

Can the Petroleum Fund Exorcise the Resource Curse from Timor-Leste?

By Charles Scheiner, 27 February 2015 ¹

Abstract

Oil and gas exports provide more than 93% of Timor-Leste's state revenues and three-fourths of GDP, making the young nation one of the most petroleum-dependent countries in the world. Although this fuelled 'double-digit' annual growth in non-oil GDP from 2007 through 2011, poverty and inequality are also increasing. Current development plans are unlikely to rescue Timor-Leste's people from the 'resource curse', which distorts planning, governance, decision-making and politics, leading to neglect of non-petroleum investments, especially agriculture and human resources.

Income from exporting non-renewable petroleum wealth is channelled through a Petroleum Fund which contains over US\$16 billion. Although Timor-Leste's currently active oil and gas fields may be dry by 2020, many believe that earnings from Petroleum Fund investments will continue to pay for state activities. Unfortunately, La'o Hamutuk's model shows that the Petroleum Fund may be empty within five years after that.

The prospect that the Petroleum Fund could be gone in a decade underscores the urgency to develop Timor-Leste's non-oil economy, increase domestic revenue and use public money wisely. In the end, the Petroleum Fund may have created an illusion of financial security that allowed Timor-Leste's leaders to defer difficult decisions and challenging tasks.

Oil and gas comprised 78% of Timor-Leste's Gross Domestic Product (GDP) in 2012 (RDTL DGS 2014a) and provided more than 93% of state revenues in 2014.² Most of the money from selling off non-renewable petroleum wealth has been saved in a Petroleum Fund (PF), which contains US\$16.5 billion. People expect the PF to finance state activities after the oil and gas fields are exhausted, which could happen within six years, but the PF itself may be empty by 2025. Timor-Leste has about a decade to use its finite oil resources to underpin long-term prosperity and development.

This article gives an overview of the consequences of Timor-Leste's reliance on its limited oil and gas reserves, focussing on its impacts on economics and decision-making. It explores how effectively Timor-Leste's Petroleum Fund, a sovereign wealth fund which was established in 2005 with extensive guidance from international agencies, can prevent or ameliorate some of the most serious consequences of the 'resource curse' – the negative impacts of non-renewable resource wealth on citizens of most countries which depend on exporting petroleum and mineral wealth.

The article draws on research and analysis by the Timor-Leste Institute for Development Monitoring and Analysis, also known as La'o Hamutuk. La'o Hamutuk is an independent Timorese civil society organization founded in 2000 to support the country's political and economic sovereignty, from the perspective of social and economic justice. It analyses reports and proposals from government, international agencies and other sources, compares them with observations and other data, and uses its findings to enhance public and leaders' understanding of the context and likely consequences of policy options. In addition to using published documents, La'o Hamutuk consults with officials, experts, practitioners and researchers. La'o Hamutuk also advocates for policies and programs which will benefit Timor-Leste citizens both now and in the future.

Published statistics and international comparisons involving Timor-Leste are often inaccurate or inconsistent, frequently confusing total GDP with non-oil GDP, even though it is four times larger (La'o Hamutuk 2014b; compare RDTL DGS 2013 with RDTL DGS 2014a). This makes it challenging to

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² During 2014 Timor-Leste received US\$1,817 million from oil and gas revenues and \$502m from investing the Petroleum Fund, including unrealized stock price changes (Central Bank of Timor-Leste 2015). Non-oil state income totaled US\$166 million, of which a significant portion was paid by the state to itself (RDTL MoF 2015). Oil revenues have declined since 2012, and therefore comprise a smaller percentage of the shrinking total of state revenues.

understand whether contradictions and retroactive revisions come from improved data or methodology, political motivation, or agencies' reluctance to differ with the Government.³

Oil swamps the economy.

Timor-Leste relies on its petroleum exports more than every nation except South Sudan, Libya and perhaps Equatorial Guinea. However, this dependency is not due to vast oil and gas reserves or high production rates, but because the non-petroleum economy, which scarcely existed when independence was restored in 2002, is still very small.

Although 22% of Timor-Leste's five billion (US) dollar Gross Domestic Product has been categorized as 'non-oil,' about half of this is generated by state spending for public administration, procurement and infrastructure construction. Since oil money provides the lion's share of state revenues, this will evaporate when the wells dry up. The private sector and consumer-driven portions of economy – agriculture, manufacturing, and local commerce for businesses and individuals – averages less than two dollars per citizen per day, although most citizens make do with far less than the average.

