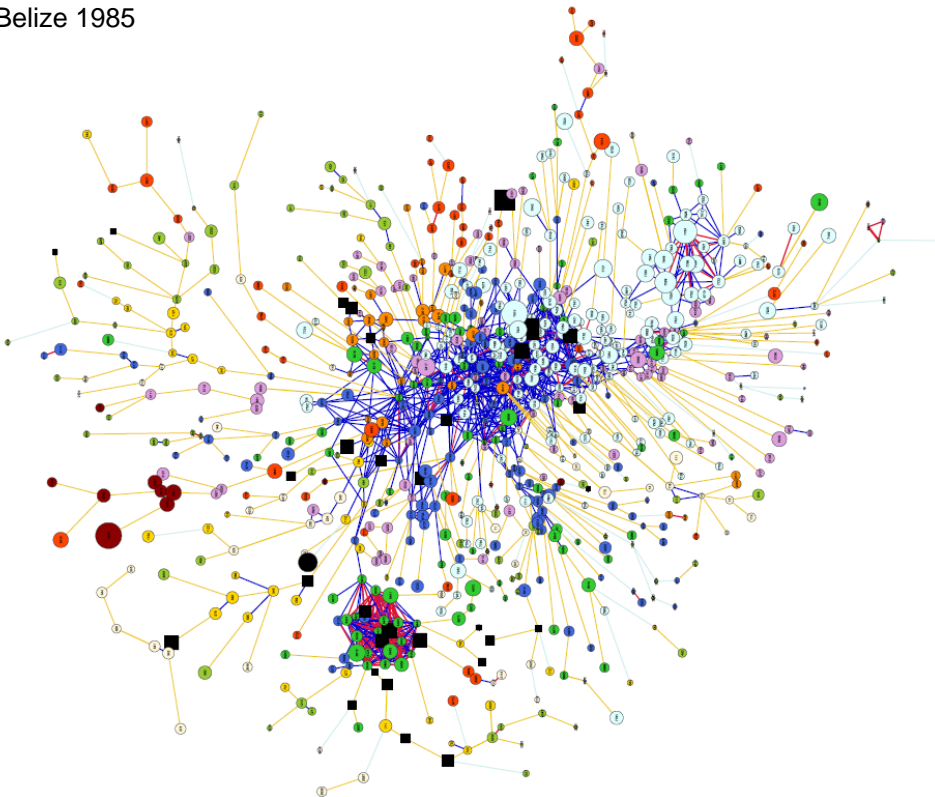
Belize 1990
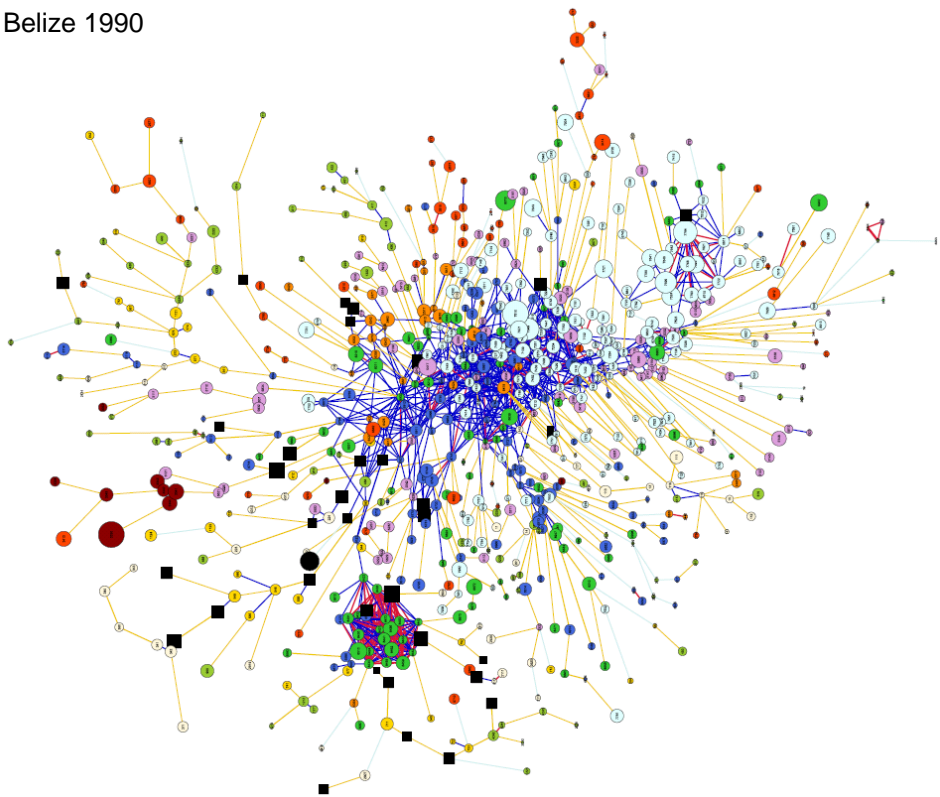
Belize 1995
