Timor Leste

Timor Leste 2017 Constraints Analysis Report

MILLENNIUM CHALLENGE CORPORATION
UNITED STATES OF AMERICA

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

Publication Date: December 2023

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Authors & Acknowledgements

MCC undertook this Constraints to Economic Growth Analysis (CA) under its Threshold Program engagement with Timor Leste from May through September of 2017.

The analysis was conducted in collaboration with the Government of Timor Leste. The Government of Timor Leste's (GoTL) engagement with MCC under the Threshold Program was led by Mr. Alex Tilman, Public Policy Officer in the Office of the Prime Minister. Collaboration with the Ministry of Finance was led by Mr. Azevedo Marçal, Economic Policy Advisor. A team from the Ministry of State, Coordinator of Economic Affairs (MECAE) led GoTL's technical input into the constraints analysis. This team was Led by Sam Porter (Economic Adviser); with Leonito Soares de Jesus (Junior Professional Economist); Dayna Connolly (ODA Economist, Ministry of Finance); and Cecilia Requena (Economic Adviser). MECAE also facilitated donor coordination as the World Bank and the Asian Development Bank were undertaking related diagnostic studies during the preparation of this report. While collaboration from the ADB and World Bank made important contributions to these findings, this report does not necessarily represent the views of those organizations. Input into this analysis was also provided by stakeholders including NGOs, civil society, community organizations, small holder farmers, and private enterprises.

MCC's Threshold Program with Timor Leste was led by Malik Chaka. Brad Cunningham was the lead economist for the constraints analysis team that included Mark Gellerson (EA), Bersabeh Beyene (GSI), Luisa Escobar (GSI), Courtenay Engelke (FIT), and Joshua Templeton (Economist, USAID). In addition to their participation within the team, the USAID office in Dili was a collaborative partner throughout the analysis.

Abstract

Timor-Leste faced many challenges upon gaining its independence in 2002, including high poverty and low levels of human development. Following independence, the discovery of oil played a significant role in shaping the country's development. Revenue from oil allowed rapid growth in government spending that drove per capita income to increase by 6% per year between 2007 and 2015. Poverty rates declined from 47% to 30% over the same period. While public sector investment rose rapidly, private investment remained flat and the non-oil economy has performed poorly. The private sector growth that has occurred has been predominantly focused on serving demand created by public spending. However, public sector spending will not continue to grow at the pace it did following the oil boom. Therefore, to sustain the country's social and economic progress, Timor Leste needs economic growth that is driven by the private sector and not reliant on growth in public expenditure. To achieve this, the key constraints that must be relaxed are:

Public Financial Management: Low sustainability and effectiveness of fiscal expenditures – The sustainability of government expenditures funded through the Petroleum Fund is in doubt. If the fund were to be exhausted, the resulting fiscal contraction would have significant consequences. Both the efficiency and targeting of government expenditures can be improved to better promote private investment and grow a tax base that can begin to displace excess withdrawals.

Dutch Disease: An uncompetitive real exchange rate – The rapid growth of consumption enabled by oil resources has inflated the prices of non-tradeable goods in Timor Leste including land and labor. As a result, it is difficult for sectors like manufacturing and tourism to compete against lower cost international producers.

Business Enabling Environment: Weak institutions for supporting market transactions – Timor Leste has not yet put into place the policies and institutions needed to support a market economy. The country lacks the legal framework and judicial institutions necessary to support contracts and their enforcement. The lack of these institutions creates inefficiencies in transactions across multiple markets, but especially affects transactions in land and financial markets.

Human Capital: Poor nutritional outcomes and lack of high skilled workers – Early childhood health and nutrition is inadequate and reflected in high rates of stunting. The low availability of tertiary education in the workforce has led to relatively large premiums for higher skilled workers and firms disproportionately bringing in skills from abroad.

Country Context

Understanding the unique political and economic context of a country is an important starting point in growth analytics. This section provides a review of the geographic, political, poverty, and economic context of Timor Leste. It concludes with the articulation of the key economic growth question to be addressed by this analysis.

Timor-Leste is a mountainous island nation of 1.3 million people. The capital city of Dili has 230,000 inhabitants. The climate is tropical with a distinct rainy season from December through April. Portuguese and Tetum are the official languages, although many other languages are commonly spoken including Indonesian, English, and thirty-two indigenous languages.

In the 18th century, Portugal established a colony in Timor-Leste that lasted until 1975. The following period of independence was short lived as the country was invaded and annexed by Indonesia the following year. Indonesian rule was brutal and contributed little to the country's development. As much as one-third of the East Timorese population perished due to violence, hunger, and disease during Indonesian rule. Following the end of Suharto's regime in Indonesia, Timor-Leste undertook a referendum vote in support of independence in 1999. The independence movement sparked violence from anti-independence factions prompting an international peacekeeping force to step in. With the United Nations supporting the transition to independence, Timor Leste established a constitution in 2002 and became a member state of the United Nations.

The challenges of building a new country gave way to factional violence erupting again in 2006, causing a return of UN peacekeeping forces. The country has since made significant progress consolidating its democracy. There have been three successful parliamentary elections. Timor Leste has moved from the 14th to the 43rd percentile among countries in the Worldwide Governance Indicator of political stability.

What is a Constraints Analysis?

MCC's evidence-based approach begins with a constraints-to-economic growth analysis (CA). In a CA, MCC works with a partner country to examine and prioritize the issues that constrain its economy. The CA approach builds on the "growth diagnostic" framework put forward by economists Ricardo Hausmann, Dani Rodrik, and Andrès Velasco (HRV). As HRV point out, all developing countries face significant economic and development challenges, but these challenges do not all equally restrict growth. The diagnostic framework provided by HRV helps to structure the investigation of potential binding constraints. It has been refined through application, both within MCC and the broader economic development community.

Why Does MCC Use Constraints Analysis?

Identifying the most binding constraints to growth helps MCC target its investment on the areas that, if addressed, are most likely to promote sustainable, poverty-reducing growth in a given country. Prioritization helps maximize the limited financial resources and implementation capacity needed to effect change. As HRV also argue, focusing on the most binding constraints helps to minimize the risk that development interventions create negative unintended economic consequences.

Economic History & Productive Sectors

The discovery of offshore petroleum resources has had a profound effect on Timor-Leste's economic development. As oil resources came online, the government prudently established a petroleum fund in 2005 to invest the proceeds, insulate the economy from oil market fluctuations, and provide revenue that can live on after the natural resource is depleted. Rapid increases in government expenditures financed through the petroleum fund generated high rates of economic growth, averaging nearly 10% from 2007 through 2010 (figure 4). Following 2011, growth in government expenditure slowed and overall economic growth averaged less than 4% per year from 2012 to 2016. Growth has been concentrated in sectors like health, construction, and other services that benefit from government expenditures (Timor Leste National Accounts, 2015). Notably, manufacturing value added has remained low, falling below 2% of GDP in 2008 where it has remained (figure 5, 6).

Following 2007, oil quickly grew to dominate Timor Leste's export basket. Prior to oil, coffee accounted for as much as 40 percent of export earnings. Coffee production peaked in the 1970s before declining during the commodity market crash of the 1980s. Today, coffee production earns around $15 million annually. In recent years the travel and tourism sector has grown to exceed coffee as Timor Leste's largest, non-oil export sector.