Table 1: Gross Domestic Product in 2012⁴

(million USD)

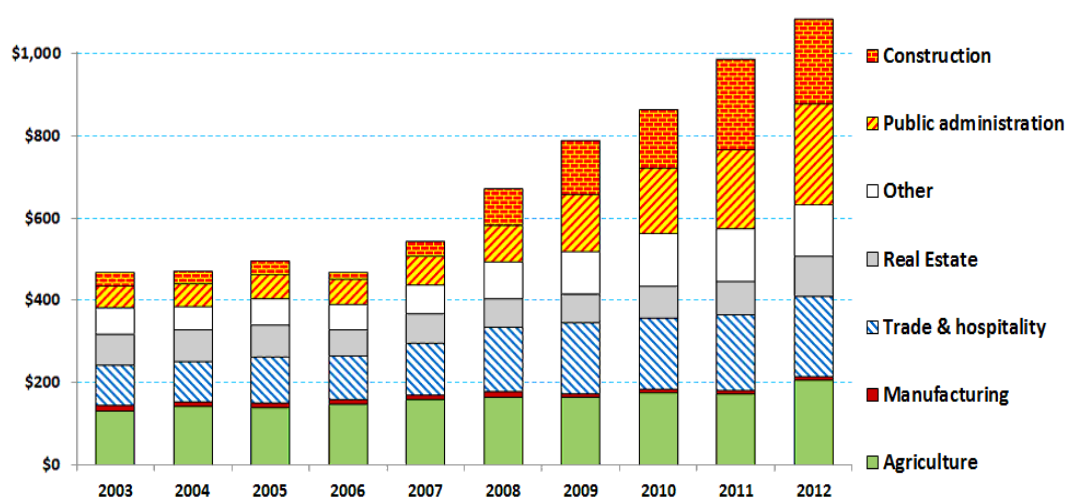
Total Gross Domestic Product (GDP)		US\$5,555	
GDP from Petroleum Sector		\$4,309	78%
Non-oil GDP		\$1,246	22%
Of which: Productive GDP (agriculture and manufacturing)		\$247	4%

Source: RDTL DGS 2014a

Government officials are proud that the non-oil GDP is growing at 'double-digit rates' (RDTL Prime Minister 2014, 3; La'o Hamutuk 2014b; Global-Insight 2014, 6), but virtually all of this growth represents rising state

spending. The productive parts of the economy – agriculture and manufacturing – are only 4% of total GDP. After adjusting for global inflation and population, these sectors increased an average of 4.9%/year between 2007

Figure 1: Sectorial contributions to Timor-Leste's 'non-oil' per capita GDP



and 2012 (RDTL DGS 2014a), less than two-thirds as much as consumer prices increased (RDTL DGS 2014b). By comparison, public administration and construction (largely paid for with public money) averaged 28.5% and 41.5% real annual growth per capita during the same period (RDTL DGS 2014a).

³ For example, in December 2013 the IMF estimated that Timor-Leste's total GDP increased by 5.7% between 2011 and 2012 (IMF 2013), but Government statistics eight months later said that it had *declined* by 10.4% (RDTL DGS 2014a). During 2014, UNDP and the World Bank also published misleading or incorrect data on Timor-Leste, and the Government prevented the IMF from publishing its annual Article IV report on the country because of disagreement over the report's content.

⁴ Although more official data is not yet available, total GDP declined more than 10% per year in 2011 and 2013 (IMF 2014) as oil production and revenues decline. As non-oil GDP grew during those two years, the percentage of GDP derived from petroleum is declining. During 2014, oil revenues to Timor-Leste fell by almost half, and the GDP is likely also to have fallen sharply.

Nevertheless, state agencies and the small middle and upper classes have money to spend, and the absence of convenient local products leads them to purchase goods and services from overseas, as shown in Table 2.

Table 2: Balance of external trade

(million USD)

Goods (2014)	-US\$512	
Imports ⁵	\$526	97%
Exports (excluding offshore oil and gas)	\$14	3%
Services (2013)	-US\$582	
Imports	\$627	93%
Exports	\$45	7%
Total trade deficit	\$1,258	

Sources: RDTL DGS 2015 (goods); Central Bank of TL 2014 (services)

Unfortunately, trade is less diverse and more import-heavy than the numbers show. More than 94% of exported non-oil goods are coffee, whose value fluctuates with the weather and the global market. A large part of the exported services are tickets on international airlines sold through travel agencies in Timor-Leste.

Prioritizing short-term purchases over sustainable national development results in extreme import dependency. More than half of state spending immediately goes abroad, and individuals make little effort to spend in the local economy. Chickens are imported from Brazil, rice from Vietnam, eggs and beer from Singapore, fruit juice from Cyprus, onions from Holland, garlic from China, milk from Australia... In 2014, more than US\$116 million went to Indonesian suppliers for everything from water to candles to cigarettes to instant noodles to sugary drinks to canned fish. Although a few agencies advocate 'local content,' almost nobody weighs economic sovereignty when deciding what to buy. Current and pending free trade policies make it even harder to cultivate local production. As oil and gas revenues tail off, there will be little cash to pay to foreign suppliers, and imports will become unaffordable. Without local food production, people will starve.

