Millennium Challenge Corporation

Guatemala Constraints Analysis Report 2013

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An Analysis prepared by the Government of Guatemala and the Millennium Challenge Corporation of the United States of America for the Development of a Millennium Challenge Threshold Program

2013

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I.   Executive Summary

Introduction and Background

In December 2012, MCC's Board of Directors selected Guatemala for a Threshold Program. As MCC's first step in designing a Program, it conducted an analysis of Guatemala's binding constraints to economic growth. The constraints analysis (CA) surveys the landscape of Guatemala's economy by collecting data, conducting on-site interviews with stakeholders, engaging with government counterparts, and performing a series of empirical tests to identify potential bottlenecks that limit private investment and ultimately hamper the country's growth and poverty reduction.

Following the end of its three decades of internal conflict in 1996, Guatemala has grown steadily but slowly (1.3 percent per capita annually). Moreover, the benefits of this stability and growth are unevenly spread across the country's geography and population, with rural and indigenous segments experiencing disproportionately high rates of poverty, malnutrition, education, infrastructure, security, and other public services.

The CA identified a variety of candidate constraints to growth, guided by the growth diagnostics methodology proposed in Haussman, Rodrik, and Velasco's *Growth Diagnostic* (HRV, 2005), which presents a typology of factors that potentially affect private investment in an economy. From the results of the analysis, two factors emerged as the most binding constraints to Guatemala's growth: low and unequal levels of human capital and weak rule of law.

Low and Unequal Human Capital

Human capital broadly refers to the capacity of workers to produce and create goods and services. Vital to economic growth, this capacity derives from two major sources: (1) workers' physical ability to learn and work via sound nutrition and health and (2) workers' ability to understand, critically think, operate and manipulate technologies, and otherwise perform complex tasks as a result of formal training and education. Guatemala's low quantity and quality of health and education services constrain the country's economic growth and the greatest impacts are felt among females, rural, and indigenous populations.

Chronic child malnutrition is Guatemala's greatest health challenge, afflicting nearly 50% of the country's children and pushing its child mortality rate to exceed the Latin America and the Caribbean (LAC) average by 50%. Apart from the direct harm to children's physical health, malnutrition leads to fewer years of schooling, lower IQs, worse language skills, and lower incomes as adults, revealing the condition's high cost to society. Estimates suggest Guatemala's malnutrition reduces productivity equal to 10% of GDP.

Compounding malnutrition's effects is Guatemala's weak education system. Currently, the average Guatemalan has less than 5 years of formal education, and only about 40% of 18 year olds complete high school. Less than half of students in Guatemala's schools perform at their grade level in reading and math, revealing troubling deficiencies in the quality of education they receive. These outcomes persist in spite of recent econometric and survey evidence suggesting high private sector demand for educated workers. Indeed, while Guatemala succeeded for decades in exploiting natural resources using unskilled labor, the country's aspiration to improve competitiveness, diversification and ultimately its growth depends heavily on improving the quality of education and producing a more highly skilled workforce.

Weak Rule of Law

Economic growth also depends on the "appropriability" of returns, i.e. how much profit investors can keep. Low appropriability can arise from a variety of sources, including macroeconomic instability, high tax rates, and, in the case of Guatemala, poor governance and institutions, a catch-all term that spans political stability, regulatory regimes, and rule of law. Among these, Guatemala's weak rule of law stands out, underlying inefficient, inconsistent and unfair commercial legal processes, high rates of crime, and land-based social conflicts. Weak rule of law adds costs and uncertainty to investment projects and reduces private sector investment in the country.

Guatemala's commercial legal system is slow, subject to improper influence, and costly to businesses. Contracts can go unenforced, and surveys suggest little faith in the fairness of the courts. Minority shareholder rights remain unprotected as are intellectual property rights. According to a variety of reports, Guatemala's legal system scores poorly and ranks well below the average for Latin America and the Caribbean. In short, the uncertainties and losses owing to Guatemala's legal climate for business ultimate discourages investment.

A larger issue is violent crime. Similar to its neighbors in Central America, Guatemala's rate of violent crime is among the world's highest. Violence, often the result of organized gang activity, not only poses immediate costs to life and limb but also raises the costs of investment due to expenses for security, insurance, and other materials. Nearly 8% of the country's GDP goes to crime-related costs, a tremendous displacement of otherwise productive resources. And estimates suggest a 10% reduction in violence could promote annual per capita economic growth by 0.7%. Naturally, such costs and risks discourage investment in Guatemala and constrain the country's economic growth.

Finally, unresolved land use and property rights continue to frustrate private investment, particularly in rural areas. Guatemala has one of the world's most unequal distribution of land ownership, a cause and continuing legacy of its multi-decade civil war. Conflicts resulting from land invasions, evictions, and disputes over underground rights have emerged between indigenous agrarian populations and outside investors in the mineral extraction industry as well as others. Without well-defined and enforced property and land rights, land-intensive investments will remain hampered, and private firms, particularly foreign-owned, will seek opportunities elsewhere.

Other Constraints Considered

In addition to the binding constraints, MCC considered a variety of other candidate constraints described in HRV (2005), including the cost of finance and its ease of access, macroeconomic variables including tax and exchange rates, labor law, a host of governance and regulatory conditions. Across the board, while none of these elements were particularly strong or favorable to investment, none appeared to constrain investment to the same degree as human capital and rule of law. That said, a recurring theme throughout the team's research was the underlying effect and reach of corruption throughout Guatemala's institutions, harming faith in the public sector and adding costs to the private sector.

Conclusion

Without educated, skilled workers, firms cannot produce, innovate, and compete successfully. And weak rule of law deprives economies of the investments necessary for growth. In Guatemala, the available evidence points to low and unequal levels of human capital and weak rule of law as the two most binding

constraints to economic growth. The effects of corruption across all three branches of government underpin much of this weakness, and an additional contributor appears to be the federal government's inability to raise funds (i.e. taxes) to finance productive public sector investments, particularly in education.

II. Introduction

Background

In December 2012, MCC's Board of directors selected Guatemala for a Threshold Program. In collaboration with the Government of Guatemala, MCC conducted a country-wide economic analysis in order to identify the most binding constraints to private investment. The analysis builds on the premise that private investment and entrepreneurship are primary drivers of sustained economic growth that bring about job creation and poverty alleviation. The government of Guatemala and MCC acknowledge the importance of the private sector to reach the goal of reducing poverty through economic growth.

Using the growth diagnostic methodology proposed by Hausmann, Rodrik, and Velasco (HRV, 2005), the Constraints Analysis (CA) offers a systematic, data-driven approach to detect constraints to private investment, and in the process, identifies which ones are most binding. While the CA focuses on broad-based constraints to the entire country, it also attempts to address questions of equity and inclusivity by disaggregating results along key population dimensions, e.g., geography, ethnicity, and gender. The CA does not dictate specific projects or activities to be funded by MCC. Rather, the CA lays the groundwork for subsequent investigation into the identification and prioritization of investment and intervention opportunities. For Threshold Programs, like the one in Guatemala, interventions generally revolve around policy and institutional reforms that target a binding constraint.

This CA builds on previous work, including the Inter-American Development Bank's recent analysis "Guatemala and the path to growth: a revision of the diagnostic" (Armendariz et al, 2012) and research by private consultants with Dalberg International. These CA's authors also benefited from conversations and consultations with three important groups: (1) the staff of several ministries and government agencies; (2) the private sector, to better understand the constraints that they perceive in operating and expanding their businesses, and entering new lines of business; and (3) civil society, to obtain insight into the major obstacles that limit women, indigenous peoples, and minorities from accessing economic opportunities. See Appendix for more details. The team thanks all the participants for their excellent cooperation and openness in sharing information that was vital to drafting this report.

This report presents an overview of Guatemala's economy and society, summarizes the main findings of the CA, outlines and explores the binding constraints in greater detail, and dedicates a brief section to other aspects of the economy judged to be less- or non-binding.

Growth and Poverty in Guatemala

Identifying constraints to Guatemala's economic growth requires an understanding of the country's recent history, economy, and politics. Guatemala's multi-decade internal conflict (1960-1996) figures prominently in this landscape. In the conflict's wake, the country has suffered from violence, gangs, and organized crime, which disrupted the country's security, economy, and social order. The Peace Accords of 1996 offered an inclusive agenda for generating economic growth and reducing inequalities, but inadequate implementation and funding has hindered progress. Meanwhile, the country's indigenous and rural

communities, already beset with 200,000 deaths and disappearances over the period of the conflict, presently endures deepening inequities in income, education, and health. These features arise across multiple dimensions of Guatemala's economy and its constraints.

Macroeconomic Overview

Guatemala's per capita income in 2012 was around $3,100, one-third the LAC average, qualifying it as a lower middle income country (LMIC).[1] From 2007 to 2012, per capita income grew an average 1.3% per year, a modest rate in part due to the global financial crisis and two natural disasters in 2010. Guatemala's population also grew quickly, 2.2% annually, reaching 14.8 million in 2012. The capital, Guatemala City, and its surrounding metropolitan area are home to around 2.6 million inhabitants (Figure 1).

Figure 1 Map of Guatemala

Source: CIA World Fact Book

Agriculture, foodstuffs, and textiles compose a large portion of the economy, but Guatemala's service sector has rapidly grown to become the economy's largest, with activities in finance, communication, transport, and energy. This structural transformation has led to population growth in Guatemala City and its surrounding areas, becoming home to a concentration of educated workers and productive firms. Outside the capital region, however, labor-intensive agriculture and other sectors remain dominant, and the population receives little infrastructure investment and has low access to basic services.

Beginning in the mid-1980s, Guatemala pursued a strategy of export promotion and trade liberalization, joining the WTO in 1995 and signing various free trade agreements since then. Over the period 2001 to 2012, exports nearly tripled, reaching $10 billion, and imports more than doubled to nearly $14 billion. Exports consist primarily of agricultural products and textiles, but recent years have seen extractive resources (minerals, metals, etc.) account for a greater share (Figure 2). The US, Central America, and Latin America continue to be Guatemala's major trading partners, but Asian imports, particularly from China, have increased substantially during the last decade.