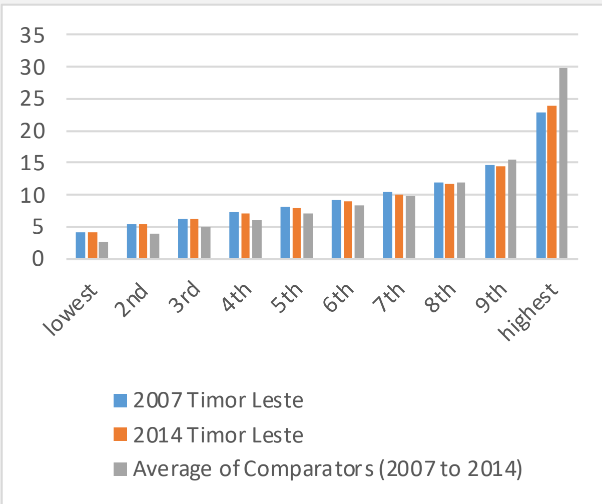
Since its establishment in 2005 with a balance of $205 million, the petroleum fund has grown to over $16 billion in 2017. To ensure the sustainability of the fund for future generations, the petroleum fund law requires the government to calculate the level of withdrawal from the fund that would be offset by a combination of future oil revenue and investment returns. This amount is called the Estimated Sustainable Income (ESI) and is typically around 3% of the fund value. However, a variety of factors affect the level of withdrawal that is sustainable. Chief among these is the potential for revenue from the Greater Sunrise oil field that could add significant value to the fund.

With the approval of Parliament, the government can make withdrawals in excess of the ESI. Since 2009, almost half of total government revenue has come from such withdrawals above the ESI (figure 8). If excess withdrawals continue at this pace, the fund risks depletion within a decade (2016 IMF Article IV). Exhaustion of the petroleum fund would create significant economic hardship as the economy is highly dependent on the government expenditure that it enables. Even if Greater Sunrise oil fields are brought online to extend the life of the fund, the country will still need to transition to an economy that is less driven by the Petroleum Fund as the fund on its own is not large enough to help Timor Leste achieve its development objectives. To put the scale of Timor Leste's Petroleum fund in perspective, the sovereign wealth funds of oil rich countries like Kuwait and Norway are ten to fifteen times larger on a per capita basis.

Poverty and Inclusion

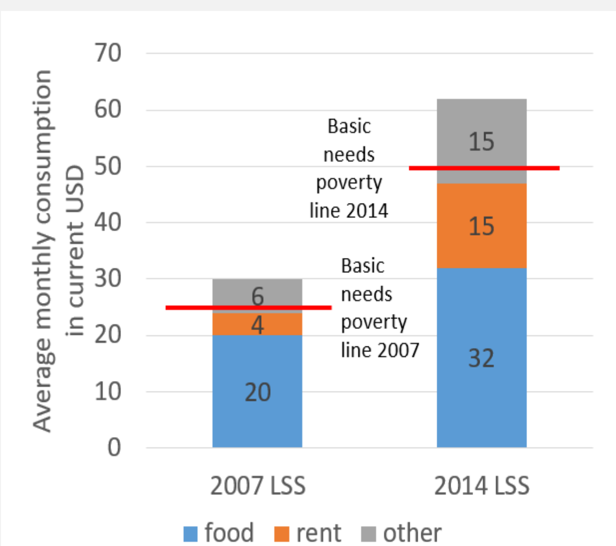
Timor Leste was established in 2002 facing significant development challenges. Only 38% of the population was literate, life expectancy was 60.3 years, maternal mortality was 646 women per 100,000 live births, and just over a third of the population had access to electricity. [1]

FIGURE 1 Income Distribution in Timor Leste and Comparators



Source: PovcalNet, World Bank

FIGURE 2 Consumption and cost of living grew rapidly from 2007 to 2014



Source: Poverty in Timor Leste, 2014, World Bank

The 2007 Living Standard Survey (LSS) found 47% of Timorese were living in extreme poverty (less than $1.90 a day, 2011 USD). During the period that followed oil resources were brought online and government expenditure, and thus the economy, grew as a result. The 2014 LSS found that consumption per person had more than doubled since 2007 (measured in current USD) while the distribution of income remained relatively unchanged (figure 1). Nevertheless, the poverty impact of increased consumption expenditure (in nominal dollars) was diminished by the rapidly increasing cost of living which caused the basic needs poverty line to nearly double (figure 2). As discussed in subsequent sections, the cost-of-living increase was due to double digit inflation rates caused by the inflow of oil revenue into the economy that began in 2008.

Despite the cost-of-living increase, the country made significant progress reducing poverty from 2007 to 2014. The most lagging region, Centre rural Timor Leste, had the largest decline in the percent of population living below the poverty line, from 64% in 2007 to 48% in 2014. The share of households with access to electricity increased from 36% to 72% and ownership of a mobile phones increased from 12% to 68%.[2] Income inequality remained stable and relatively low over this period with a GINI index of 27.8 in 2007 and 28.7 in 2014, a similar level to countries like Denmark, Finland, and the Netherlands.

However, gender-based inequality remains a significant issue. Almost half of women and girls experience sexual and gender-based violence within the home. Women have a low rate of labor force participation, at 30 percent compared to 52 percent for men, and are less likely to work in more lucrative sectors like public administration or growing sectors like construction.[3]

1 Worldwide Development Indicators, 2016, World Bank

2 World Bank (2014) Poverty in Timor Leste

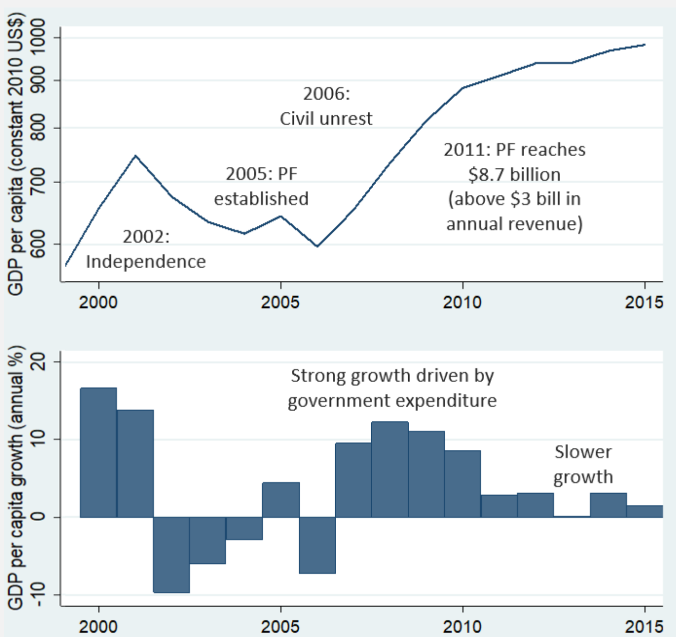
3 2013 Timor-Leste Labor Force Su

Growth Question

The discovery of oil provided resources that drove much of Timor Leste's economic growth. While this provided benefits, the economy is now highly dependent on government expenditures.