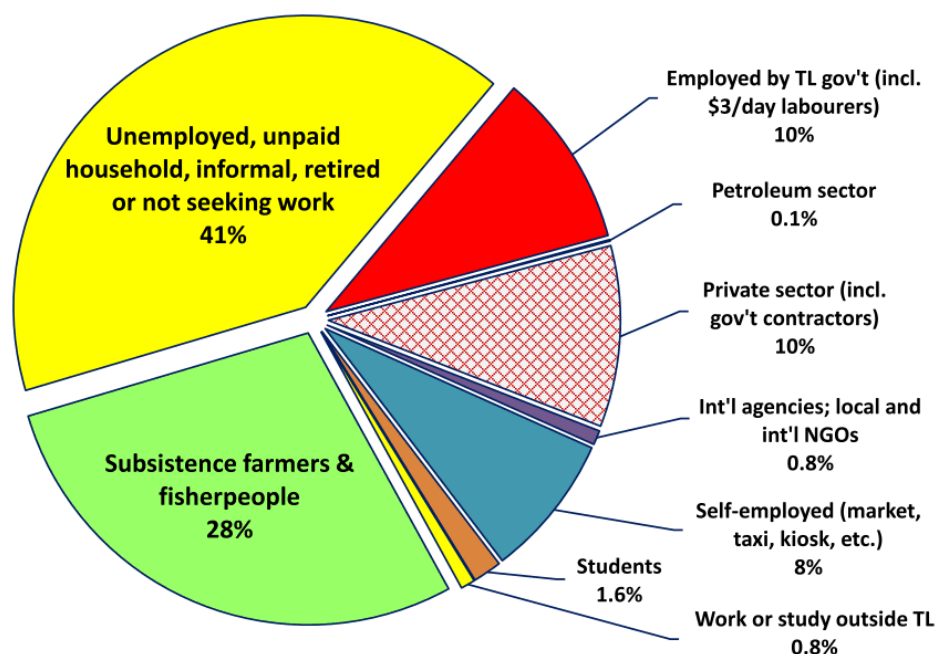
⁵ Some RDTL Directorate-General of Statistics trade reports have erroneously included U.S. dollar notes and Portuguese-minted coins as imports; they are not included here.

Counting people rather than dollars tells a different story. Timor-Leste is an agricultural country, and most households live mainly from subsistence farming.

The formal economy, both public and private, employs less than a third of the working-age population. Only 10% of the working-age population works for companies, and less than one-fiftieth of those jobs are in the petroleum industry. As the IMF explains, 'The oil and gas sector is the mainstay of the economy. ... However ... the sector directly accounts for virtually no on-shore employment. Its economic impact is entirely via government spending' (IMF 2013).⁶

Figure 2: What do Timorese people do for work?

Population aged 15-64: 630,000



Sources: RDTL MoF 2014a; RDTL DGS 2014b; RDTL DGS 2014c; La'o Hamutuk estimates

Oil fuels the state machinery.

As Table 3 shows, more than 90% of Timor-Leste's government revenues are from oil.

Table 3: Sources of income in the 2015 General State Budget (million USD)

Projected revenues (to be deposited into the Petroleum Fund)	\$2,461	
Revenue from oil and gas exports ⁷	\$1,374	56%
Return on Petroleum Fund investments	\$916	37%
Non-petroleum (domestic) revenue sources	\$170	7%
Budgeted sources for financing state expenditures	\$1,570	
Withdrawn from the Petroleum Fund during 2015	\$1,327	85%
New loans (to be repaid mostly with petroleum money, if it still exists)	\$70	4%
Non-petroleum (domestic) revenues	\$170	11%

Source: RDTL MoF 2015

About US\$25 million of the US\$170m in 'domestic revenues' will come from taxes paid by the state to itself (such as import taxes paid by companies working on state-financed projects). Another US\$19 million will be the gross receipts of the highly-subsidized public electricity system, which recovers only 20% of its operational costs from users and uses oil income to cover its operating deficit and capital outlays.

⁶ In February 2015, the Business Activities Survey for 2013 (DGS 2015b) reported that the number of private sector jobs had dropped 4.1% since the previous year, an omen which calls for deeper analysis. Women workers disproportionately lost their jobs.

⁷ This projection is too high. World prices for Brent crude oil fell by more than 50% between mid-2014 (when the 2015 budget was prepared) and the beginning of 2015. La'o Hamutuk explained why the budget should be revised (La'o Hamutuk 2015), but it is unclear if this will be done.

Policies neglect other domestic revenues; a 2008 'tax reform' slashed import, wage and business taxes in hopes that this would encourage foreign investment and reduce prices to consumers. As a result, Timor-Leste now has the third-lowest Total Tax Rate in the world, one-fourth of the global average (World Bank/PWC 2013).

The Sovereign Wealth Fund saves petroleum revenues.