Over the last several years, Guatemala has experienced low levels of investment. Gross fixed capital formation (GFCF) and foreign direct investment (FDI) were about 14% and 2.5% of GDP, respectively in 2013.[2] Although FDI has increased within specific sectors— these include agriculture, mining and banking— both GFCF and FDI remain below LMIC and LAC averages (GFCF: 25.0% and 20.6%, FDI: 5.1% and 5.2%, respectively) and the lowest in the region, except for El Salvador. Remittances are another significant source of funds entering the country ($6 billion, 10% of GDP). With over 10% of Guatemalans estimated to be living in the United States, remittances have increased steadily during the past decade. About 50% of remittances go to consumption (International Organization for Migration, 2010).

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[1] Values based on year 2010 $US.
[2] Data on investments come primarily from World Bank National Accounts.

Figure 2 Guatemala Export Composition, 2011

Vegetable Products	Textiles	Chemical Products	Mineral Products	Metals

Vegetable Products 32%

Textiles 18%

Foodstuffs 16%

Chemical Products 6.3%

Mineral Products 5.6%

Metals 5.3%

Animal and Vegetable Bi-Products 5.3%

Paper Goods 1.7%

Animal Products 1.1%

Precious Metals 1.0%

Plastics and Rubbers 4.0%

Miscellaneous 0.92%

Machines 0.85%

Wood... 0.60%

Stone and Glass

Animal...

In terms of the country's political order, a new constitution and democratic elections in 1986 ushered in a fresh chapter of governance, and while the Peace Accords of 1996 helped reduce political instability, the failure to carry out its promises to underserved populations has left deep social inequalities intact. In 2011, President Otto Perez Molina became the ninth democratically elected president since 1986. Four-year presidential term limits constrain the country from pursuing a long-term national agenda, however, and no political party has remained in power for consecutive terms. Currently, 16 distinct political parties are represented in Congress.

Poverty, Demographics, and Gender

Guatemala has one of the most unequal income distributions in the world (Gini coefficient = 54.6). According to the World Bank's Development Research Group, the highest income quintile claimed nearly 60% of the national income in 2006, the latest year for which information is available, while only 3% was held by the lowest quintile. This left 37% for the remaining three quintiles, implying a relatively small middle class. Over half of the population lives in poverty and 14% in extreme poverty, with the greatest incidence (80%) found in Guatemala's rural communities (World Development Indicators, 2012). In general, rural inhabitants, women, and self-identified indigenous populations earn lower incomes in Guatemala. Rural communities overwhelmingly depend on agriculture for their livelihoods, but the combination of unequal land distribution and lack of access to finance, technical assistance, and markets limit their income potential from agriculture, and low levels of education constrain their abilities to pursue higher wage employment in cities.

Guatemala's population is very young, with the highest fertility rate (3.8) and population growth rate (2.5) in Latin America. Over 50% of the population is under 19 years of age, and nearly 70% is under 30 (Figure 3). Not surprisingly, family sizes are large, with rural households averaging over 6.4 people and urban households at 5.6. With structural transformation comes increasing urbanization, and half of Guatemala's population now lives in cities, though this is far below the rest of Latin America. In terms of ethnic make-up, about 59% of Guatemalans identify as Ladino or mestizo, about 40% indigenous Maya, and a small minority as Garifuna (afro-Guatemalans).[3] Besides Spanish, 23 native languages are spoken in the country.

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[3] More information across various dimensions of Guatemala's population are available from Instituto Nacional de Estadistica Guatemala and its Resultados del Censo.

Figure 3 Guatemala Population Pyramid, 2012
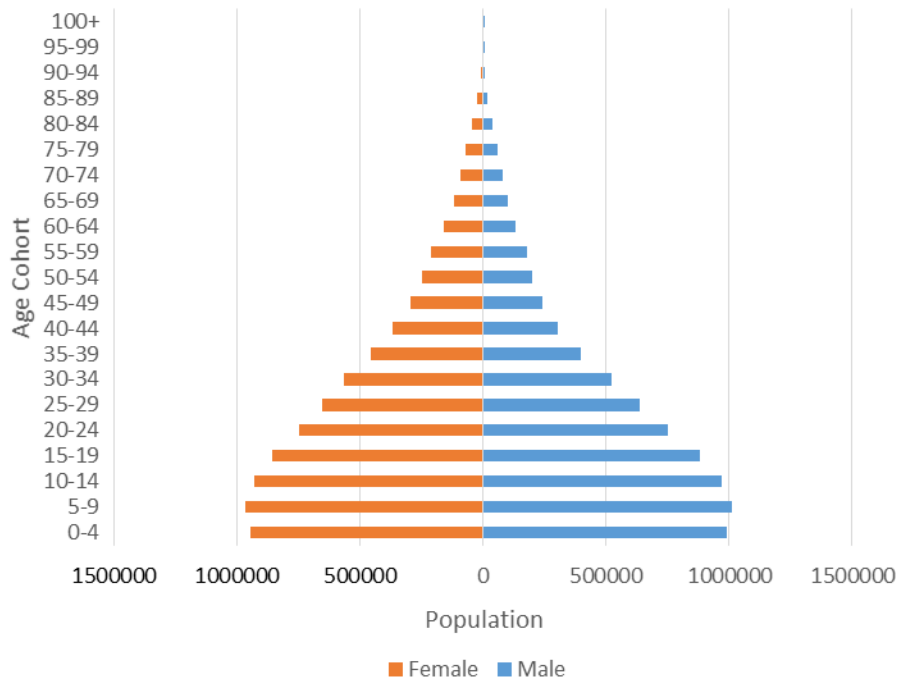
Source: United Nations, Department of Economic and Social Affairs, Population Division.

Gender differences emerge in meaningful ways throughout Guatemala's economy. While legal obstacles to full women's participation in the labor force have been removed, strong cultural traditions remain. Women are typically responsible for child rearing, housework, and caring for other family members, while men are free to pursue income-earning opportunities outside the home. Because of their extra burdens at home, only 51% of women participated in the labor force in 2011. For men, it was 94%. Outside of agriculture, female workers concentrate in commerce, education, health, and increasingly in export-oriented textile manufacturing *maquilas*, lower-paying professions viewed as better suited for women. Few women climb to positions of management or ownership.

On average, employed women in Guatemala earn about 65% of what men earn, across all sectors of the economy. Low women's wages in agriculture are particularly striking, given the high rates of rural male outmigration to urban and foreign destinations. A similar gap exists between indigenous and non-indigenous workers. Much of it might be explained by systematic differences in human capital, work experience, and location, but Guatemala's long history of gender and ethnic discrimination may also play a role.

Summary of Findings

Based on interviews with stakeholders, analysis of available data, published research, and the HRV growth diagnostic methodology, the Government of Guatemala and MCC concluded that Guatemala's low returns to private investment owe primarily to two binding constraints: (1) low and unequal levels of human capital

and (2) weak rule of law. Furthermore, inadequate government resources underlie the persistence of these constraints, in part due to the government's inability to collect tax revenues as well as challenges of corruption. Figure 4 summarizes these findings and highlights the relationships among the observed outcomes, the constraints, and the underlying factors.

Figure 4 Binding Constraints to Growth in Guatemala and Underlying Factors
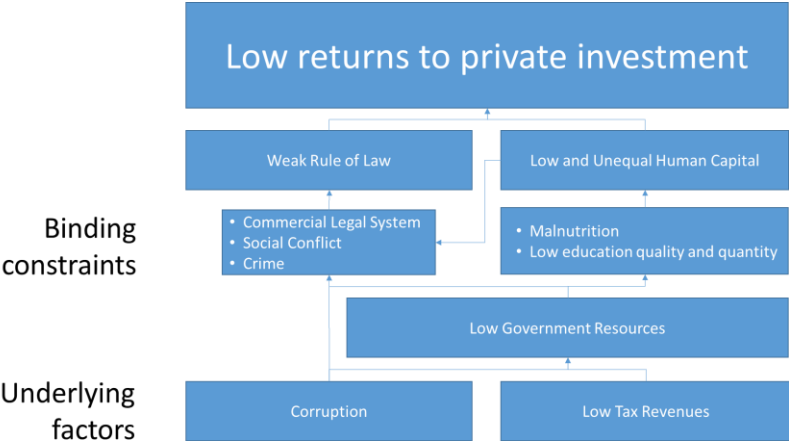
In short, the CA identified as binding constraints (1) **low and unequal human capital**, which refers to the low quantity and quality of education, high levels of malnutrition, and their disproportionate incidence on rural, indigenous populations, all of which reduce the supply of a healthy, educated workforce, and (2) **weak rule of law**, which entails (i) a weak commercial legal system, namely an inefficient and corrupt judiciary; (ii) high levels of crime that deter large investors from entering and pose costly burdens on small and medium size firms; and (iii) land-based social conflict between rural, indigenous communities and large investors in natural resource intensive industries. Underlying these constraints are the Guatemalan government's scarce resources for funding public sector investments and challenges of corruption. The resource constraint itself owes to low tax revenues, but here, corruption also plays a supporting role.

III.   Binding Constraints

Low and Unequal Levels of Human Capital

Human capital refers to the knowledge, skills, and creative capacities people develop and acquire throughout their life. Commonly measured in terms of early life health indicators and education outcomes, human capital often appears as a factor of production in models of economic growth (Barro, 1991). Improved human capital indicators, usually reflected in education, have been linked to increases in productivity and per capita income (Mankiw et al., 1992), and higher levels of human capital are thought to facilitate the adoption of new technologies (Barro, 1991; Benhabib and Spiegel, 1994, 2002; and Caselli and Coleman, 2005), and support reductions in inequality, crime and social conflict (Artana et al., 2007).

Overall, Guatemala's human capital indicators highlight an important deficiencies in the coverage and quality of education and health services and reveal wide gaps between rural, indigenous communities and their urban, non-indigenous counterparts. The analysis concludes that low and unequal levels of human

capital, in terms of both health and education, is a binding constraint to private investment and thus limits economic growth in Guatemala.

Health

Guatemala achieved notable improvements on key health indicators from 2000 – 2011, but child and maternal mortality and chronic malnutrition remain their greatest health challenges (Table 1). In particular, Guatemala has the third highest prevalence of chronic malnutrition in the world afflicting over 48% of children under the age of five. A result of poor breastfeeding and complementary feeding practices, high incidence of infections, and high rates of diarrhea, malnutrition traces its roots to food insecurity, inadequate care of the mother and child, and lack of access to improved water, sanitation, and quality health care. Not surprisingly, large disparities in malnutrition emerge across geography, ethnicity, education, income, and family planning practices (Figure 5). Rural areas and indigenous populations experience far worse child nutrition outcomes than their urban and Ladino counterparts. A mother's level of education and the income of a child's family drive large differences as well.