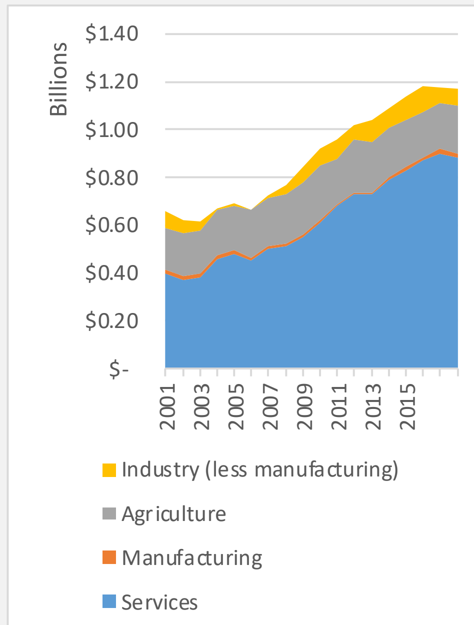
The sustainability of these expenditures is in doubt as they exceed the sustainable revenue provided from oil resources. This leads to the growth question that is the focus of this report: **How can Timor Leste transition to economic growth that is driven by private sector investment that does not rely on demand growth from government expenditure?** The remainder of this report examines the constraints that prevent the country from achieving such growth.

FIGURE 3 Timor Leste's GDP over time



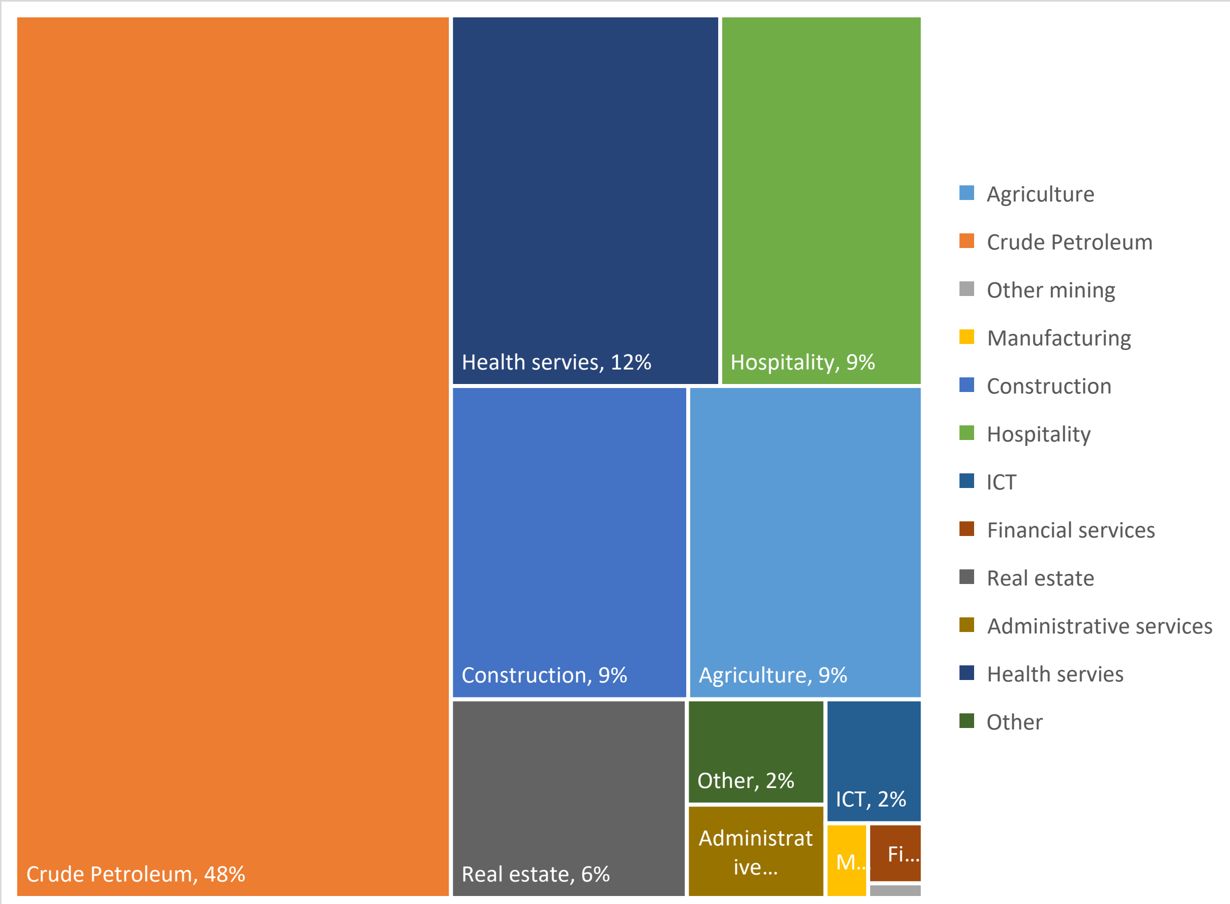
Source: Worldwide Development Indicators (2017)

FIGURE 4 Timor Leste's value added over time



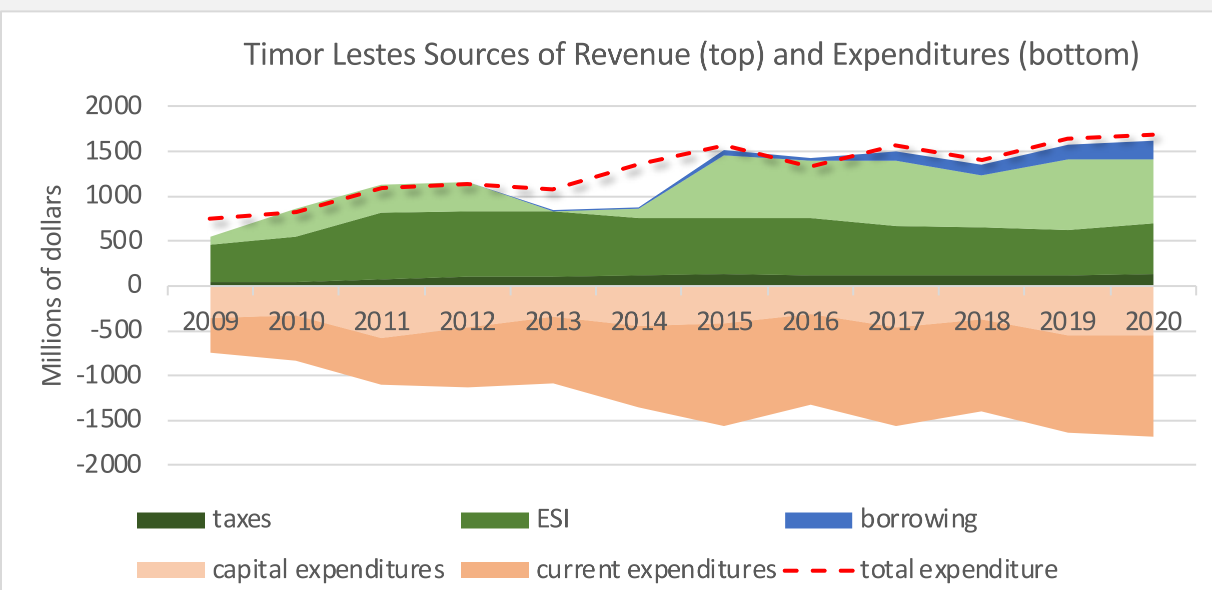
Source: Worldwide Development Indicators (2017)