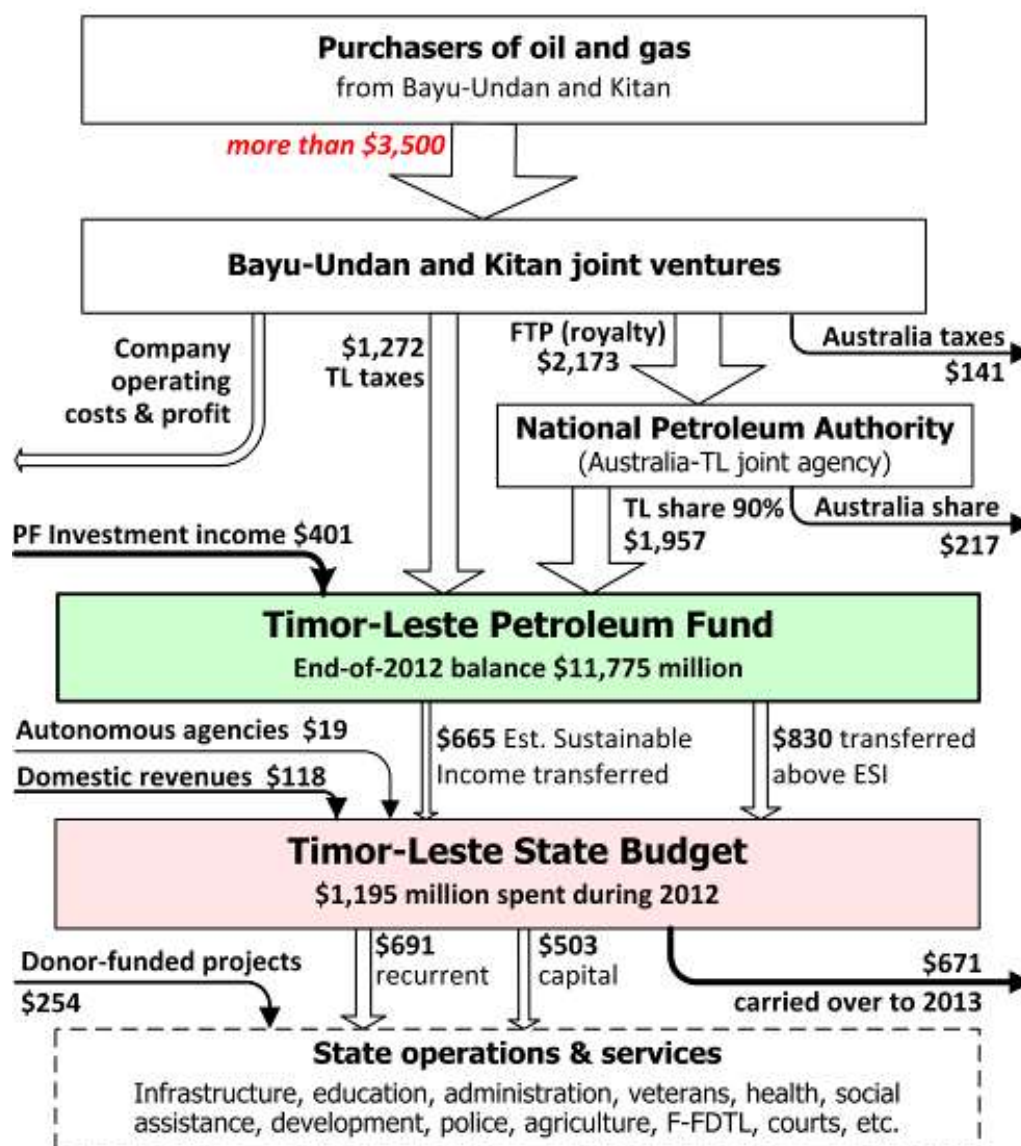
Almost all of Timor-Leste's oil and gas income is deposited into the Petroleum Fund (PF), which serves as a buffer between this income and annual expenditure. This allows the state budget to respond to public needs, rather than oil price and production fluctuations. 40% of the PF is invested in the global stock market, with the balance in bonds, mostly from the U.S. government. Returns from these investments are re-deposited into the PF. When the PF was being created in 2004-2005, designers intended that these earnings would replace oil revenues after the fields run dry (Central Bank 2015; La'o Hamutuk 2013).

Every year, the Ministry of Finance calculates an Estimated Sustainable Income (ESI) benchmark

equal to 3% of the current Petroleum Fund balance added to the net present value of expected future revenues from oil and gas fields with approved development plans.⁸ The ESI informs the decision of how much to withdraw from the PF each year to finance the state budget, although it was exceeded every year from 2008 to 2012, and again from 2014 onwards (RDTL MoF 2014b).

Figure 3: Timor-Leste's Petroleum Revenue Streams

Totals for 2012. Millions of U.S. dollars, estimates in *italics*.



Note: Figures for petroleum operations and income to the Petroleum Fund (numbers above the Petroleum Fund box) are amounts received in 2012, not including overdue and advance taxes. Figures for the state budget (numbers below the Petroleum Fund box) are amounts executed during 2012.

Graphic by La'o Hamutuk based on information from RDTL BCTL and MoF Petroleum Fund reports, budget and transparency portal, Santos ASX filings, ANP website. May 2014

⁸ At present, these are the Bayu-Undan and Kitan fields in the Joint Petroleum Development Area, from which Australia takes 10% of the revenue. The Greater Sunrise project has no approved development plan, so it is not part of the ESI.