**Table 1** Major Health Indicators for Guatemala, LAC, and LMICs

	Guatemala				Latin America and the Caribbean				Lower Middle Income Countries			
	2000	2005	2010	2011	2000	2005	2010	2011	2000	2005	2010	2011
Prevalence of chronic malnutrition, height for age (% of children under 5 years of age)	50	N/A	48*	N/A	16.7	14.2	12.1	11.7	44.4	40.4	36.5	35.7
Mortality rate in children under 5 years of age (per 1,000 live births)	50.7	41.4	34.5	33.2	34	25.8	22.3	19.1	87.8	74.8	64.4	62.4
Maternal mortality rate (per 100,000 live births)	130	130	120	N/A	100	87.4	80.1	N/A	410	330	260	N/A
Deliveries assisted by trained personnel (%)	N/A	N/A	51.5*	N/A	85.7	N/A	N/A	N/A	47.9	N/A	56.8*	N/A
Fertility rate (births per woman)	4.8	4.4	4	3.9	2.6	2.4	2.2	2.2	3.4	3.1	2.9	2.9
Life expectancy at birth (years)	67.7	69.4	70.8	71.1	71.6	72.8	74.1	74.4	62.4	63.9	65.5	65.8

Source: Data from World Bank, World Development Indicators, * 2009 data, N/A = Not available.
Note: Height for age cutoffs are two standard deviations below the median height for age of the reference population. World Health Organization standards use a representative sample across all continents, with children who have received exclusive breastfeeding and ideal health care. Worldwide, linear stunting is the

most prevalent form of delayed growth, which begins at birth until two years of age and despite weight gain, stunting becomes permanent (UNICEF, 2009).

Figure 5 Chronic Malnutrition by Demographics, 2008-09
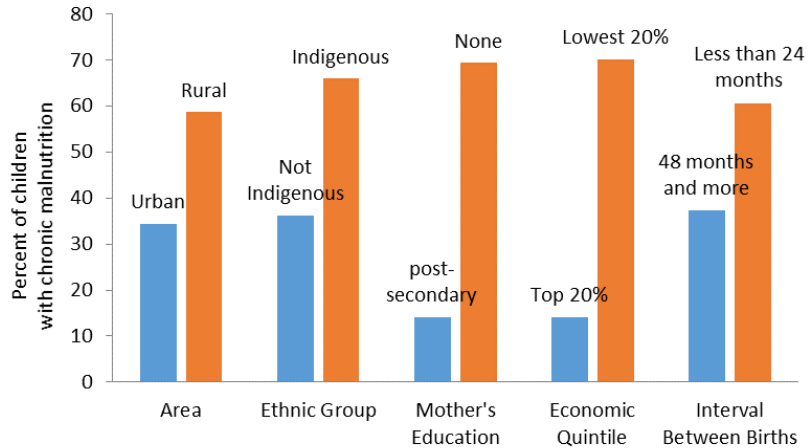
Source: ENSMI 2008/09 data, chronic malnutrition definition from WHO.
Note: Malnutrition estimates are for children between 3 and 59 months of age.

The effects of chronic child malnutrition are substantial. In Guatemala, malnutrition was associated with nearly 40% of deaths among children under five in 2004, and over one million deaths among that population between 1940 and 2004 (Martinez and Fernandez, 2007). Malnutrition also causes tens of thousands of additional cases of acute diarrheal diseases (ADD), acute respiratory infections (ARI), and iron deficiency anemia, with the biggest effects felt in children's first year of life. Children that survive obtain 2.4 fewer years of schooling than those that are well-nourished, are more likely to repeat a grade, have lower IQs, and weaker language skills. Malnutrition's effects on cognition specifically harms education outcomes, consequently reducing long-term productivity and earnings. The total social costs of chronic malnutrition for Guatemala exceed every other country in Central America and the Dominican Republic.

In one long-term longitudinal study of four Guatemalan villages, men who received nutritional supplements at an early age earned hourly wages 46% higher than their counterparts (Hoddinott et al., 2008). In a broader cross-country study, estimates of malnutrition's economic harm due to fewer hours worked and less education equaled 10% of Guatemala's GDP (Table 2).

Table 2 Effects of Malnutrition on Guatemalan Productivity

	Units	Value in US$ (millions)	Percent loss in GDP in 2004
Work hours lost in 2004	983,303,605	1,158	4%
Fewer years of schooling	2.4	1,668	6%
Total		2,826	10%

Source: Martinez and Fernandez (2007)
Note: Costs to productivity are calculated by taking into account the economic value of the hours of work lost due to death and from lower levels of education attained. This was calculated on the basis of official information and recorded education costs: income and schooling from household surveys in each country.

Education

Guatemala performs poorly in nearly all education related indicators, including low levels of coverage, student enrollment, completion, and performance, as well as poor quality of teachers. Persistent gaps divide rural and urban inhabitants, men and women, as well as indigenous and non-indigenous populations on nearly all education-related indicators. At the same time, demand for a well-prepared, well-trained workforce remains high, as evidenced by increasing returns to education over the past 15 years and information obtained through private sector surveys and consultations.

Perhaps the broadest reflection of Guatemala's poor education system is its low rates of literacy. In 2011 only about three-fourths of the population over the age of 15 was literate, far below the LAC average (93%). Disaggregation by gender and ethnicity follow predictable patterns, revealing 84% of men are literate and just 70% of women. Only 56% of indigenous Guatemalans are literate compared to about 84% of non-indigenous.

To understand where Guatemala's education challenges lie, it helps to decompose outcomes into quantity and quality of schooling. Quantity describes the amount of time students receive formal education, usually in terms of years in school. Quality refers to the substance of instruction and learning that happens in schools. A common, albeit imperfect, measure for quality is standardized test performance.

Quantity of Schooling Guatemalans over the age of 15 receive an average 4.9 years of schooling, or less than an elementary school education. This is low, even relative to their income and regional peers (Figure 6). At the current rate of growth in years of schooling, Guatemala will reach the 2010 Latin American average in 60 years (CIEN, 2011). Significant differences in years of schooling also emerge by gender, geography, and ethnicity (Table 3). Guatemala will not likely experience further economic growth without an increase in its level of education.

Quantity of schooling outcomes depend on school availability, enrollment, and completion. In terms of school availability, a country's public resources are key to supplying its citizens with adequate quantities

of schools and teachers. On the positive side, Guatemala's government prioritizes education spending above all other activities, dedicating roughly 20% of its entire budget. Of this, 60% goes to primary education. Over the past 10 years, Guatemala has built thousands of schools and hired teachers to staff them (UIS UNESCO, 2013). But this spending as a share of GDP (2.8%) falls well below comparator countries in LAC and LMIC (5%). Adding in Guatemala's heavy private spending on education (2.4% of GDP) helps close the gap LAC, but the difference still amounts to about $508 million. In short, Guatemala's budgetary commitments, while laudable, do not adequately address the country's education shortfalls.
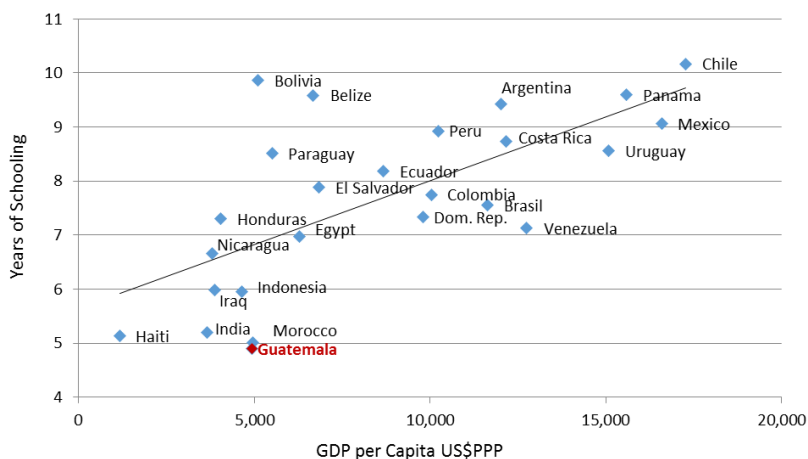

Figure 6 GDP per capita and Years of Schooling, 2010.

Source: Barro and Lee (2010). Note: Population is 15 years and older.

Table 3 Average Years of Schooling by Gender, Geography, and Ethnicity

| | Years of Schooling | | | |
	Rural	Urban	Indigenous	Non-indigenous
Women	3.16	6.54	2.94	6.11
Men	4.13	7.52	4.35	6.79

Source: Calculations based on ENCOVI (2011)

In terms of enrollment, the Government of Guatemala focus on primary education has helped the country achieve nearly universal enrollment (93%) for primary education (Table 4). However, lower and upper secondary education continue to receive less support, resulting in gross and net enrollment rates that fall well below LAC and LMIC averages. Private schools still account for about 33% of lower secondary enrollment and 69% of upper secondary (*diversificado*). Large disparities by geography and ethnicity at this level persist, with rural and indigenous communities experiencing much worse outcomes (Figure 7).[4] Gender gaps also remain (Figure 8). At pre-primary and primary levels, Guatemala and its comparators

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[4] Indigenous groups include the Maya, Garifuna and Xinca.

exhibit ratios close to 1, implying roughly equal rates of enrollment between boys and girls. However, at higher levels, Guatemala's female enrollment rates fall substantially below their male counterparts, in contrast to its regional and income peers.