FIGURE 5 Percent of Value Added by Sector



Source: Timor Leste National Accounts, 2015

FIGURE 6 Expenditure and withdrawal projections from the Petroleum Fund



Source: Ministry of Finance and Timor Leste Petroleum Fund, Annual Report (2015)

Discussion of Constraints

Public Financial Management: Low sustainability and effectiveness of fiscal expenditures

Improving public financial management is important for Timor Leste. The large amount of government spending relative to GDP, and the economy's current reliance on it, make the sustainability of public spending critical for avoiding a painful fiscal contraction. The pathway to fiscal sustainability that the government has been pursuing is termed the "front-loading" approach.[4] This approach emphasizes making investments in the present time that will pay-off through more economic activity in the future. Ideally, government investment funded by withdrawals that exceed the ESI will spur private sector investment and grow a tax base that can provide a sustainable revenue source for the future. Given the development challenges facing Timor Leste, it is perhaps reasonable that some amount of front-loading be part of Timor Leste's fiscal strategy. However, this approach relies on effective public financial management to ensure value for money and that investments are well targeted to crowd in private investment.

The country has vigorously pursued the front-loading approach. Public investment grew rapidly beginning in 2009. However, while public investment grew to become the highest in the world as a percentage of GDP in 2016 (figure 8), it failed to crowd in private investment (figure 9). Private gross fixed capital formation has remained within 6.5% to 9.0% of GDP – one of the lowest rates in the region. Among non-resource rich countries, higher government investment is correlated with higher private sector investment, suggesting that government investment can indeed crowd in private investment (figure 10). Unfortunately, this has not occurred in Timor Leste and its ratio of public to private investment is especially poor, even among resource rich countries (figure 12).

It is noteworthy that the positive correlation between public and private investment does not hold among natural resource rich countries. This suggests that countries with a windfall of resources are more likely to make capital expenditures that do not spur private investment, which may be due to a combination of poor targeting of public investment, inefficiency of public investment, or a lack of absorptive capacity of the economy (IMF 2012). All these issues likely affect the poor ratio of public to private investment in Timor Leste.

The 2013 Public Expenditure and Financial Accountability (PEFA) assessment found "competition, value for money, and controls in procurement" to be the worst performing aspect of Timor Leste's public financial management. The 2015 Public Expenditure review identified similar issues and found unit costs for road construction to be high relative to comparable countries. Inefficiency in capital expenditure also extend to the electricity sector. Despite significant investment in energy, Timor Leste has one of the highest costs of electricity production in the world (figure 11). While the government budget has been able to absorb these costs without passing them on to consumers, these issues add recurrent liabilities that further undermine the sustainability of government expenditures and infrastructure over the long term. Furthermore, the capability and budget for maintenance have not been growing to keep pace with capital expenditures.

4 The front-loading policy is discussed in: Speech by His Excellency the Prime Minister, Dr Rui Maria De Araújo, Presenting the State General Budget 2017 to Parliament, National Parliament, Dili, 23 November 2016

FIGURE 7 Government expenditure across countries, 2016

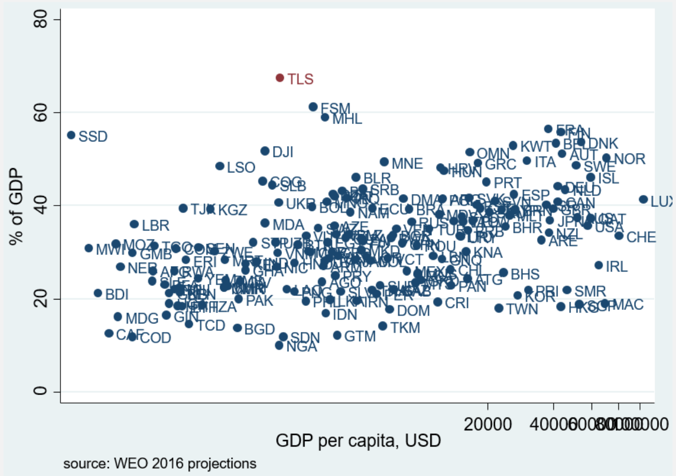


FIGURE 8 Public investment vs private investment

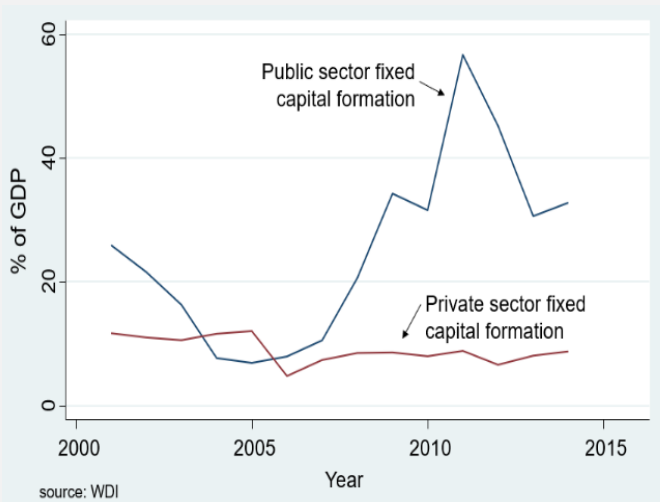


FIGURE 9 Public and private investment correlate in non-resource rich countries

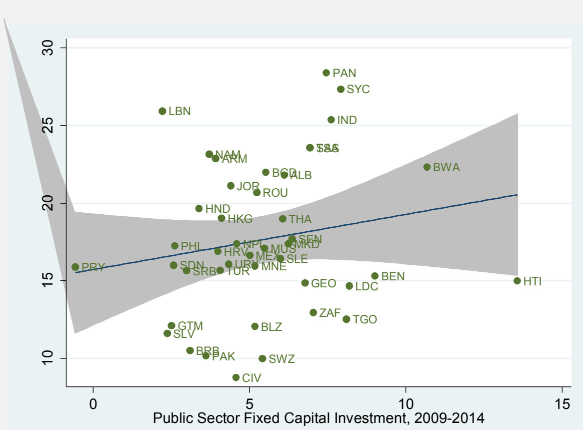
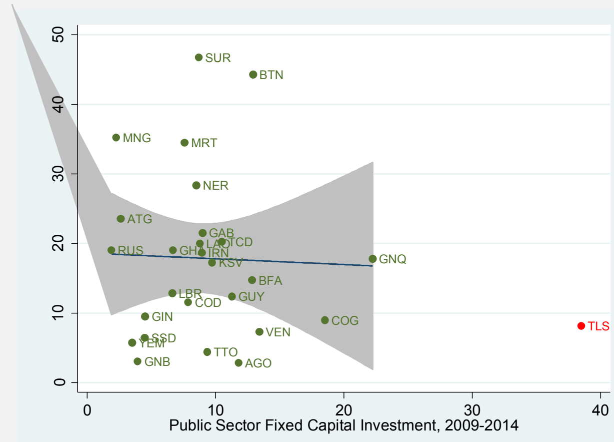
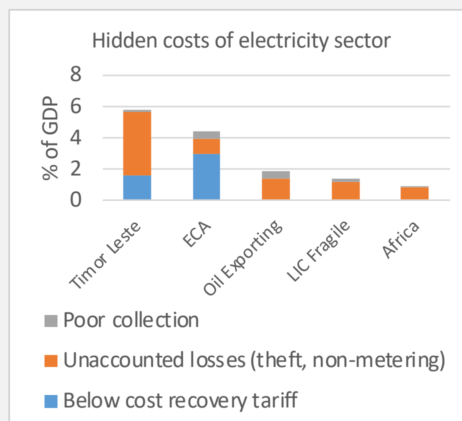