The ESI does not reflect population. It was designed to spend more per person now than later, investing in Timor-Leste's future and being supplemented by other revenues over time. If future oil revenues and investment returns follow ESI's prudent projections, the ESI would be the same amount every year, regardless of population, local inflation (which has been far above global rates), improved state services or growing expectations. Unfortunately, overspending ESI has lowered the balance in the Petroleum Fund, reducing its future investment earnings. In fact, the PF goal of using return from investments to finance state activities for decades after the oil and gas are gone is unlikely to be achieved, due to transfers above ESI, rapid budget escalation, revision of the Petroleum Fund Law, less prudent price projections and lower oil production and income.

Figure 4 shows how much money Timor-Leste's state budget has received and spent since the restoration of independence in 2002. The narrow bars show actual revenues through 2014 and budgeted revenues during 2015.⁹

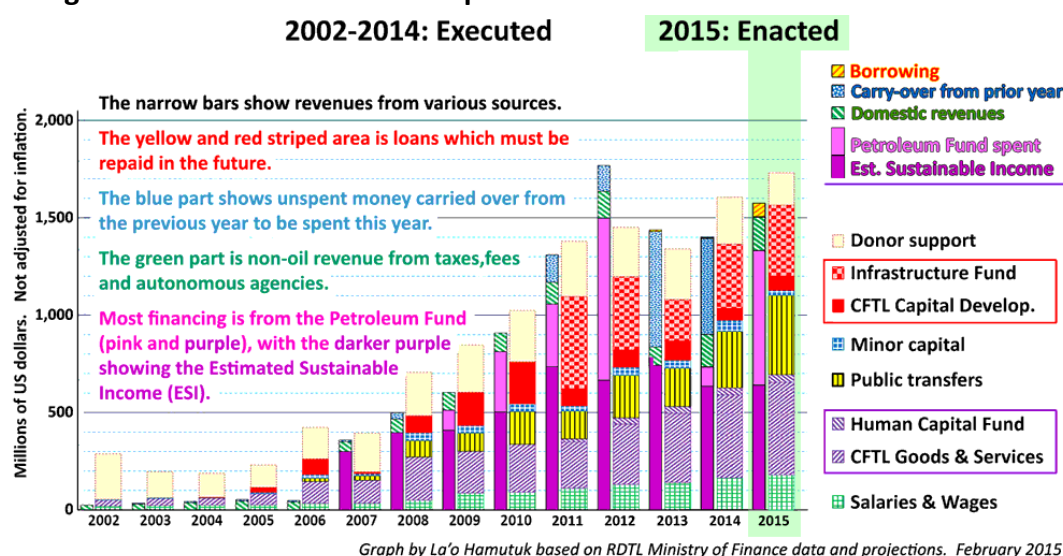
The lowest two segments (solid pink and purple) represent withdrawals from the Petroleum Fund, while the upper segment (stippled blue) is the balance carried over from excess withdrawals from the PF in prior years. However, the blue (carryover) and yellow/red (borrowing, which started in 2014) also mainly come from the PF in the past and the future.

Large oil revenues began in 2006; they have been declining since 2012. They pay for virtually all state expenditures, which grew more than 25% per year from 2008 and 2012, faster than every nation except Zimbabwe.

The principal source of income is the Bayu-Undan oil and gas field, operated by U.S. oil giant ConocoPhillips. In 2013, the company downgraded its estimate of future revenues to Timor-Leste by 49%, with production to end four years earlier than previously estimated (RDTL Ministry of Finance 2014a). Partly in response, for the first time in history, the Government withdrew less than the Parliamentary limit (which had been set at ESI) from the Petroleum Fund and financed its operations with the cash balance accumulated in prior years.¹⁰ Although Timor-Leste hired independent experts in the hope that ConocoPhillips was wrong, they confirmed the company's predictions. During 2014, oil revenues to Timor-Leste dropped 42%, primarily because production fell 24% as the fields near the end of their productive lives.

The 2014 budget allowed withdrawal of up to US\$903 million from the Petroleum Fund, well above the US\$632 million ESI, which La'o Hamutuk and Parliament's Committee on Public Finances had said was unnecessary (La'o Hamutuk 2013b; RDTL Parliament 2013). By the end of the year, \$732 million had

Figure 4: State Revenues and Expenditures



⁹ In February 2015, the government was restructured, requiring changes to the State Budget. However, the information in this paper is based on the original 2015 State Budget as enacted in December 2014.

¹⁰ The 2013 budget authorized US\$787 million to be withdrawn from the Petroleum Fund, equal to the Estimated Sustainable Income, but the Government withdrew only US\$730m because much more had been withdrawn during 2012 than the government could spend (La'o Hamutuk 2013a). Nevertheless, 2013 ended with US\$634m in the Treasury account, more than triple the cushion the Government says it needs. During 2014, the Treasury again paid for increased spending. However, the balance had been drawn down to \$181 million by year-end, leaving little to be rolled over into 2015.