Table 4 Education Indicators in Guatemala, Latin America and Lower Middle Income Countries

	Guatemala				LAC	LMIC
	2001	2004	2008	2011		
Gross enrollment rate of primary	104.2	112.3	114.1	111.9	112.5	105.4
Gross enrollment rate of lower secondary	45.3	53.4	62	70.3	101.5	84.4
Gross enrollment rate of upper secondary	33.6	41.2	47.3	37.9	76.6	61.6
Net enrollment rate of primary	85.9	92.3	95.4	92.8	93.8	89.5
Net enrollment rate of secondary	30.4	33.8	39.8	40	76.1	61
Gross completion rate of primary	N/A	70.4	78.3	82.2	92.3	80.2
Gross completion rate of lower secondary	N/A	N/A	36.1	40.1	75.5	70.8
Public spending on education (% of GDP)	N/A	1.32	3.07	2.8	4.97	4.99
Private primary enrollment	12.7	11.5	11.3	10.2	13.5	N/A
Private secondary enrollment	55.9	54.4	56	44.9	15.4	N/A

Source: UIS, UNESCO, MoE, and IDB. Notes: Gross enrollment accounts for all students enrolled in a level of education regardless of their age, while net enrollment includes only the age-appropriate students in a level of education (preschool is 5 to 6 years, primary is 7 to 12 years, middle school is 13 to 15 years, and high school 16 to 18 years). Gross enrollments that exceed net enrollments indicate internal educational inefficiency. UNESCO does not disaggregate net schooling rates into middle school and high school.

Statistics on higher education coverage are scarce. However, estimates of university level coverage rates including every sector (private, public, etc.), reveal gross and net coverage rates of 15.2% and 8.5%, respectively, far below comparators such as Panama (45%) and Mexico (32.8%) (ENCOVI, 2011).[5] And while Guatemala's higher education institutions are equally populated by men and women, indigenous students represent only 11.4% of Guatemala's total university enrollment.

Lastly, years of schooling depend on completion rates. Guatemala's public schools face significant failure and dropout challenges. In 2012, 82% of children completed their primary schooling, while only 40% completed lower secondary school (Guatemala Ministry of Education, 2012). High failure rates, ranging from one-fifth to one-third in each year of secondary school, force students to repeat years, delaying their productive years and adding costs to Guatemala's education system. Causes for failure and drop out include a lack of financial resources to cover transportation, textbooks, uniforms and tuitions, work obligations,

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[5] The reference group used includes individuals between the ages of 18 and 24.

distance to schools, and lack of interest, itself a reflection of the perceived value of schooling. Gender disparities arise here too, as girls may drop out due to early marriage and pregnancy.
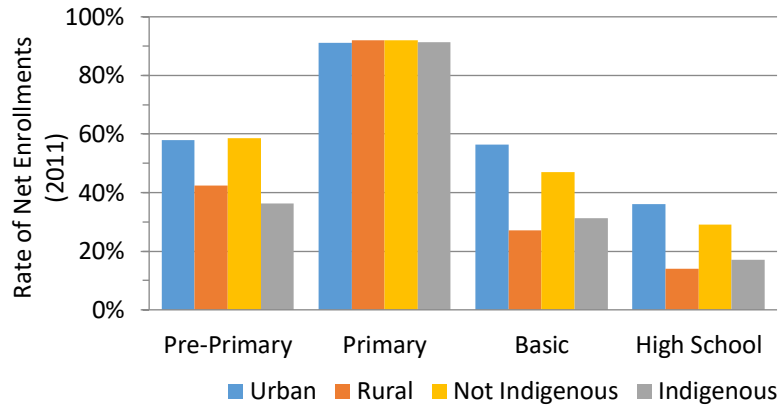
Figure 7 Rate of net coverage by residence and ethnicity, 2011

Source: Calculations based on data from ENCOVI (2011). Note: Coverage rate is the number of students enrolled in the education system according to their age, divided by the number of people in the population with that age. Coverage does not account for the grade in which the student is enrolled.
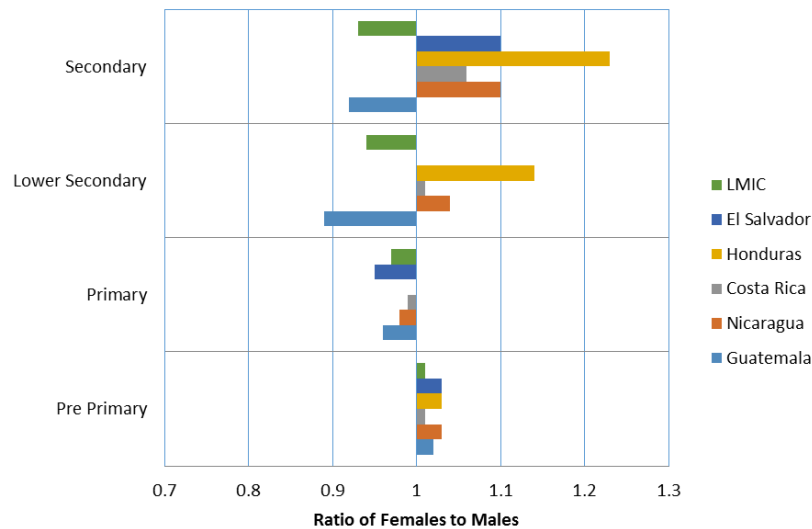

Figure 8 Education Gender Parity, 2010

Source: World Bank Education Statistics.

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Quality of Schooling Apart from years of schooling, the quality of education students receive strongly influences their long-run productivity (Schoellman, 2011). In Guatemala, results from performance exams and other indicators suggest low levels of quality in education at the primary level (Table 5). Across the board, less than half of first and sixth graders passed reading and math assessments, with rural students lagging well behind urban students, and indigenous students generally falling behind non-indigenous Ladinos.

Results at secondary education levels are even worse

Table 6). Passing rates for reading and math average about 24% and 7%, respectively. Rural areas generally lag behind their urban counterparts, though the gap seemingly matters less insomuch as the absolute levels for both are so low. Across schooling providers, including private options, the story of quality is similar, with very low rates of satisfactory achievement, particularly in mathematics.

Table 5 Primary School Test Rates of Satisfactory Achievement (%), 2010

		Area of Residence			Ethnicity			
		Total	Urban	Rural	Ladino	Maya	Xinca	Garifunas
Reading	First Grade	47.5	60.6	43.7	54.2	39.8	67.7	0.0
	Sixth Grade	30.1	45.9	23.5	39.8	14.4	18.8	12.4
Math	First Grade	46.3	59.8	42.4	52.8	39.1	14.1	0.0
	Sixth Grade	45.6	60.6	39.4	51.4	36.1	27.9	33.3

Source: DIGEDUCA, 2013. Note: First graders are a representative sample of 20,000 students. Sixth graders' results are from a census.

Table 6 High School Graduate Exam Rates of Satisfactory Achievement, 2012

	Total	Gender		Area		Sector			
		Female	Male	Urban	Rural	Official	Private	Co-op	Municipal
Reading	24.5	23.3	25.6	25.1	18.3	23.8	25.5	14.8	14.7
Math	7.3	5.0	9.5	7.5	5.7	6.0	8.0	3.3	1.8

Source: Calculations based on data from DIGEDUCA, 2013. Cooperative and Municipal schooling options are alternative publicly-funded schools outside the Ministry of Education's public school network. Note that the majority of high school students in Guatemala attend private institutions.

Cross-country comparisons reveal the extent of Guatemala's poor educational performance. According to the World Economic Forum's 2013 Global Competitiveness Report, Guatemala's quality of education system ranks 135 out of 148 countries and its quality of math and science education 139 of 148. Based on the Second Regional Comparative and Explanatory Study (SERCE) developed in 2006 by UNESCO/LLECE, a test administered to third and sixth graders across 15 Latin American countries,

Guatemala scored well below the regional average in reading and math.[6] Combining years of schooling with passing rates on the SERCE, Figure 9 reveals the large gap between Guatemala and its Latin American neighbors in years of schooling and educational quality outcomes.
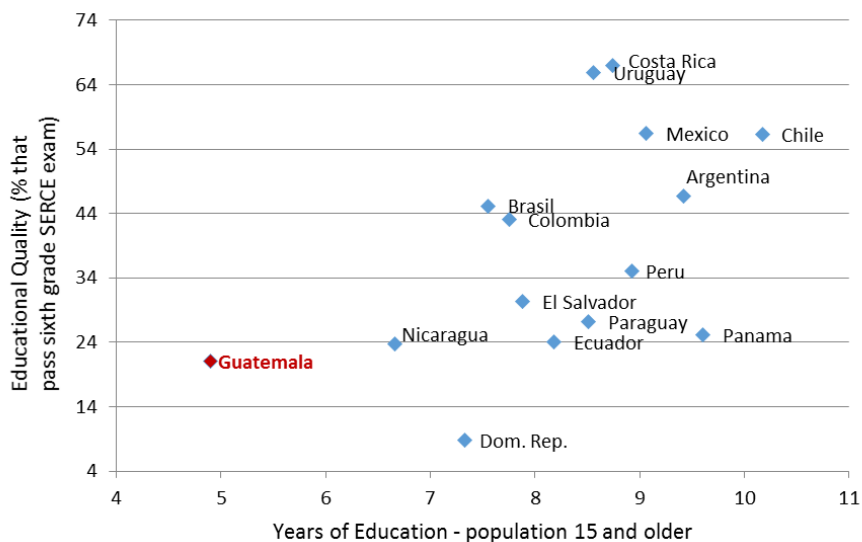

Figure 9 Education Quantity and Quality in Guatemala and LAC

Source: Barro and Lee, 2010; regional SERCE test data, UNESCO/LLECE, 2008. Note: Quality represents the number of sixth grade students in each country that passed the math or reading exam. Passing is defined as getting a grade of III or IV, and therefore does not include those who received a grade of 0, I, or II. The score reported here is the average passing rate in reading and math.

Teacher quality factors significantly in these outcomes. Until recently, teacher training did not extend beyond *escuelas normales*, high school level teacher training schools; in short, high school graduates were effectively teaching other primary and secondary school students. This system effectively perpetuated a pattern of low achievement among both students and their teachers. Not surprisingly, assessments of teachers' knowledge showed candidates passing 57% of the language and 37% of the math portions at the sixth grade level (CIEN, 2011). Although job candidates must complete competency tests, the results of those tests do not inform teacher hiring decisions, and Guatemala does not administer periodic teaching evaluations. In response to these conditions, Guatemala's Ministry of Education now requires teachers to additionally complete three years in college to obtain a degree as an elementary school teacher, but this reform has met resistance from some actors in this sector, especially students and owners of *escuelas normales*.