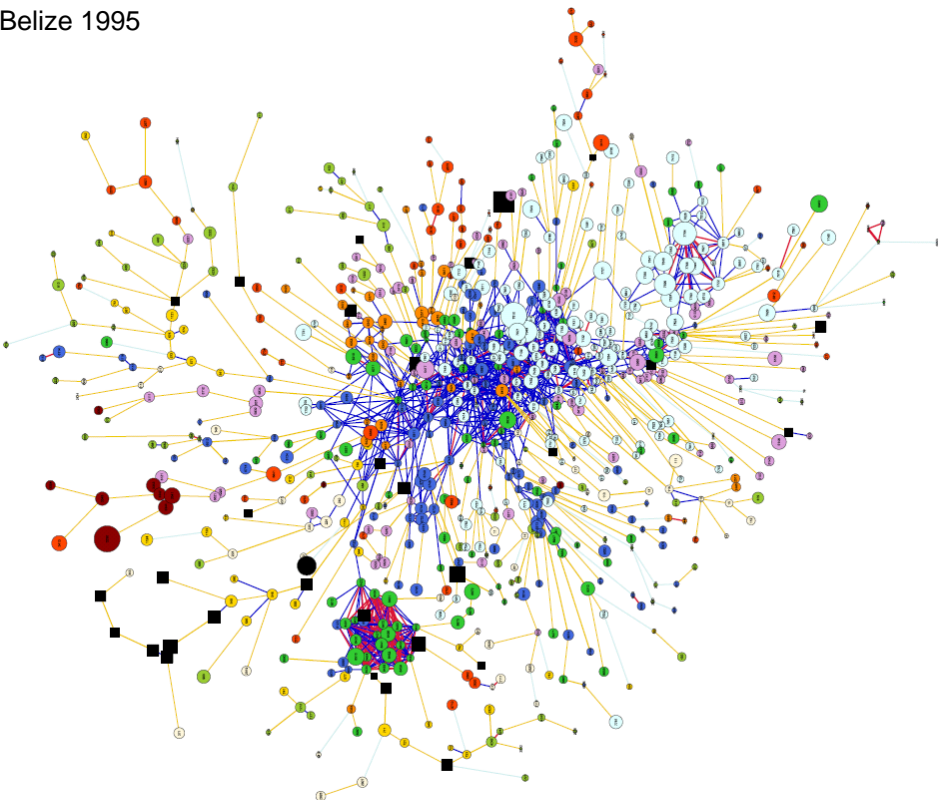
Belize 2000
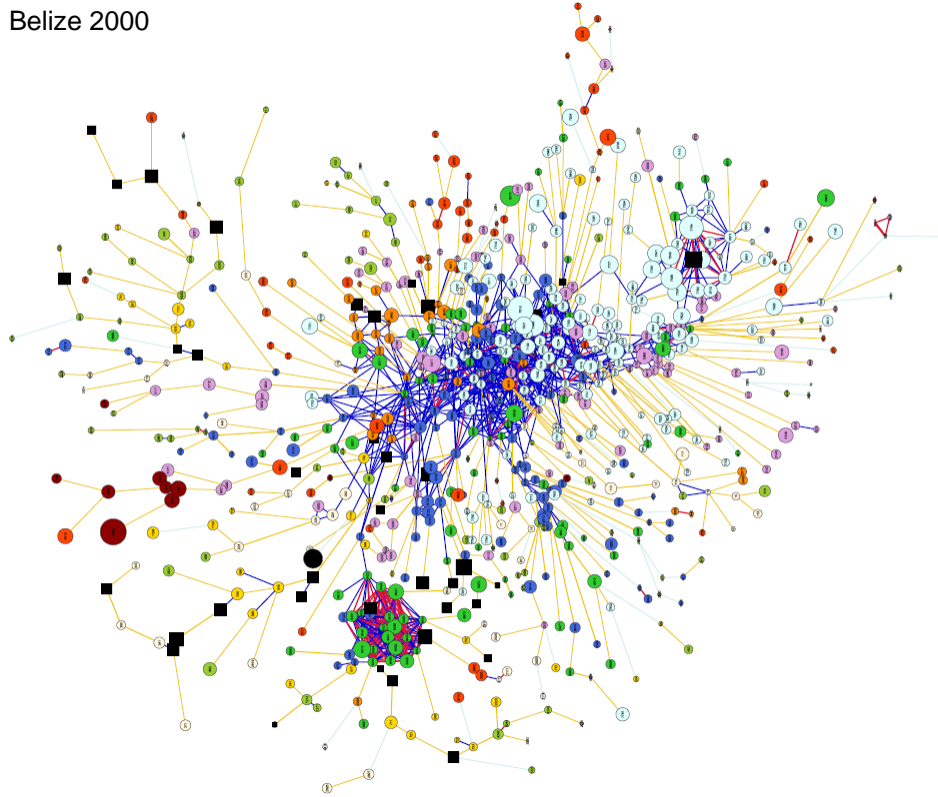
Source: Author's Calculations