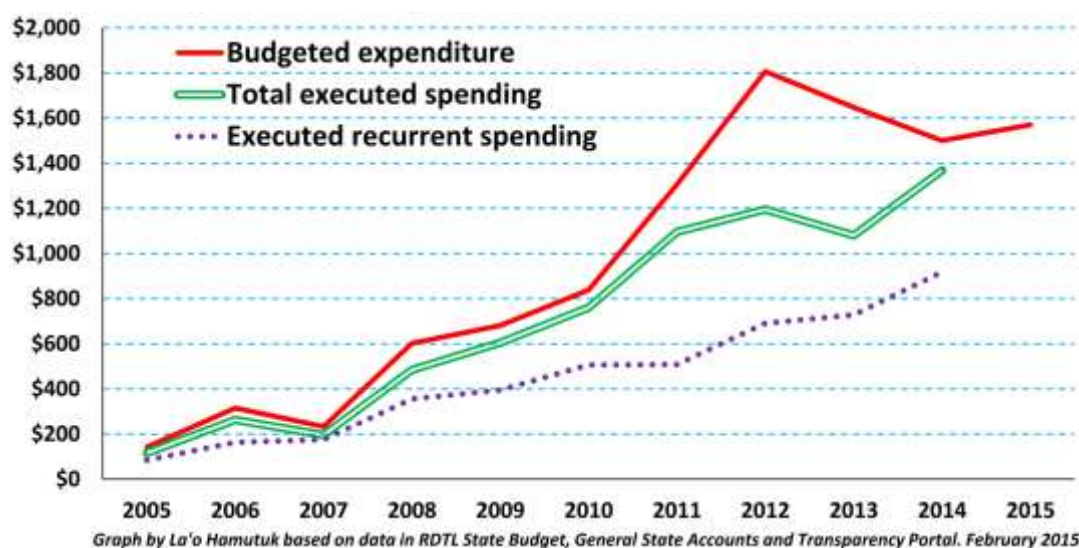
been withdrawn, \$100 million more than ESI. The 2015 budget limit Petroleum Fund withdrawals to US\$1,327, and it is likely to be used because the carried-over balance which had supplemented lower transfers during 2013-2014 no longer exists. The Government transferred \$70 million from the PF in January 2015, the first time a transfer has ever been done during the first two months of a fiscal year.

Spending grows quickly, but not always wisely.

State expenditures are shown as the wider bars in Figure 4, with the tan upper segment representing donor contributions which are not included in the state budget. The next two (red) segments represent physical infrastructure. Infrastructure construction absorbed half of state expenditures while the electricity system was being built in 2011, and it still absorbs more than a third of the budget. Although spending on large projects has slowed due to delays, it will resurge if projects on the drawing board, including Dili airport, Tibar Port, the Oecusse Special Economic Zone and the Tasi Mane petroleum infrastructure project are built.

Spending on recurrent costs (salaries, goods, services, public grants) continues to increase about 20% per year, even though total appropriations got smaller after 2012.

Figure 5: Budgeted, executed and recurrent spending year-by-year



Timor-Leste continues to under-invest in health and education, spending 14% of its budget on these human resources, compared with more than 30% in well-managed developing countries (UNDP 2011). Most children

Figure 6: Allocation of the enacted 2015 State Budget (US \$1,570 million)



born during the post-1999 'baby boom' are not getting adequate nutrition or education, which will have severe, long-term consequences for the nation's future.

Agriculture, which sustains most Timorese households, receives only 2% of 2015 state spending (La'o Hamutuk 2014).

The resource curse has many faces.

Timor-Leste's economy and politics are typical of the 'resource curse' (Neves 2013), a set of conditions, choices and consequences that almost always makes citizens of extractive-export-dependent countries worse off than people in countries with little oil or mineral wealth. In general, the 'resource curse' results from easy access to non-renewable wealth, which is seen as a windfall which can be freely spent on short-term desires, rather than strategic longer-term development. Since there are few taxpayers demanding that their money be used wisely, corruption, conflict and opacity often occur, although Timor-Leste has taken some steps to avert them. At the end of the day, when all the mineral wealth has been converted to cash and spent, the opportunity to develop a sustainable, self-sufficient economy may also have been squandered.

The resource curse is not magic or metaphysical – it occurs in almost every impoverished nation whose economy is dominated by exporting non-renewable resources, including Nigeria, Ecuador, the USSR, Libya, Gabon, Iraq, Congo, Equatorial Guinea, Papua New Guinea and Nauru. Oil and gas exporters are the most vulnerable, due to the volatility of the international market, avarice of the petroleum industry, and the industrialized world's addiction to petroleum. With most wealth deriving from extractives and state spending, rent-seeking -- working to get a piece of this money, rather than to produce something -- becomes dominant. Although one form of this is corruption, most resource-curse-driven behaviour is legal and accepted, albeit more fundamental and widespread.

Timor-Leste protected itself against one consequence of the resource curse by using an international currency; the U.S. dollar safeguards against runaway inflation and 'Dutch disease'. However, inflation in Timor-Leste has been much higher than in our trading partners, due to the lack of local productive capacity and the supply of money exceeding the supply of imports.