FIGURE 10 No correlation between public and private investment in resource rich countries



Source: World Development Indicators (2017)

FIGURE 11 Timor Leste has high costs in electricity



Source: PER Infrastructure, 2014

Spending on social protection has also grown significantly, but many of the very poor do not benefit. Established in 2008, veteran benefits have been billed as an essential pillar of nation building and a strategy for promoting stability. These resources represent between 6-9% of the national budget, and around three-quarters of national welfare expenditure totals.[5] Payments are so high that, in total, they tend to exceed government budgets for essential public services, including health and education. Only a relatively small fraction of the population receives these benefits, and therefore such spending is unlikely to have widespread, national effect on poverty (Dale, Lepuschuetz, and Umapathi, 2014). Women

5 Judicial System Monitoring Program (2015) Annual Report

represent only 26-38% of beneficiaries. In contrast, Bolsa da Mãe ("Mother's Purse") targets the poor, but eligibility is limited, and payments represent less than 3% of the household budget of recipients (World Bank 2013 and ADB 2014).

Improving public financial management to moderate total expenditures, improve targeting of investment needs, and increase value for money out of expenditures will be necessary for the country to achieve a sustainable fiscal position and to promote the development of the private sector. The more frontloading the government chooses to undertake, the more important these goals are.

Dutch Disease: An uncompetitive real exchange rate

The increase of government expenditures that began around 2008 generated rapid growth in aggregate demand that aggregate supply was unable to keep pace with. As a result, inflation rates in Timor Leste rose significantly even with the US dollar as the country's currency. Among all dollarized countries, Timor Leste experienced the highest average annual rate of inflation from 2006 to 2016. Figures 12 and 13 illustrate the rise of price levels in Timor Leste in comparison to the US, where price inflations remained much lower.

Because demand growth in tradeable goods can be met through imports, price inflation in Timor Leste was driven mostly by the limitations in the supply from non-tradable sectors like construction and land. This is a well identified aspect of so-called Dutch disease (Frankel, 2011).[6] A key effect of this is an increase in the price of non-tradeable goods relative to tradeable goods. The ratio of prices of non-tradeable to tradeable goods is known as the real exchange rate (RER). Figure 16 illustrates the rise of Timor Leste's real effective exchange rate since 2010.

After 2014, growth in government spending moderated, as did inflation and RER appreciation. This has prevented a worsening of the situation, but it has not reversed the effects of Dutch disease. In 2017, the real exchange rate is still estimated to be overvalued by 27-44% (IMF 2017). To illustrate real exchange rates in the region, the Asian Development Bank benchmarked the cost of a an essentially identical product/service, the Burger King Whopper Value Meal. Across nine Southeast Asian countries and the United States.[7] Timor-Leste had the most expensive meal of all countries sampled, ahead of Singapore and the U.S.[8]

FIGURE 12 Consumer Price Index, USA and Timor Leste

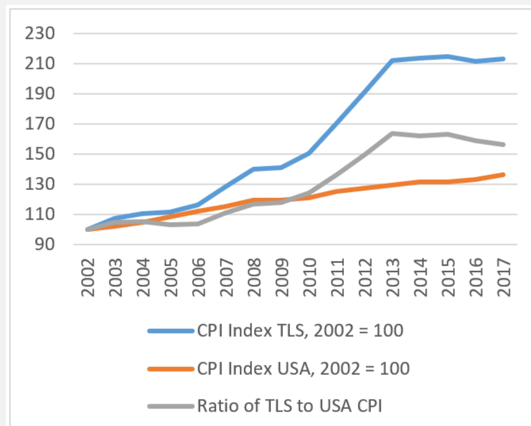
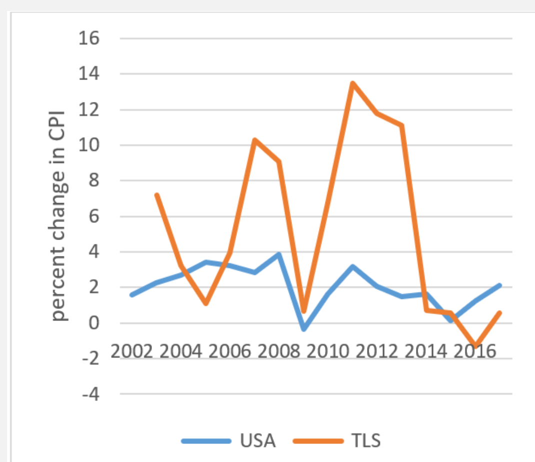


FIGURE 13 Rate of change in CPI, USA and Timor Leste



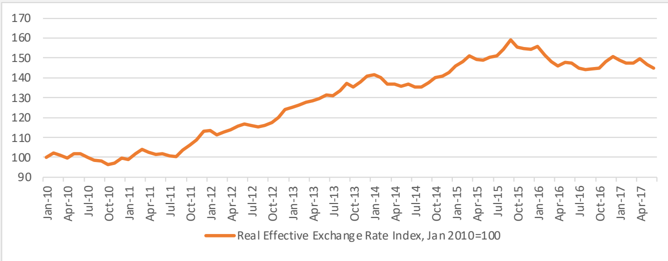
Source: World Development Indicators (2017)

6 The term was coined after the effects of a large natural gas discovery in the Netherlands in the late 1950s

7 2013 Timor-Leste Labor Force Survey

8 2013 Timor-Leste Labor Force Survey

FIGURE 14 Real Effective Exchange Rate



Source: Central Bank of Timor Leste

Dutch disease has also driven increases in the cost of labor. Median and mean monthly wages ($272 and $531 respectively)[9] are significantly higher than in regional neighbors such as Indonesia and the Philippines.[10] As discussed in the poverty section, The effect of growth in wages on poverty has been somewhat offset by increasing cost of living. Thus, due to RER appreciation, the economy has experienced wage growth that has reduced international competitiveness while not doing as much to improve standard of living. Furthermore, many poor households are not employed in wage labor and depend on income from tradeable commodities like coffee. Thus, their incomes have not risen with wage growth.

Through increasing the cost of non-tradeable inputs, Dutch disease makes it difficult for sectors like manufacturing or tourism to be price competitive in the region. Currently, manufacturing's contribution to GDP is just 1%, one of the lowest levels in the world. This has impacts on the poor as the manufacturing and tourism sectors might otherwise employ greater numbers of low skilled workers. Women are also disadvantaged by this as they have nearly equal participation in manufacturing employment but are less represented in sectors that are growing like construction and public administration (figure 15).