Employment Effects A review of the evidence suggests that Guatemalan workers with post-secondary education experience lower unemployment than their secondary-only counterparts (IIPE - UNESCO/OIE,

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[6] Guatemala is currently participating in the Third Comparative and Explanatory Test (TERCE), administered in 2013. It will be important to see how these outcomes compare to the 2006 study.

2013). Not surprisingly, gender and ethnicity gaps in employment exist but diminish with every additional year of education. Workers with post-secondary education also receive salaries instead of hourly wages more frequently (84%) than those with five or less years of schooling (52%).

Tests for Education as a Binding Constraint

To supplement the evidence above, MCC applied a variety of heuristic tests, based on the HRV (2005) methodology, to detect whether human capital— in this case, specifically education— is a binding constraint on Guatemala's economic growth.

Test 1: Is the shadow price of education high? Yes. When extra education generates high returns to an individual's income, this suggests that the supply of educated workers is low relative to demand. Comparing Guatemala's returns to education with its neighbors' and over time can offer additional context. To this end, MCC collected estimates from several studies measuring education returns across Latin America. Results from Mincer regressions appear in Table 7. In short, Guatemala's returns appear greater than the Latin American average. For example, based on the estimates in the first column, an extra year of education is associated with a 14.2% increase in an individual's income, compared to the 11.2% regional average.

Returns to education depend on both demand and supply side factors. On the demand side, a rapidly growing economy will stimulate demand for well-qualified, well-trained workers to occupy productive roles across different sectors, thus bidding up the price of their labor. But Guatemala's recent economic growth has been sluggish, suggesting that the returns to education are due to supply side factors, namely a relatively scarce supply of well-educated workers. Returns to secondary education remain high and have risen gradually since 1998, yet less than 40% of students complete lower secondary.

Test 2: Are changes in education associated with changes in GDP? Tentatively, yes. Data for such a test are scarce, given the nature of the education constraint and the time frame over which its effects might be detected. However, evidence points to a gradual relaxation in the education constraint in the form of government's investments in primary education and associated reductions in earnings premium that accrued to workers at that level. The results in Table 8 point to this outcome, as the returns to an extra year of education fell by nearly one-quarter over the period 1989 to 2011, most of which is due to gradually falling returns to primary school.

Test 3: Are Guatemalans by-passing the education constraint? Yes. Outside the formal K-12 education system, vocational and technical training (TVET) opportunities have emerged to fill perceived skills gaps in Guatemala's labor force. Large investments in TVET activities indicate an effort by students and firms to circumvent Guatemala's weak educational system. According to the 2010 World Bank Enterprise Survey for Guatemala, 82% of large companies provide training, reaching on average 68% of their employees, and paying for 70% of all costs. Additionally, MCC's consultations with stakeholders across a variety of high-impact and traditional sectors reveals low levels of education and significant skills gaps as a major constraint to growth. Within Guatemala's promising Business Process Outsourcing (BPO) sector, critical gaps include informational technology, English language, web design, and editing. BPO stakeholders report dedicating sizable resources to training new employees, but the risk of losing them to competitors limits their investments.

Apart from TVET activities, the high rates of private spending on education, particularly at higher levels of education, clearly demonstrates the public's awareness that government-provided schooling is

unavailable or inadequate for preparing students for modern, technical tasks and households' willingness to pursue alternative strategies for obtaining the relevant skills, whether through private schools or TVET programs.

Table 7 Mincer Equation Estimates of Returns to Education in Latin America

Country	Additional year of schooling[1]	Additional year of schooling[2]	Primary Completed[3]	Secondary Completed[3]	University Completed[3]
Argentina	0.107	0.091	0.05	0.10	0.13
Bolivia	0.073	0.113	0.05	0.05	0.21
Brazil	0.154	0.132	0.11	0.17	0.25
Chile	0.121	0.123	0.09	0.13	0.24
Colombia	0.145	0.119	0.05	0.10	0.13
Costa Rica	0.105	0.098	0.05	0.11	0.16
Dom. Rep.	0.078	0.068	N/A	N/A	N/A
Ecuador	0.098	0.135	N/A	N/A	N/A
El Salvador	0.096	0.105	0.07	0.11	0.18
Guatemala	0.142	0.136	0.09	0.16	0.16
Honduras	0.172	0.104	0.10	0.14	0.16
Mexico	0.141	0.126	0.05	0.11	0.17
Nicaragua	0.097	0.11	0.10	0.10	0.18
Panama	0.126	0.116	0.11	0.11	0.18
Peru	0.085	0.129	N/A	N/A	N/A
Paraguay	0.103	0.129	N/A	N/A	N/A
Uruguay	0.09	0.084	0.05	0.10	0.15
Venezuela	0.084	0.085	N/A	N/A	N/A
Average	0.112	0.114	0.08	0.12	0.18

Source: Artana, Auguste and Cuevas, 2007; Contreras and Gallegos, 2007. Notes: (1) Bils and Klenow (2000), data are men from 1988-1989, (2) Hausmann and Rodrik (2005), data are from 1998, (3) Contreras and Gallegos (2007), data are from 2002.

Table 8 Returns to Education Trends

Year	Additional Year of Schooling	Returns per year upon completing		
		Primary	Secondary	Tertiary
1989	0.142	N/A	N/A	N/A
1998	0.136	0.140	0.101	0.129
2002	0.137	0.121	0.136	0.201
2004	0.124	0.109	0.133	0.133
2011	0.110	0.080	0.153	0.109

Source: Artana et al., 2007; calculations based on data from ENCOVI 2011.

Test 4: Do low-skill sectors survive better than others? Arguably yes. Guatemala's agriculture, food, textiles, and minerals and metals sectors dominate its exports and require relatively low-skill labor, suggesting that the country's best performers have occupied sectors with low human capital needs. However, the country struggles to expand its current production and shift into higher value sub-sectors, with firms reporting an uneducated workforce as the main obstacle. Meanwhile, stakeholder interviews revealed that Guatemala's low labor quality pushed investors from new sectors such as BPO to choose El Salvador and Honduras, in spite of these countries' notoriously higher crime rates.

Based on the evidence and analysis completed in the CA, MCC identifies human capital as a binding constraint to private investment in Guatemala. The low quantity and quality of education services and the unequal distribution of these services, particularly to indigenous and rural communities, combined with the country's ongoing challenges with chronic malnutrition, significantly harms the country's economic growth.

Weak Rule of Law

A critical element of economic growth is the assurance that investors can keep their profits, i.e. high appropriability (Pritchett 2008). Without high appropriability, an economy attracts fewer and smaller investments as firms pursue more profitable opportunities elsewhere. Conditions that give rise to low appropriability include macroeconomic instability (e.g. price and exchange rate volatility, rapid inflation), burdensome tax rates and compliance, and low quality of governance and institutions (e.g. political instability, regulatory regimes). Within its governance and institutions, Guatemala's rule of law stands out for its weakness and impact on the country's private sector investment.

The World Governance Indicators (WGI) define Rule of Law as "the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence." According to the WGI's rule of law indicator (2012) Guatemala ranks lowest in Central America and well below the average performance of LMICs and the LAC region. And results have not changed since 1996, when the WGI first reported this indicator. In its examination of rule of law, the CA focused on Guatemala's

commercial legal system, crime, property rights and social conflict. The research team concludes that Guatemala's weak rule of law is a binding constraint to private investment and economic growth.

Commercial Legal System

Guatemala's rules and institutions for commercial dispute resolution are slow, subject to improper influence, and costly. The World Economic Forum's Global Competitiveness Index captures these features and compares them with Guatemala's Central American neighbors and the world average (Table 9). While the changes registered from year 2012 to 2013 are positive, the levels and corresponding rankings point to grave deficiencies in Guatemala's commercial legal framework. Closely linked to judicial independence, the WBES indicates that only about 20% of survey respondents agreed that the "court system is fair, impartial, and uncorrupted." Additionally, Guatemala performs worse than its LAC comparators as well as a broader cross-section of OECD countries across a variety of commercial legal dimensions: protecting investors, enforcing contracts, and resolving insolvency (Table 10).

Table 9 Guatemala Commercial Law Scores and Rankings

Measures of Commercial Law	Guatemala		Central America Average	World Average
	2012	2013		
Dispute Resolution Efficiency	3.1 (110)	3.3 (100)	3.8	3.8
Intellectual Property Protection	2.6 (121)	2.9 (111)	3.8	3.8
Protecting Minority Interests	3.7 (106)	4.0 (77)	4.2	4.2
Judicial Independence	2.9 (103)	3.0 (107)	3.9	3.9

Source: World Economic Forum Global Competitiveness Index, 2012-2013. Note: Scale ranges from 1 (worst) to 7 (best). Numbers in parentheses refer to Guatemala's world ranking out of 148 countries.

Protecting Investors Guatemala rates poorly in its protection of investors, scoring 3.3 out of 10 in the 2013 Doing Business indicators, and ranking 157 of 189 countries. Table 10 shows Guatemala's score below the average LAC and OECD countries for extent of disclosure, extent of director liability, ease for shareholder legal cases, and strength of investor protection. As transactions and investment structures gain more complexity, the importance of these indicators grows. Guatemala's commercial code remains out of date and struggles to accommodate modern transactions' demands. As for commercial law, few regulations govern corporate finance, which leaves private parties to negotiate the decision-making rules for a business. While this aids flexibility, it also reduces guarantees in extreme cases and can become an inhibiting factor for the appropriability of investors' returns in certain cases.

Table 10 Commercial Legal System Indicators

	Guatemala	Latin America and Caribbean	OECD
Protecting Investors (0-10)			
Extent of Disclosure	3	4	7
Extent of Director Liability	2	5	5
Ease of Shareholder Suit	5	6	7
Strength of Investor Protection	3.3	4.9	6.2
Enforcing Contracts			
Time (days)	1,402	734	529
Cost (% of claim)	26.5	31.0	21.0
Procedures (number)	31	40	31
Total Cost	64.9	51.1	35.5
Resolving Insolvency			
Time (years)	3.0	2.9	1.7
Cost (% of estate)	15	16	9
Recovery Rate (% value)	27.7	31.4	70.6

Source: IFC *Doing Business* (2013). Note: Total cost equals (Cost + 10%*Time/365) (% of claim)

Enforcing Contracts Guatemala ranks 97th in the world in contract enforcement, just slightly ahead of its Latin American comparators. Despite recent modest improvements, contract enforcement still averages nearly four years. Filing a claim requires only a couple of months, but "trial and judgment" lasts more than two years, and subsequent enforcement requires another year and a half. These time-costs effectively reduce the value of any compensations awarded. Assuming a time-value of waiting for settlement to be 10% of the settlement per year, contract enforcement costs in Guatemala approach 65% of settlement value, compared to an LAC average of 51%.