Furthermore, the international oil market is priced in U.S. dollars, so when a rising dollar makes oil and commodity prices fall, state revenues also drop. During 2014, the U.S. dollar rose and oil prices fell, lowering inflation but sharply reducing state revenues and the value of Petroleum Fund investments in other currencies (La'o Hamutuk 2015).

Available wealth attracts shady characters

A cash-rich government with limited experience and safeguards is a tempting target for scammers, tax-evaders, thieves and opportunists from all over the world, as shown by these examples (La'o Hamutuk 2012b).

In 2009, Malaysian Datuk Edward Ong promised to build the Pelican Paradise luxury resort just west of Dili. Ong then asked the Minister of Finance to deposit US\$1.2 billion from Timor-Leste's Petroleum Fund in a blocked bank account controlled by Asian Champ Investment, Ltd, promising to pay 7.5% interest and to return the money in one year. His proposal was taken seriously, and the Minister travelled to London with the President of Timor-Leste's Investment Advisory Board (IAB) for further discussions. In the end, prudence prevailed, and Timor-Leste declined to give the apparently fictional company a billion dollars. The IAB noted that 'worldwide there have been a number of reported cases where institutional investors have fallen prey to fraudulent schemes under arrangements involving apparently secure deposits in "blocked accounts" at reputable banks, higher than market interest rates, a rapid decision-making process, and little if any documentation concerning the parties making the offer' (RDTL Petroleum Fund Investment Advisory Board 2009; La'o Hamutuk 2010).

On 19 June 2014, U.S. Federal agents arrested Nigerian-born U.S. lawyer Bobby Boye, who worked in Timor-Leste from 2010-2013 advising the Ministry of Finance on petroleum tax collection (La'o Hamutuk 2014f). U.S. prosecutors charged Boye with seven counts of wire fraud, alleging that he created a fake company Opus & Best and used his influence to have the Timor-Leste government pay O&B US\$3.5 million. Boye's trial is pending in the United States, and many suspect that others were involved in his crimes, either through conspiracy or negligence. It is clear that both the Norwegian aid program which initially hired him and the Ministry of Finance which extended his employment and awarded contracts to O&B failed to exercise due diligence (La'o Hamutuk 2014e), as Boye has a long record of criminal and financial malfeasance (*Aftenposten* 2014, La'o Hamutuk 2014j).

Timor-Leste's state owned petroleum company, TimorGAP, has spent tens of millions of dollars and signed contracts for billions during its three years of operation, but it has not generated any income. IN August 2014, La'o Hamutuk suggested that the Court of Appeals audit their finances, as Parliament and the public know very little about the obligations they have incurred on behalf of the state (La'o Hamutuk 2014h).

Some structural elements of the resource curse are nearly impossible to control, such as the ruthlessness and amorality of huge international oil companies, global and local environmental damage, invasions and civil wars, and the capital-intensive, high-skill nature of the petroleum industry. Others, however, can be overcome – although it is rare to find political leaders in any country with the far-sightedness, wisdom and courage to make the best decisions for their people's future.

Timor-Leste's history and geography make the resource curse more severe than it would be from petroleum dependency alone, including these factors:

- **Extreme poverty and underdevelopment.** Portugal did little to develop economic production or human resources, while Indonesia destroyed infrastructure and discouraged individual initiative or self-reliance. Only a small fraction of Timor-Leste's 1.2 million people have had access to good education, entrepreneurial skills, or managerial experience.
- **Emergence from foreign rule.** Until 2002, leaders and citizens never lived under democratic self-government by rule of law. Administrative and legal structures must be built from scratch, overcoming the bad habits civil servants learned while working in and/or resisting inefficient, illegal and corrupt Indonesian and Portuguese administrations. Citizens and leaders alike are learning how to effectively participate in a peaceful, transparent, accountable, stable, democratic society, where government with citizen consent and participation serves the public interest (La'o Hamutuk 2015a).
- **Recovery from prolonged war.** Many people are traumatized. Repeated unpredictable, uncontrollable interruptions to people's lives has taught them not to plan for or invest in the future. Leaders who excelled at combatting foreign occupation lack the skills for peacetime, democratic, consultative governance. Around the world, struggles over oil and minerals often lead to war and conflict, but Timor-Leste hopes that that phase of its history is over.
- **Self-interested neighbours.** Although both Australia and Indonesia claim to support the new nation, their thirst for oil and insistence on impunity belie their good will. Australia continues to occupy about 40% of the oil and gas reserves that should belong to Timor-Leste under current international law (La'o Hamutuk 2014a).

This toxic combination makes it almost impossible to develop a sustainable, equitable economy. PowerPoints substitute for plans; the Strategic Development Plan 2011-2030 (RDTL 2011) is an enticing, impossible dream. In search of showy quick solutions, planning neglects the unglamorous but essential tasks of alleviating poverty, replacing imports and working toward food sovereignty.