FIGURE 15 Employment by sector

Source: Labor Force Survey (2013)

9 2013 Timor-Leste Labor Force Survey

10 World Bank Infrastructure Expenditure Review (2014)

Business Enabling Environment: Weak institutions for supporting market transactions

For market-based economies to function, economic transactions must be predictable and enforceable. The laws, regulations, and institutions that achieve this are collectively referred to as the business enabling environment. Because Timor Leste is a young, post-conflict country, many important pieces of their business enabling environment have not yet been put into place including an effective commercial legal framework and judicial capabilities to enforce contracts. As a result, Timor Leste ranks 175th out of 190 economies in the World Bank's Doing Business Report (2017).[11] The inadequacies of the business enabling environment underlie difficulties conducting transactions across a variety of markets, including most prominently financial and land markets as discussed below. In summary, Timor-Leste has not yet put in place the policies and institutions necessary for an effective business enabling environment. The inadequacy of laws, regulations, and institutions to support business transactions and contracts is a binding constraint to economic activity as discussed below.

High cost of finance due to inadequate institutions to support transactions

Lending in Timor Leste is risky due to both an inadequate legal framework and an inability to enforce the framework. These weaknesses in the business enabling environment increase the risk of conducting financial transactions, resulting in higher costs to borrowers.

The commercial legal code in Timor Leste is out of date and inadequate to support a financial system. For example, it does not provide a framework through which lenders can encumber, register, seize, or enforce collateral. Even with the legal framework that is in place, the court system lacks bandwidth and expertise to hear commercial cases.

Timor Leste's performance on the Doing Business Indicators (2017) reflect these challenges. Timor-Leste has the highest cost of enforcing a contract in the world, at 163% of the claim value, far above the second highest cost of 119% in Mozambique. Timor Leste is also tied for last in the world on "registering property", and ranks 169th on "resolving insolvency", and 167th on "getting credit" out of 190 countries assessed.

These issues are felt by banks operating in Timor Leste. After a series of defaults in the late 2000s across Timor Leste's financial sector, one bank made the following statement about their experience attempting to resolve non-performing loans:

"Out of 100 cases that we filed at the court, only 7 made it through to court hearings. Out of these, we won all, but there has been no enforcement of the order."

This results in increased risk of lending in Timor Leste, which in turn causes banks pass to charge higher rates to borrowers. The average lending interest rate has risen into the mid to high teens, which is well above comparator countries.[12] High lending interest rates persist even though savings in the country are abundant and cheap (due in large part to the petroleum resource) with deposit interest rates[13] under 1%. The difference between the interest rate that banks pay on deposits versus the interest rate they charge for loans (known as the spread) is among the highest in the world and significantly higher than comparator countries (figure 16 and 17).

Jamaludin, Klyuev, and Serechetapongse (2015) find that institutional quality is an important driver of interest rate spreads among Pacific Island countries, but they also find that inflation, size of the economy, and market concentration are relevant factors. In Timor Leste, these non-institutional-quality factors cannot fully explain the very high spreads. Since 2014, inflation has been in the low single

11 Doing Business Indicators can be indicative of a problem, but do not identify a constraint on their own. Rankings must be complemented with assessments of prices, distortions and other evidence commonly referred to as "the four tests" that give a sense of the welfare loss associated with a distortion (Hausmann et al 2008).

12 World Development Indicators, 2017 "Real Interest Rate"

13 World Development Indicators, "Deposit Interest Rate"

FIGURE 16 Real interest rate spread in 2015 cross section

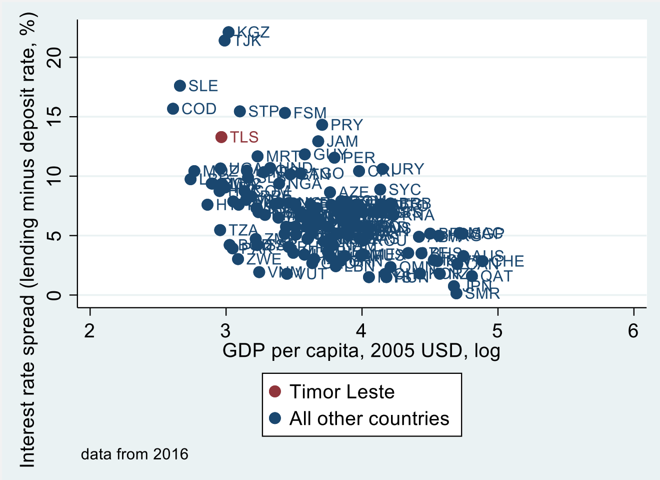
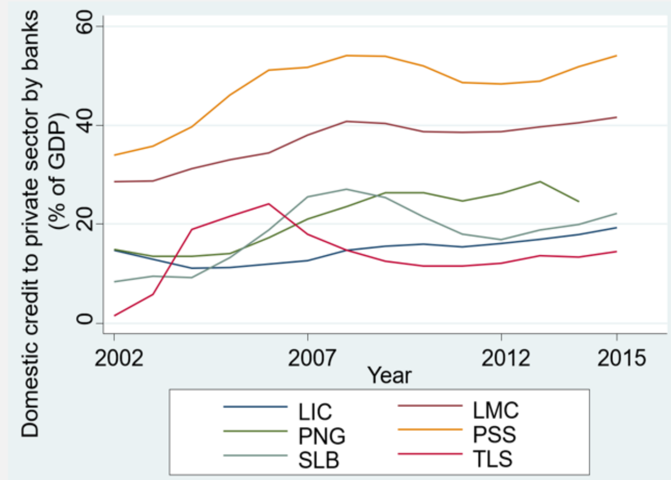
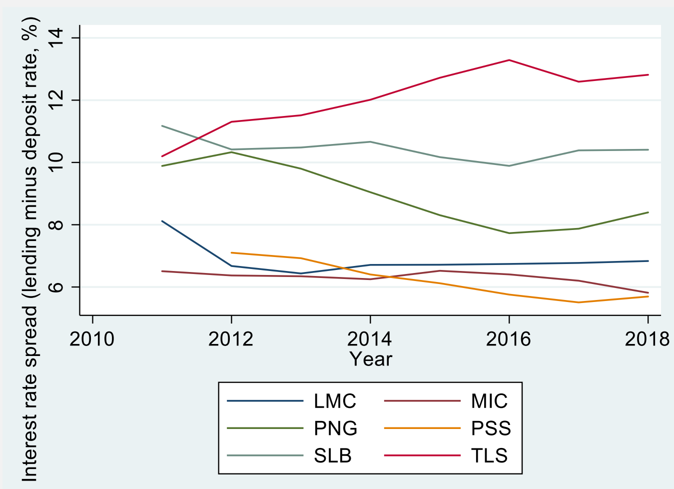


FIGURE 18 Credit markets are very shallow in Timor Leste



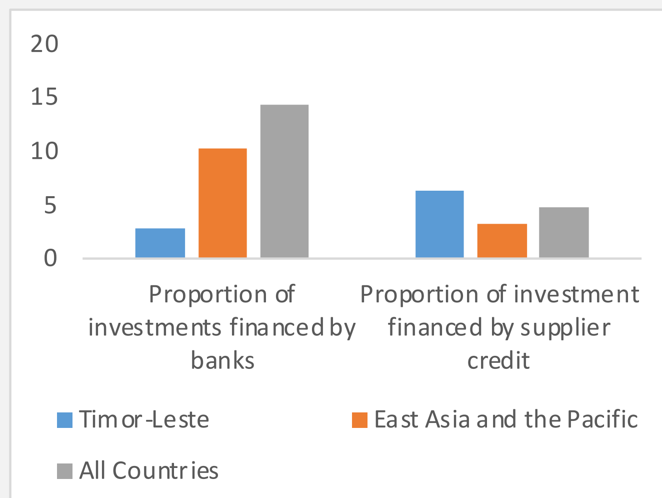
Source: Word Development Indicators (2017

FIGURE 17 The spread over time amongst comparators



Source: Word Development Indicators (2017)

FIGURE 19 High dependency on supplier credit



Source: World Bank Enterprise Surveys (2015)

digits, and is likely to remain stable in the dollarized economy now that growth in government expenditures has leveled off. The size of the economy ($1.5 billion), and number of banks (5), also compare favorably to similar countries that have much lower spreads. Therefore, while other factors play some role in the spread, institutional quality appears to be the main driver of the high spread and cost of borrowing in Timor Leste.