Resolving Insolvency Currently ranked 109 of 189 countries, Guatemala's procedures for resolving insolvency have not improved since measurements began eight years ago. Currently, bankruptcy proceedings last 3 years, and the recovery rate of disputed goods is only 27 cents of every dollar disputed. The LAC average is 34 cents, and the OECD average is 71 cents. Current laws incentivize selling assets piecemeal, rather than selling an entire business, adding to the lost value.

Crime
Criminal activity and the absence of punishment and deterrence have harmed Guatemala's economy. Drug trafficking and gang-related activities, concentrated in Guatemala City and along the border with Mexico, earned Guatemala the Global Competitiveness Report's worst ranking out of 148 countries for organized crime in 2013. The United Nations Office on Drugs and Crime reported Guatemala's homicide rate grew

by 160% over the period 1999 to 2009 and currently exceeds the regional (LAC) average by 65% and the world average by four times.

Crime imposes high direct and indirect costs to firms and society at large, measured mainly by resource and productivity losses, private security, and deterred investment. Businesses report crime as a principal constraint to their operation, with existing firms reporting losses averaging 1% of sales and private security costs another 2%, levels that exceed regional and worldwide average (Figure 10). Impacts are felt across all sizes of enterprise, though small firms suffer disproportionately, and many new firms often never form due to risks and costs associated with crime.
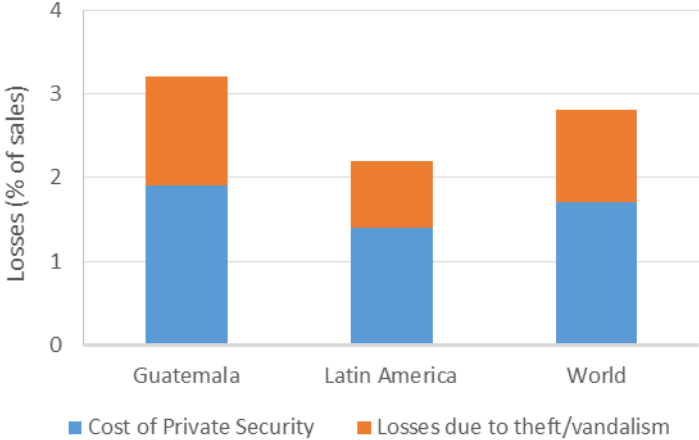

Figure 10 Firm Level Losses Due to Crime

Source: World Bank Enterprise Survey, 2010

The aggregate economic impact of Guatemala's crime is large (Figure 11). Costs of health, private security, legal and public safety institutions, and materials account for nearly 8% of the country's GDP. Neighboring countries El Salvador, Honduras, and Nicaragua, notorious for their drug and gang-related activities, exhibit similar costs, but notably, nearby Costa Rica's cost of crime is roughly half.
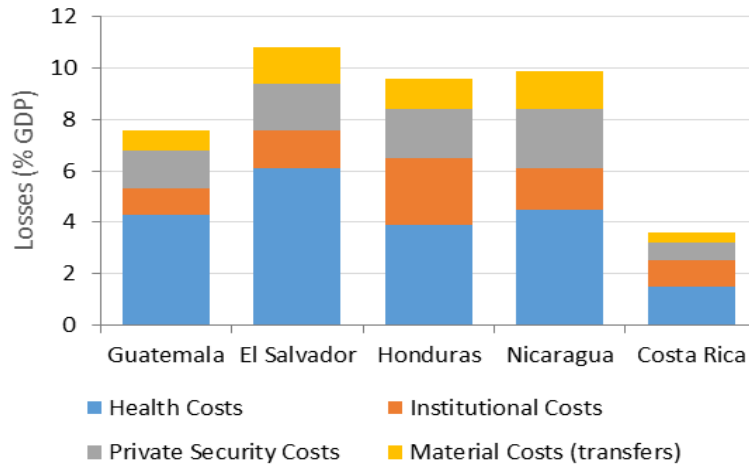
Figure 11 Economic Costs of Crime

Source: Acevedo (2008)

Property Rights and Social Conflict

Secure, transferable, and well-understood rights to land and property are among the essential foundations for economic transactions. When a well-functioning system protects these rights, individuals and firms can make investments aimed at obtaining longer-term returns rather than those made with short-term opportunism in mind. An efficient, well-publicized system also helps markets allocate land to the individuals and firms who can garner the greatest rewards from these resources. In these and other ways, land and property rights may be essential inputs to modern economic growth. Economists have long described these conceptual links between land and property rights and the magnitude and distribution of economic growth (North 1971; de Soto 2000).

Guatemala's distribution of land ownership is the most unequal in Central America. Roughly the top 10% of farms control 85% of the agricultural land, and less than 3% control 65% of the agricultural land. For remaining farms, average farm size is only 1.5 hectares. Forty percent of Guatemala's economically active rural population owns no land, and of this segment, indigenous populations are over-represented (USAID, 2010). Aggravating this situation, the regions with the greatest land holding inequality are the most agriculturally fertile and productive. Meanwhile, peasant, subsistence farmers are left to cultivate eroding hillside plots. Not surprisingly, it is this segment of producers that suffers from the greatest incidence of poverty and food insecurity. As agrarian livelihoods become increasingly difficult and untenable, rural populations migrate to the periphery of urban centers, occupying slum neighborhoods for which land rights remain ill-defined and public services inadequate.

Conflicts around property rights contributed to Guatemala's civil war, and this dynamic persists today between rural communities and large investors from natural resource-intensive industries, e.g. hydropower, mineral extraction. Rooted in historic inequality in land ownership and an ambiguous legal framework, disputes often lead to so-called "consultations" between the communities, outside investors, and government. But such efforts frequently fail owing to mistrust among the different parties and in the judicial system's low capacity to enforce contracts fairly. Consequences manifest in the form of land invasions and

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disputes over boundaries and the use of subsurface and other natural resources. Meanwhile, investors face the uncertainty of pursuing substantial projects in light of the lengthy duration of consultations and the delays associated with dispute resolution. In short, social conflict paralyzes investments in rural areas where it is most needed.

Tests for Rule of Law as a Binding Constraint
Similar to the tests used to detect the human capital constraint, MCC applied similar methods to supplement the evidence supporting the Rule of Law's constraining effect on economic growth. Here, however, required data are less easy to come by, so fewer tests are available for the analysis.

Test 1: Is the shadow value of rule of law high? Yes. The cost of crime represents over 7% of the Guatemala's production or more than $1 billion, a share well above averages for the LAC region and the rest of the world. Additionally, evidence points to a high shadow price of appropriability in terms of the time and costs required to bring closure to procedures related to Guatemala's weak commercial legal system and property rights.

Test 2: Are changes in rule of law associated with changes in key national outcomes, like private investment? Unable to perform test. This test requires movement in some aspect of rule of law over time to observe the economy's reaction. In its research, the team was unable to observe any such event, and therefore, could not perform this test.

Test 3: Are Guatemalans by-passing the rule of law constraint? Yes. Guatemala spends about 1% of its GDP on private security, an amount equal to 10% of the government's total budget and greater than the government's expenditures on public security. This outcome reflects the private sector's concerted effort to deter violent crime and protect assets outside traditional, government channels. Stakeholder interviews also report perceptions that Guatemala's police and military are corrupt, untrustworthy, and unreliable in providing basic services.

Test 4: Do crime-resistant sectors or firms survive better than others? Yes. Stakeholder interviews suggest that large, established firms with ample budgets for security fare much better than newer, smaller firms that lack the resources to defend their business. This "survival of the biggest" effect distorts investments towards larger firms, ceteris paribus, and not towards firms that are necessarily the most productive, innovative, or profitable. Similarly, Guatemala's growing tourism sector appears relatively unscathed by the country's violent crime. Whether this owes to the perception that tourists pose little threat to domestic rival gangs or that tourism is "off-limits" for the sake of the country's reputation remains an open question.

Based on the evidence and analysis completed in the CA, MCC identifies weak rule of law as a binding constraint to private investment in Guatemala. The risk and cost of Guatemala's commercial legal system, crime, and the clear and equitable establishment of property rights significantly constrain the country's economic growth.

Underlying Factors
Over the course of the team's research, two underlying factors emerged that helped explain the origins of the identified binding constraints. The lack of government resources limits its ability to fund important

social services, including its struggling education system. Meanwhile, corruption throughout government reduces certainty in the swift and fair application of justice, particularly in the commercial legal system.

Low Tax Revenues
Without collecting taxes, countries cannot fund human capital, infrastructure and other needed public goods and investments. Guatemala's tax burden (10% of GDP) is the lowest in the LAC region and well below the LMIC average. Low government revenues have impeded the implementation of Guatemala's Peace Accords which promised social programs targeting disadvantaged populations. Similarly, Guatemala's tight budgets have constrained spending on its education services. For per student spending to reach the LAC average, Guatemala must raise an additional $379 million per year. Funding education for all children currently not in school would require an additional $595 million. Given education's already large share of the national budget (around 20%) and other budgetary obligations, the only path to increasing education outlays is raising taxes.

Like most developing countries, the majority of Guatemala's tax revenue comes from value-added taxes (VATs) followed by corporate income taxes. But Guatemala's individual income tax base is small. Over 75% of the labor force is informal, 68% work in a company with five or fewer employees, and large segments earn less than the minimum wage. Meanwhile, bank secrecy laws that prohibit disclosing customer information unhelpfully thwart tax audits, and customs authorities face challenges collecting tariffs, including fraudulent VAT reimbursement requests by exporters.

Alternative sources of revenue remain untapped. To preserve its macroeconomic stability, Guatemala resists foreign financing and issuing debt. And authorities have yet to grow comfortable pursuing public-private partnerships (PPPs), which offer an opportunity to harness private funds for infrastructure and free more public resources for services like education. In 2011, Guatemala the National Agency for Partnerships for the Development of Economic Infrastructure (ANADIE) to encourage PPPs, but capacity remains low.