Belize's production is highly peripheral, which is not unusual for developing countries, and sparse, which is not unusual for small states. The country's productive structure, at least relating to exports, is in the agriculture and mariculture areas of the space, along with some textile goods, although this industry is disappearing from the country (MOF 2007). The isolated cases of production in the industrial core of the space are in automotive component manufacturing, which according to the Ministry of Finance has never occurred in the country, suggesting that it is simply noise in the export data.

Consistent with the conclusions reached above, we can see that although production is peripheral, there are other peripheral products in the areas of agriculture and mariculture that are nearby and have not yet been exploited. We can identify these sectors by looking at the 'low hanging fruit' from the point of view of Belize. This is accomplished by using the proximity metric to determine how close any particular product is to a country's export basket as a whole, or in other words how 'dense' the country's production is around any particular product. This variable, which we call density, is the distance of good i from country c's export basket at time t. It is the sum of all paths leading to the product in which the country is present, divided by the sum of all paths leading to the product. Density varies from 0 to 1, with higher values indicating that the country has achieved comparative advantage in many nearby products, and therefore should be more likely to export that good in the future.

$$density_{i,c,t} = \left(\frac{\sum_k \varphi_{i,k,t} x_{c,k,t}}{\sum_k \varphi_{i,k,t}} \right)$$

Hausmann and Klinger (2007) show that this measure of density is highly significant in predicting how a country's productive structure will shift over time: countries are much more likely to move to products that have a higher density, meaning they are *closer* to their current production. Below we list the low hanging fruit from Belize's point of view. These are the products not currently exported with comparative advantage, but with the highest densities.