To circumvent the difficulties of transacting in the financial sector, firms in Timor Leste use options like supplier relationships to finance investment (figure 19) more than other comparators.

Insecure rights and ability to conduct transactions on land

The nascent state of market supporting institutions in Timor Leste also affect land transactions. Competing claims stemming from the legacy of three distinct tenure systems Portuguese, Indonesian, and customary, make land rights unclear and transactions especially challenging. The recently promulgated land law provides a potentially solid foundation for land transactions in the future. However, important subsidiary legislation remains to be approved and thus meaningful implementation of the new law has not yet begun.

Formal dispute resolution mechanisms are likely to represent a key to implementation of any legal framework on land. Furthermore, any approach to dispute resolution will face challenges reconciling with customary mechanisms that communities currently rely upon. Implementation of the new law may also create uncertainty for small firms, many of which do not hold clear title to their land. The complicated nature of the current cadastral system has reportedly fostered distrust, and anecdotally, fear about land use rights has grown. If dispute resolution mechanisms are not addressed, land disputes could become a source of conflict and further tax an already overburdened judicial system.

Women have particular difficulty in securing rights to land. While the legal system supports the right of women to own land, during the past two cadastral processes, women have not enjoyed equal access to titling due to the strong patriarchal culture around land rights.[14] In the 2015 Enterprise Survey, women led businesses were twice as likely to identify land as their biggest obstacle as a male led business. According to one stakeholder, during the Portuguese colonial period, women were signatory to about 80% of household documentation. Currently, women are less likely to claim rights to household property or household economic production and are more likely to have rights subsidiary to that of male family members.

The tourism sector is also especially constrained by a lack of clear land rights. Land with high touristic appeal tends to be in more rural or suburban areas where land rights are more complex. One of the largest planned investments in the country is a resort project that has been on hold for years due to a variety of land-related issues.

Potential effects in other markets

While the effects of these constraints are most apparent in financial and land markets, other markets are also affected. In labor markets, firms and employees rarely utilize formal contracts and instead rely on informal and/or customary institutions to structure employment relationships. Transactions within supply chains also rarely utilize formal contract mechanisms, instead relying on relationships and repeated interactions to ensure contract performance. While these types of practices are not necessarily inefficient, they may limit opportunities for new entrants.

Human Capital: Poor nutritional outcomes and lack of high skilled workers

Human capital in Timor-Leste has seen improvement since independence in both education and health. The literacy rate has gone up by 25 percentage points and youth literacy has reached 82%. Life expectancy has improved to reach 68 years. However, the full legacy of decades of conflict and low investment in human capital will take time to overcome. Today, poor early childhood development and a lack of high skilled workers are significantly affecting the human capital development of Timor Leste.

Impaired Child Growth and Development

Timor-Leste suffers from one of the highest rates of stunting in the world. Among children 0-59 months of age, roughly 50% were stunted as of 2013.[15] Stunting undermines children's cognitive development and ability to succeed at school. Stunting is not a condition caused solely by dietary factors. The quality of health care, exposure to pathogens, and maternal health can contribute to stunting. The 2013 Timor Leste Food and Nutrition Survey found that illness was strongly associated with an increase in stunting. In their examination of nutrition in Timor Leste, Provo et al (2017) identify that water and sanitation are likely contributors to stunting through an increased disease burden.

High skilled workers

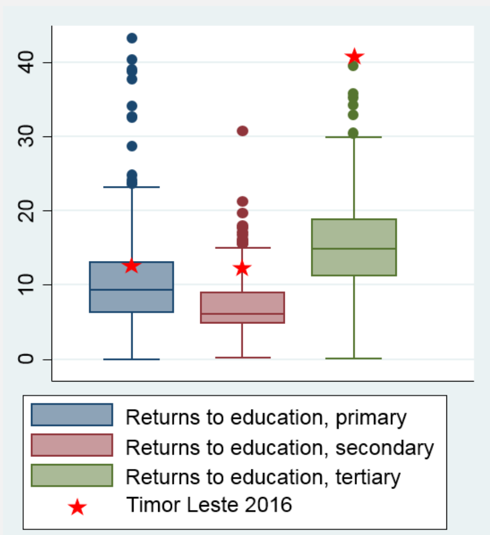
The demand for higher skilled workers is not being met in Timor-Leste. MCC's firm survey implemented in

14 Centre of Studies for Peace and Development (2014)

15 Timor Leste Food and Nutrition Survey (2013)

July-August 2017 found human capital to be the second most frequently identified constraint (behind access to finance). Analysis of the 2014 Living Standard Survey found the returns to income from attaining tertiary education in Timor-Leste to be exceptionally high at 45%, compared to 15% in the median country in Montenegro and Patrinos's (2014) sample (figure 22).

FIGURE 20 Box plot of returns to education across countries, by level of education



In response to the shortage of skills in the local economy, firms in Timor Leste are more likely to hire expensive expatriate workers. The 2014 Enterprise and Skills Survey found that close to 40% of managers and 30% of professionals were foreign nationals. In a recently established manufacturing plant, the operation was forced to hire twice as many expatriates to fill its staffing needs as is typical in similar operations in the region.[16] In the 2016 World Bank investor survey, 60% of investors responded that improving their ability to obtain visas for expatriate workers was an important action the government should take (the highest frequency among the potential actions listed). Many firms went on to comment explicitly that visas were critical because of their inability to find skills among local labor force. In the same survey, banks identified the poor quality of business skills among entrepreneurs as constraining their ability to provide finance.

While the evidence identifies higher-level and related entrepreneurial skills as the most problematic, options for good quality tertiary education are available in Indonesia and elsewhere in the region. Preliminary analysis suggests that inadequate preparation at lower levels may be preventing more students from attaining tertiary skills.

Non-Binding and Near-Binding Constraints

The constraints above are prioritized as the most binding to growth, but as discussed in this section, there are additional problems facing the economy that likely slow growth, although not as severely.

Ports

A key area of infrastructure in any country, but especially for a small island nation, are ports. The country's current port in downtown Dili is expensive and congested. In an island nation, this contributes to the high cost of operating. A PPP arrangement has been made with the facilitation of IFC to develop a new container port in Tibar Bay that will relax this constraint. The PPP model for implementing the project is groundbreaking in Timor Leste and a potential model for future projects. A study by the Economist Intelligence Unit on the ability of the GoTL to implement PPPs noted reasonable capability and an enabling legislative framework. More inclusion of the private sector through PPPs in future infrastructure projects could provide benefits including discipline to project selection and higher value-for-money.