Corruption
The CA reviews broad measures of corruption, mainly based on perceptions, as well as indicators for judicial corruption, bribery for permits, and public financial management. Despite legislation to prevent and combat corruption, general corruption indicators have not improved significantly. The World Bank's WGI show Guatemala ranks in the bottom third of all countries in terms of public perceptions of corruption in government, and Transparency International's Corruption Perception Index reports a similarly low ranking, 113 out of 176 countries.

Judicial corruption has the greatest impact on economic growth (see Weak Rule of Law). Indicators on transparency in court proceedings have deteriorated, noting inefficient, ambiguous procedures that lend themselves to corrupt practices. Across seven types of licenses or permits, overall bribes paid have fallen but nonetheless remain high, mainly affecting small firms and those outside of Guatemala City.

Fiscal transparency and accountability have improved. However, gaps remain in adopting best practices for information sharing and budget management. According to the 2012 Open Budget Survey of the International Budget Partnership, oversight effectiveness is 'strong' for the Supreme Auditing Institution, 'moderate' for legislation, and 'weak' for public engagement.

IV. Other Constraints Considered

In addition to the binding constraints described above, MCC assessed a variety of other candidate constraints spanning both halves of the HRV tree, (1) access to finance and (2) low returns to economic activity. Within (1), MCC examined conditions of local and international finance, and their possible roots in savings rates or costly intermediation. Within (2), MCC surveyed additional conditions of low appropriability and low social returns, including macro risks, infrastructure, and natural capital. This section briefly covers these items.

Access to Finance

Evidence points to improvements in access to finance over the past decade. Most firms report no issues with access to finance, and for those that do, e.g. small firms located outside of the capital or firms in manufacturing or food sector, access to finance rates third or fourth highest out of 16 potential constraints (WBES, 2010). Small and medium enterprises (SMEs), which account for 93% of Guatemala's private sector, operate with little financing, an outcome rooted in low demand and banks' mismatched financial products. As a result, Guatemala's private sector credit is a much smaller part of its economy than in the rest of Central America (Figure 12).

Local finance options for Guatemalan firms, other than owner equity, are primarily debt-based. Loan terms are short, averaging three years and capping at five years. Naturally, this restricts the development of internally financed, large-scale, or complex investment projects, effectively discouraging high-risk, high-reward projects. Low savings rates (12% of GDP) further limit loanable funds. For these reasons, for more complex financial services, Guatemalan firms must turn to international financers.
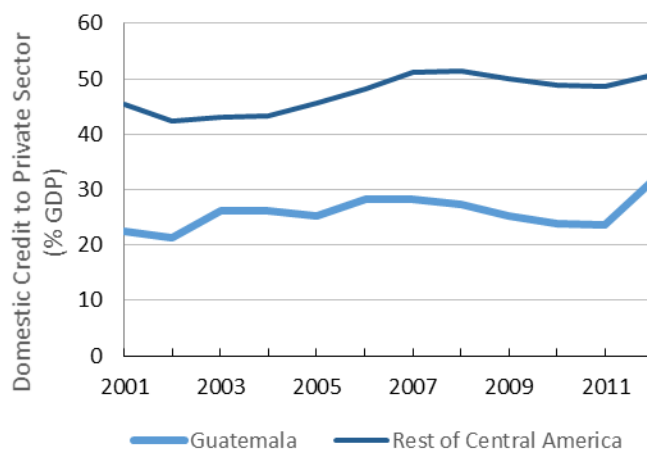

Figure 12 Domestic Credit to Private Sector

Source: World Development Indicators (2012)

Although the country remains financially open and has few limitations to capital mobility, private sector consultations reveal that international lenders struggle to find local partners given the structure of Guatemala's financial system.

Interest Rates The cost of finance in Guatemala is relatively low in nominal and real terms when compared to countries with similar incomes and within the LAC region. Rates have been stable and the nominal-real spread has decreased over time. In 2012, Guatemala reported an average real interest rate for lending of 9.8%, and nominal rates in local currency of 5.4% for liabilities (deposits) and 13.5% for assets (loans), indicating a spread of 8% (World Development Indicators, 2012). Unlike other countries, Guatemala's interest rates include all services fees, implying that costs are comparatively even lower than initially considered.

Rates vary by sector and firm size. According to Guatemala's Superintendencia de Bancos, on average, large loans pay rates 9 percentage points lower than small loans. Consumption loans pay the highest interest rates (24%), and across productive sectors, agriculture loans pay the highest (13%), followed by commercial, construction and transport sectors (12%) and finally, services (9%) and manufacturing (8%).[7] Overall, changes in interest rates do not appear to be correlated to changes in private investment, which suggests that interest rates are not constraining finance but access could still be a limiting factor.

Banking Sector and Regulations Guatemala's banking system expanded significantly throughout the country from 2005 through 2012, with a 140% increase in the number of formal branch locations, and a 20% increase in access to microfinance institutions and a 10% increase in cooperatives. In 2009 Guatemala enacted a secured transactions law that expanded the definition of collateral to include movable assets, and created a national asset registry that records types of assets by debtor. This has supported the improvement of access to finance, particularly to SMEs and certain sectors, such as small-scale agriculture.

According to Doing Business, Guatemala obtains the highest possible rating (6 of 6) for depth of credit information, better than the LAC average. Between the public registry and the private credit bureau, positive and negative data is provided on both firms and individuals, with data history available for over two years. Additionally, a law passed in 2010 allows individuals to review their own data when held by a public institution. Nevertheless coverage remains below LAC and OECD averages, with 19.1% registered in the public system and 8.6% in the private system. This advancement is notable, but asymmetric information could continue to limit financial access.

International Financial Flows Foreign direct investment (FDI), remittances, and lines of commercial credit and loans from foreign banks comprise Guatemala's inflows from abroad. FDI is low by regional standards, but has experienced recent growth, particularly in financial services. Remittances are the largest component, in part due to improvements in the banking system that have simplified overseas transfers. About 20% of remittances go to savings and investment and another 18% to working capital. Over 35% of remittance recipients describe themselves as business owners (International Organization for Migration, 2010).

The available evidence indicates that while certain elements within the financial system limit private sector investment, access to finance is not a major binding constraint to economic growth in Guatemala.

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[7] Data are for 2012. More information can be found at Guatemala's Superintendencia de Bancos website, https://www.sib.gob.gt/.

Low Appropriability

As described under the Rule of Law binding constraint, appropriability refers to investors' ability to keep the profits earned from their economic activities. This section examines three potential threats to appropriability: macroeconomic stability, tax policy, and governance and institutions

Macroeconomic Stability

Guatemala has a history of macroeconomic stability and fiscal responsibility, as well as a solid record of repaying its debt. The effects of the 2009 global financial crisis and the countercyclical policies adopted by the government during the crisis have generated some concerns about the sustainability of public debt over the medium term, but risks are still considered low, and a fiscal consolidation process is underway. Additionally, monetary and exchange rate policies have been sound. And despite upward price pressure in recent years for imported food and oil, inflation in Guatemala remains low and stable. Finally, the relative stability of the exchange rate, supported by the institutional framework's exchange rate policy management, has lowered the inherent risks related to this indicator and thus providing greater certainty to investors.

Overall, the country's macroeconomic stability reflects prudent macroeconomic management of monetary, exchange rate and fiscal policies. This has made it possible for the country to positively face external and domestic shocks. Guatemala's strong performance on these macroeconomic indicators demonstrates that macroeconomic stability is not a binding constraint to economic growth.

Tax Policy

Costly taxes, whether in terms of rates or compliance burdens, can discourage firms from entering or expanding their economic activity. In general, Guatemalan firms do not report tax rates, administration, or regulations as major constraints to business. Guatemala's tax burden, as a fraction of GDP, has fallen gradually since 2002, with levels well below its Central American neighbors. Taxes as a portion of firm profits are only slightly above the regional average, while time spent on tax compliance was less. The overall effect of taxation on incentives to invest are better in Guatemala then in their comparators.

Microeconomic Risks – Governance and Institutions

High quality governance and institutions can increase business formation and operation, attract investment, domestic and foreign, and expand the formal sector. As the elements of governance interact in complex and difficult ways to measure, the CA employs the taxonomy of the Worldwide Governance Indicators (WGIs)—voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption—to structure the data-driven, diagnostic approach. Certain elements of governance, including public service delivery, arguably connect with other parts of the HRV diagnostic tree, namely social returns, but this analysis confines their discussion to the following sections.

Voice and Accountability In 2012 Guatemala had free and fair elections with the greatest voter participation in history (69% of all registered voters), marked by greater participation among previously marginalized groups. While gaps between the median and the representative voter likely persist, the elections nevertheless resulted in greater representation of women and indigenous groups across the different branches of government. Additionally, recent decentralization efforts have supported greater citizen participation in decision making at community and municipal levels. Although voice and accountability are perceived as weak, potentially related to a lack of freedom of expression for labor unions and reporters, Guatemala is categorized as having freedom of expression and media. This element of microeconomic risks is not considered a binding constraint to private investment.

Political Stability Since signing the Peace Accords in 1996, Guatemala has had democratic elections and regimes with a low likelihood of unconstitutional change in government. The perception of weak political stability likely comes from other factors, such as social conflict and protests, violence related to organized crime, or policy uncertainty. Evidence on these three factors indicates that their root causes are more closely associated with rule of law and, thus, these elements are analyzed within that section. This element of microeconomic risk is not considered a binding constraint to private investment.

Government Effectiveness Government effectiveness often hinges on resource availability, corruption, or simple incompetence. Overall, the Guatemalan government is ineffective. However, national level indicators hide great differences by level of government, agency and location. Based on a review of recent reports and indicators, the country's greatest weaknesses appear to be the creation of complementary laws and their implementation and establishing policy certainty. Moreover, an antiquated civil service system lacks the capacity to effectively carry out the government's work. Notwithstanding the need for improvements, government effectiveness alone does not present a binding constraint to private investment. However, elements of this weakness may contribute to the constraints that appear elsewhere in this CA.