Low Hanging Fruit

Product Code	Product Name	Exports (US M)	World Market (US B)	PRODY (PPP)	Density
1801	Cocoa beans, whole or broken, raw o	0.03	1.03	2243	0.058
1207	Other oil seeds and oleaginous frui	0.07	1.14	3030	0.054
304	Fish fillets and other fish meat, f	0.60	10.96	13627	0.054
4407	Wood sawn or chipped lengthwise, sl	1.00	29.29	13218	0.049
305	Fish,salted,dried...;smoked fish;fi	0.00	3.41	21799	0.048
714	Roots and tubers with high starch c	0.00	0.65	6124	0.048
1704	Sugar confectionery (incl. white ch	0.14	6.07	10513	0.048
3401	Soap; organic surface-active produc	0.00	3.95	5570	0.047
804	Dates, figs, pineapples...etc, fres	0.00	3.05	6692	0.046
302	Fish, fresh or chilled (excl. those	0.00	8.11	12231	0.046
709	Other vegetables, fresh or chilled	0.12	7.00	10274	0.046
2302	Brans, sharps and other residues, d	0.02	0.51	6508	0.046
1604	Prepared or preserved fish; caviar	0.00	7.91	8581	0.045
904	Pepper of the genus Piper, Capiscum	0.00	0.93	5924	0.045
508	Coral; shells of molluscs, crustace	0.12	0.09	11269	0.045
6305	Sacks and bags, used for packing go	0.00	2.02	7260	0.045
2301	Flours, etc, of meat, fish, etc, un		2.94	15027	0.045
106	Other live animals, nes	0.00	0.54	9384	0.044
1511	Palm oil and its fractions		9.27	5323	0.044
901	Coffee; coffee husks and skins; cof	0.00	10.57	2814	0.044
1101	Wheat or meslin flour	0.00	2.02	5652	0.043
307	Molluscs & aquatic invertebrates,ne	0.00	5.49	7883	0.043
402	Milk and cream, concentrated or swe	0.00	10.40	13162	0.043
711	Vegetables provisionally preserved,	0.04	0.44	3106	0.042
4409	Wood, continuously shaped along any	0.18	4.37	12601	0.042

Source: Author's Calculations

The low-hanging fruit in Belize is in agriculture: non-traditional agriculture, forest products, processed foods, and mariculture. Being 'nearby' is not necessarily the only desirable characteristic. It is also desirable that the product be 'sophisticated', that is, have a PRODY greater than the country's EXPY so that its successful production would represent growth-enhancing upgrading of the export basket. A third relevant characteristic is the size of the world market: the size of the prize if the country is successful. Finally, we can see from the maps of the product space that products also have a strategic value: some are more connected to other new products than others,

meaning they would themselves generate further opportunities for structural transformation.

In order to combine all of these metrics to identify high-potential sectors for Belize, we begin with the set of products that are closest, having a density at least 2.5 standard deviations above the mean. Among this lowest-hanging fruit, we focus only on products with a PRODY greater than EXPY, and then aggregate to the sector (ISICr2) level using both strategic value and world market size as weights. The result is a picture of the efficient frontier among the closest products. We then decrease the density cutoff to observe how the efficient frontier changes as jumps of further distances are considered. The results are shown below.