Airports

The Dili airport does not provide adequate air connectivity to destinations in the region as the runway is too short at 1,850 meters to accommodate larger planes. The result is that the price and the travel time of air travel from major population centers in the region are higher for Dili than for cities like Port Moresby, Papua New Guinea or Port Vila, Vanuatu. This is particularly problematic for

16 Constraints Analysis team interview with the manager of a plant who had established similar operations in the region (May 2017).

the country's nascent tourism industry and exacerbates the country's challenge to becoming cost competitive. In addition, the terminal provides a sub-par experience for tourists and requires renovation (Gorbie, 2014).

Electricity

The share of the population with access to electricity has doubled since independence and is now over 50% (WDI). Among firms, only 2.6% identified electricity as their main obstacle (Enterprise Surveys, 2015). Yet maintaining these improvements requires significant subsidization (PER 2015). Thus, while electricity itself is not constraining productivity or investment, its effect on the government's fiscal position is relevant to the public financial management constraint discussed above.

Roads

While major national roads have been improving with support from donors including the World Bank, ADB, and JICA, more work remains to be done. Road travel in many areas of the country is slow due to poor road conditions and many roads become impassable during heavy rain. Stakeholders in Timor-Leste's coffee and agricultural sector have noted the condition of rural roads as problematic.

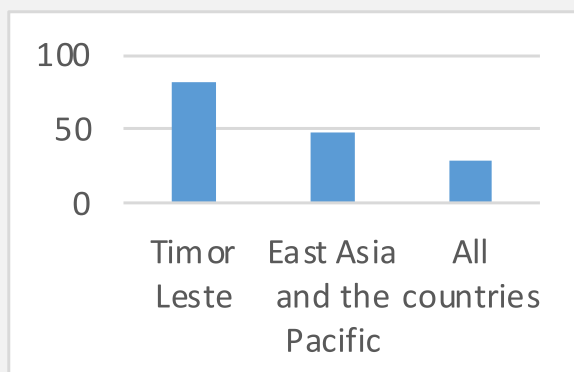
Information and Communications Technology

In the early years after independence the country had a single, monopoly provider of ICT services. Two additional service providers have since entered the market and prices have come down to levels at or below comparator countries. The share of the population using the internet has also rapidly grown in recent year to exceed 25%.[17] Yet bandwidth nationwide is still limited; the construction of an undersea cable is likely to be an important next step in meeting the ICT needs of the population and the economy.

Micro risks from corruption

Corruption is the second most identified obstacle in the 2015 Enterprise Surveys. However, corruption is a broad term, and in some respects the government of Timor Leste is doing relatively well. According to the Worldwide Governance Indicators, the country has improved on control of corruption. Firms' negative perception of corruption is likely driven by the significance of government procurements as economic opportunities, and the lack of controls on the process. As a result, most firms in Timor Leste report that securing a government contract requires a gift (figure 23). Thus, these corruption issues are likely one of the contributors to the public financial management constraint already identified, rather than an additional and separate constraint.

FIGURE 21 Percent of firms expected to give gifts to secure a gov't contract

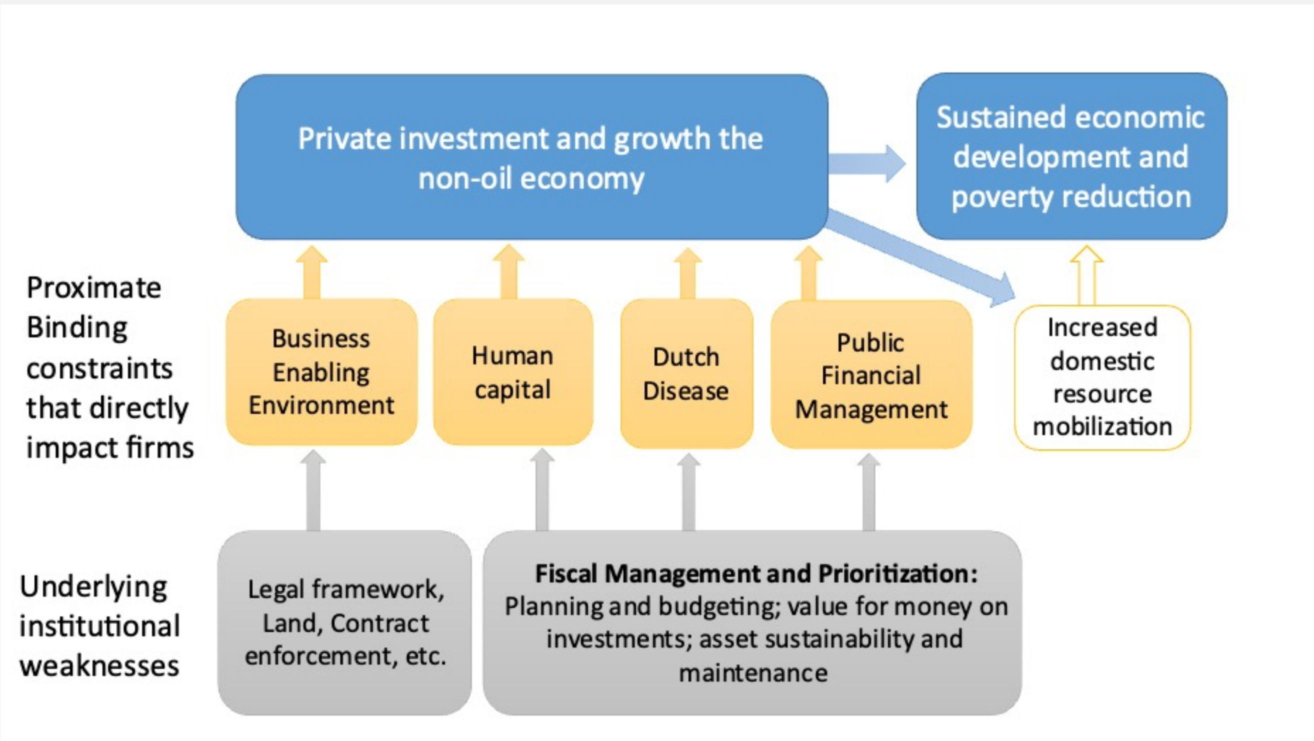


17 International Telecommunication Union, World Telecommunication/ICT Indicators Database

Conclusion

As a young country, Timor Leste has many development challenges to overcome. This makes prioritizing both difficult and important given the limitations of bandwidth and resources. The constraints identified in this report are key to the country achieving economic growth driven by a dynamic private sector. Addressing these constraints, and their underlying institutional drivers can provide a sustainable economic foundation for the future of the country.

FIGURE 24: Constraints to Economic Growth in Timor Leste



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Annex

Heat Map of Constraints

Rank	Factor	Diagnostic Test			
		High Shadow Price	Changes in Changes	Bypass the Constraint	Camels and Hippos
Binding Constraints	Public Financial Mgmt.				
	Dutch Disease				
	Business Enabling Env.				
	Human Capital				
Non-binding	Transport				
	Energy				
	ICT				
	Micro Risks				

Constraint Evidence Legend	
Suggests binding	
Mixed	
Suggests non-binding	
N/A	