Regulatory Framework and Compliance This element performs best among the WGIs relative to other countries. Indicators point to relatively high costs of starting a business and hiring workers. However, start-up conditions in Guatemala have improved significantly over the last decade thanks to improvements in regulatory approval times. Labor regulations are a different story. In Guatemala, the minimum wage is high, variable, and politically-sensitive. Guatemala's minimum wage and average salaries (including bonuses) are the highest in Central America despite low levels of human capital. The country's official minimum wage even exceeds the average actual wage paid in all departments except for Guatemala City, no small contributor to the large informal sector's existence. Meanwhile, labor rules restrict part-time employment, limiting firms' flexibility in hiring.

High start-up and labor costs incentivize firms to remain informal. While informality amounts to a strategy for circumventing regulations, surveys also reveal that 30% of small business owners have no other job opportunities. In short, a cycle of labor market distortions and regulatory circumvention arises. According to the World Bank Enterprise Survey, informal sector practices amount to a major obstacle to formal firms, particularly medium size operations, and those within the textile, manufacturing and 'other service' industries. The CA identifies these obstacles as a symptom of government ineffectiveness and regulatory issues rather than a constraint itself.

Control of Corruption The CA reviews broad measures of corruption, mainly based on perceptions, as well as indicators for judicial corruption, bribery for permits, and public financial management. Despite legislation to prevent and combat corruption, the World Bank's World Governance Indicators shows Guatemala ranks in the bottom third of all countries in terms of public perceptions of corruption in government (Figure 13). Transparency International's Corruption Perception Index reports a similarly low ranking, 113th out of 176 countries.

Judicial corruption has the greatest impact on economic growth (see Rule of Law). Indicators on transparency in court proceedings have deteriorated, noting inefficient, ambiguous procedures that lend themselves to corrupt practices. Guatemalan firms are likely to pay at least one bribe. Across seven types of licenses or permits, overall bribes paid have fallen but nonetheless remain high, with effects felt mainly by small firms and those outside of the city.

Fiscal transparency and accountability have improved. However, gaps remain in adopting best practices for information sharing and budget management. Oversight effectiveness is 'strong' for the Supreme Auditing Institution, 'moderate' for legislation, and 'weak' for public engagement.

Social Returns

Social returns pertain to state-provided or regulated factors of production in an economy. Two examples of this, health and education, figure prominently in the discussion of the human capital binding constraint. But the CA considered other factors that pay returns to society, including infrastructure, which spans telecommunications, energy, transportation, and water, as well as a country's endowment of natural capital, such as forests, mines, and other valuable resources.

Infrastructure

This section focuses on analyzing four main components of infrastructure: telecommunications, energy, transport, and water. Although infrastructure has clear areas for improvement (such as the urban-rural gap for transport and energy, and sustainability of water), based on the evidence analyzed for the CA, this factor is not considered a binding constraint to private investment in Guatemala.

Telecommunications Current prices for both mobile phone and internet use in Guatemala are low for the region, while accessibility and use are both relatively high and rapidly increasing, with 1.4 mobile phones per citizen and over half of firms with their own website. Although Guatemala has less fixed broadband internet subscribers and, on average, internet speeds are slower than comparator countries, the service is reliable with few outages and businesses do not report this as a major constraint. Furthermore, call centers exist and continue to enter the market, mainly in Guatemala City. The evidence clearly demonstrates that telecommunication is not binding constraint to private investment in the country.

Energy Guatemala's electricity sector exhibits reliable service and few businesses report electricity as a principal constraint, even in energy-intensive sectors. The country typically produces more electricity than is consumed domestically, and it has the ability to import or export electricity via the regional electricity market. Energy-intensive firms grow and remain competitive even though electricity prices are higher in Guatemala than in neighboring countries. While some rural regions still have low electrification rates, ongoing energy expansion plans target higher electricity access in these regions. In conclusion, electricity does not appear to be a broad-based binding constraint in Guatemala.

Air and Sea Ports Guatemala has two international airports and three sea ports. Demand from tourism, business travel, and freight shipping sustains Guatemala's low-cost airports. While several firms reported extended delays in clearing freight in customs, evidence overall suggests air transport is not a binding constraint. Meanwhile, Guatemalan sea ports are some of the busiest in the region. User fees have fallen significantly over the past decade and even though they remain slightly high for the region, the relative quality of the infrastructure and related institutions appears to compensate.

Ground transportation Guatemala has a growing inter-departmental network of roads that are part of the Central American corridor. Trucking costs, costs incurred by businesses, and losses in sales from breakage and spillage are low. Although Guatemala's network density is low by area and population, few transport-dependent firms locate in low-access rural areas, in part due to the country's geography. Challenges remain with respect to road quality and access, particularly in the northern area, and for the agriculture sector, but overall, few firms identify transportation as a principal constraint.

Water Access to improved water and sanitation infrastructure has increased significantly over the past two decades and the gap between urban and rural service has shrunk. For Guatemala these indicators rank above the regional average although about 20% of rural areas still lack access to improved water or sanitation infrastructure. Reliability is lower for households, but this is not seen as an issue for businesses, and urban users regularly use bottled water as a means to circumvent low quality tap water. Illnesses related to waterborne diseases and improper disposal of waste are not high in Guatemala, but this could be a contributing factor to the high rates of chronic malnutrition.

Cost data on water use is difficult to obtain as water is managed primarily at the municipal level, and users are not charged for water used for irrigation. On the other hand, evidence suggests that obtaining a water connection involves more bribes than other types of connections and more than the regional average.

Institutionally, a weak system of water rights continues to create a gap in access to irrigation, and not charging individuals and businesses for water will impact the sustainability of Guatemala's currently plentiful resources. Lastly, the success of agriculture and other supportive evidence indicates that there is not currently a constraint on economic growth from irrigation-related infrastructure, but given the economic reliance on sectors that are dependent on water, this should be monitored closely in the future. In short, although challenges exist to the country's water and sanitation systems, they are not currently a binding constraint to broad-based economic growth.

Natural Capital
Guatemala is in close proximity to its principal trading partners (US, Mexico, Honduras, El Salvador, and Belize) and enjoys access to both the Pacific Ocean and the Caribbean Sea, both of which reduce transportation costs for international trade. A mountainous country imposes challenges in improving social and economic inclusion, and impacts transportation costs – building and maintaining roads and access to markets – but improvements have been made. The country is endowed with natural resources (water, fertile land, forests, and minerals) and currently none are viewed as scarce. Nevertheless, management and sustainability of these resources are important given the country's reliance on them for the majority of exports.

Of key concern is Guatemala's vulnerability to natural disasters, e.g. hurricanes, flooding, earthquakes, and volcanos. On average, natural disasters annually affect over 135,000 people and cost the country nearly US $108.8 million, albeit a relatively low percent of GDP annually. Uptake of inexpensive insurance remains low, but the country has developed a disaster prevention plan. Natural capital is important for the Guatemalan economy, but is not viewed as a binding constraint to broad-based economic growth.

V. Conclusion

The available evidence reported in the Constraint Analysis identifies two binding constraints to economic growth in Guatemala: (1) low and unequal levels of human capital and (2) weak rule of law. Inadequate government resources underlie both of these constraints, while the presence of corruption in government institutions further erodes the latter. The human capital constraint consists of low quantity and quality of education with high levels of inequality, along with high levels of chronic child malnutrition, all of which combine to reduce the supply of a healthy, educated workforce.

The constraint of weak rule of law—this entails Guatemala's weak commercial legal system, high rates of crime, and social conflicts linked to land rights—present conditions unfavorable to private sector investment. The physical and financial risks and costs of investment discourage new firms and present a daunting challenge to foreign investors, ultimately hampering the country's economic growth.

Understanding the causes of these constraints requires an assessment of Guatemala's institutions, policies, social norms, and incentives. This includes a close examination of the country's public finances and its capacity to support investments in public education, the labor force, and entrepreneurship. Identifying such *root causes* will help MCC effectively target interventions to raise growth and reduce poverty in Guatemala.

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Appendix: MCC Constraints Analysis Process

In addition to collecting evidence and data from third parties, MCC and the Government of Guatemala collaborated to conduct consultations with representatives from the private sector and civil society to hear firsthand about the perceived constraints to economic growth and learn about additional data sources that could be used for this analysis.

From June 24–28, 2013 the CA Research Team conducted interviews in and around Guatemala City, Quetzaltenango, and Retalhuleu. This opportunity was also used to inform these groups of the CA and the potential threshold program. All participants reported a pronounced difference between urban and rural areas with respect to economic activity and accessing all services. This was similarly noted in the private sector consultations and meetings with the public sector. The country is viewed as centralized, and although decentralization laws have passed, municipalities have not received the funds needed to provide services. Government spends funds inefficiently due to unclear divisions of responsibility between national and municipal authorities, corruption, and the low public management capacity.

Private Sector Consultations
The private sector is the main source of growth, employment and wealth within a country, so the CA would be incomplete without the views of this sector. The CA Research Team consulted the private sector in Guatemala regarding the constraints that they face in operating and expanding their businesses, and their perceptions of the constraints that most limit widespread economic growth in Guatemala.

In 2010 Dalberg completed a study to identify industries or sectors with the greatest growth opportunities in Guatemala.[8] Interviews were conducted with representatives from the five sectors identified by Dalberg –agro-forestry, horticulture, light manufacturing, tourism and business processing outsourcing (BPO)– as well as traditional sectors that represent a large portion of the current economy –agriculture (small and large producers) and textiles. In addition to consultations with productive sectors, interviews were conducted with representatives from finance, large scale investors and entrepreneurs, and recruiting firms to learn their perceptions on constraints to Guatemala's economic growth.

Participants highlighted constraints related to human capital, public sector capacity (social conflict, legal certainty, and delays and bribes for clearing imports), access to finance, innovation and competition, infrastructure, and crime/security. These insights are incorporated into the overall conclusions and the main report.

Civil Society Consultations
The objective of the consultations was to obtain information on the main restrictions to economic growth and obstacles that limit women, indigenous, and minorities from accessing economic opportunities. Participants highlighted constraints related to human capital, public sector capacity (social conflict and legal certainty), crime/security (concern for women and children, which have greater impunity for crimes). These insights are incorporated into the overall conclusions, this report, and a separate report completed by MCC's Social and Gender Inclusion division in collaboration with the GoG.

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[8] Dalberg is an international strategic advisory firm that focuses exclusively on development, social impact and developing markets: http://www.dalberg.com.