**Nearby Efficient Frontier (Density > μ+2.5σ)
Weighted by World Trade**

■ Ocean and coastal fishing

■ Canning, preserving and processing of fish, crustacea and similar foods

□ Manufacture of dairy products

□ Agricultural and livestock production

■ Canning and preserving of fruits and vegetables

■ Slaughtering, preparing and preserving meat

■ Manufacture of made-up textile goods except wea ing apparel

□ Hunting, trapping and game propagation

**Nearby Efficient Frontier (Density > μ+2.5σ)
Weighted by Strategic Value**

■ Ocean and coastal fishing

■ Canning, preserving and processing of fish, crustacea and similar foods

■ Canning and preserving of fruits and vegetables

□ Manufacture of dairy products

□ Agricultural and livestock production

■ Slaughtering, preparing and preserving meat

■ Manufacture of made-up textile goods except wea ing apparel

□ Hunting, trapping and game propagation

Nearby Efficient Frontier (Density > μ+2σ)
Weighted by World Trade

- ■ Manufacture of wearing apparel, except footwear
- ■ Ocean and coastal fishing
- □ Sort drinks and carbonated waters industries
- □ Canning and preserving of fruits and vegetables
- ■ Manufacture of bakery products
- ■ Tobacco manufactures
- ■ Iron and steel basic industries
- □ Manufacture of prepared animal feeds
- ■ Sawmille, planing and other wood mills
- ■ Canning, preserving and processing of fish, crustacea and similar foods
- ■ Manufacture of dairy products
- ■ Agricultural and livestock production
- ■ Non-ferrous metal basic industries
- ■ Manufacture of fertilizers and pesticides
- ■ Slaughtering, preparing and preserving meat

Nearby Efficient Frontier (Density > μ+2σ)
Weighted by Strategic Value

- ■ Manufacture of wearing apparel, except footwear
- □ Canning and preserving of fruits and vegetables
- ■ Agricultural and livestock production
- ■ Ocean and coastal fishing
- ■ Iron and steel basic industries
- ■ Canning, preserving and processing of fish, crustacea and similar foods
- ■ Manufacture of bakery products
- □ Manufacture of prepared animal feeds
- ■ Manufacture of food products not elsewhere classified
- ■ Manufacture of pottery, china and earthenware
- ■ Non-ferrous metal basic industries
- ■ Cordage, rope and twine industries
- ■ Manufacture of glass and glass products
- ■ Sawmille, planing and other wood mills
- ■ Spinning, weawing and finishing textiles

Nearby Efficient Frontier (Density > μ+1.5σ)
Weighted by World Trade

- Manufacture of wearing apparel, except footwear
- Manufacture of electrical apparatus and supplies not elsewhere classified
- Manufacture of plastic products not elsewhere classified
- Goods not elsewhere classified
- Ocean and coastal fishing
- Canning and preserving of fruits and vegetables
- Agricultural and livestock production
- Manufacture of bakery products
- Sort drings and carbonated waters industries
- Slaughtering, preparing and preserving meat
- Tobacco manufactures
- Non-ferrous metal basic industries
- Manufacture of containers and boxes of paper and paperboard
- Iron and steel basic industries
- Manufacture of prepared animal feeds

Nearby Efficient Frontier (Density > μ+1.5σ)
Weighted by Strategic Value

- Manufacture of wearing apparel, except footwear
- Agricultural and livestock production
- Canning and preserving of fruits and vegetables
- Manufacture of food products not elsewhere classified
- Slaughtering, preparing and preserving meat
- Non-ferrous metal basic industries
- Ocean and coastal fishing
- Grain mill products
- Cordage, rope and twine industries
- Manufacture of bakery products
- Iron and steel basic industries
- Manufacture of chemical products not elsewhere classified
- Sort drings and carbonated waters industries
- Canning, preserving and processing of fish, crustacea and similar foods
- Manufacture of wooden and cane containers and small can ware

Source: Author's calculations

Allowing for longer jumps adds some manufacturing sectors to the efficient frontier, namely apparel and electronics. But there are so many opportunities in even closer products, as compared to Belize's size, that even a medium-term growth strategy need not consider far jumps. And as mentioned above, there is no confusion as to what these

nearby sectors are, as this list is surprisingly consistent with the priority sectors[3] identified in the chamber of commerce's investment guide, and the government's list of strategic sectors.

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[3] Obviously, only those sectors that appear in merchandise export data. The product space analysis is only on merchandise exports, and does not incorporate services such as call centers and tourism, which have been recent successes in Belize, because of data constraints.

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