The cash-flush government has hardly any taxpayer-voters demanding financial accountability. The elite and some constituencies believe that they are entitled to a disproportionate share of public resources, a pattern set by rewarding heroes of the liberation struggle and 'buying peace' to neutralize potentially troublesome groups or political opponents. Instead of the give-and-take which constrains state spending in 'normal' countries, the whims of politicians and promises of salesmen are using up Timor-Leste's finite oil wealth. The appointment of Dr Rui Maria Araujo as Prime Minister in February 2015 has prompted optimism that these patterns may change, but former Prime Minister Xanana Gusmão continues in a major role, with responsibility for planning, investment, infrastructure, petroleum, statistics and other key sectors.

Multi-hundred-million-dollar, multi-year infrastructure projects like the Tasi Mane south coast petroleum infrastructure project and the Special Economic and Social Market Zone in Oecusse are initiated without realistic estimates of their total cost, competitive advantage or economic viability (La'o Hamutuk 2013d; La'o Hamutuk 2014g). Adding to the risk, loans from foreign institutions (sometimes disguised as Public-Private Partnerships) incur hundreds of millions of dollars in debt which will have to be repaid after the oil and gas is gone (La'o Hamutuk 2013c; La'o Hamutuk 2014d).

When a decision-maker has access to money, it seems like the solution to every problem. It's easier to buy a scholarship than to build a quality university -- the budget for overseas scholarships is far higher than the appropriation for the National University of Timor-Leste, which educates four times as many students as will receive the scholarships (RDTL MoF 2014a, RDTL MoF 2015). Similarly, the state pays for a few well-connected people to fly to overseas hospitals, but most citizens cannot access decent

health care. Roads and bridges in the capital used by VIP visitors are repaved frequently, with street vendors and neighbourhood markets moved out of sight, while rural communities struggle with impassable tracks and rivers. Airport and highway construction could consume a billion dollars – yet very few Timorese people will ever fly or own a car. Hundreds of millions more may pay to construct a container port which can handle an eight-fold increase in imports -- but without oil money, how will Timor-Leste pay for the imports or guarantee the investor's expected return?

More ominous, petroleum dominates planning, diverting attention from sustainable, equitable, realizable development paths. Because oil is where the action is today, the most persuasive, creative and ambitious people choose to work in petroleum regulatory agencies, oil corporations and the TimorGAP state-owned oil company. They persuade budgeters to award millions of dollars for concept studies, 'pre-FEED' designs and promotional presentations. When the resulting proposals are compared with those for agriculture, tourism or import-substituting manufacturing, the playing field is tilted.

Similarly, the best and brightest university students major in petroleum engineering, similar to the rent-seeking that led many in the West to become stockbrokers and lawyers during the bubble before the 2007 financial crisis (Stiglitz 2014, chapter 2), but few jobs exist for inexperienced graduates in the capital-intensive petroleum industry (Rigzone 2015). As a result, less glamorous but more necessary fields like civil engineering, education, business development, management, water supply, sanitation, nutrition and health care are deprived of both financial and human resources (Neves 2014).

This petro-state doesn't have much petrol.

If Timor-Leste's oil reserves were as large as Brunei's or Saudi Arabia's, these problems could be drowned in dollars. Unfortunately, geology has not been that generous to this new nation. Even if the Greater Sunrise field is developed with a Liquefied Natural Gas (LNG) plant in Timor-Leste and Australia taking only half of the upstream revenues, total expected oil and gas revenues be inadequate to support one (current) dollar per person per day of public spending over the next four decades. This would be less than one-third of the 2015 State Budget, which pays for a level of services that nobody would consider adequate over the long term. If the balance in the Petroleum Fund goes up and the stock market booms, additional revenue from investments could help a little, but recent patterns make this improbable (Scheiner 2014).

Oil revenues peaked in 2012, and Timor-Leste has already received more than 70% of the expected income from its only two producing oil and gas fields. Kitan production will end in 2016 and Bayu-Undan by 2020 (RDTL MoF 2015; La'o Hamutuk 2014c). By comparison, Australia is richer in petroleum than Timor-Leste, with larger future potential. Indonesian reserves are smaller for its population, but they are being pumped more slowly than Timor-Leste's.¹¹

Table 4: Oil and gas reserves in nearby countries

	Timor-Leste 50% Sunrise	Timor-Leste no Sunrise	Australia 50% Sunrise	Australia no Sunrise	Indonesia	Brunei
Known oil and gas reserves per person	700 barrels	230 barrels	1,140 barrels	1,090 barrels	87 barrels	6,780 barrels
Likelihood of additional discoveries	Low (small area, explored for decades)		High (further offshore)		Moderate (large area)	Moderate (deeper water)
How long reserves will last at 2013 production rates	14 years	4.6 years	64 years	63 years	29 years	23 years

Sources: La'o Hamutuk estimates, Santos 2014 and ANP 2014 for Timor-Leste; BP 2014 for other countries

Timor-Leste's petroleum officials have faith that Timor-Leste has large undiscovered oil and gas deposits, and that the companies' projections are too pessimistic (*Timor Post* 2014).¹² During the

¹¹ This table is based on estimates made before crude oil prices fell by more than 50% in late 2015. The quantities of oil and gas which can be profitably recovered are now lower.

¹² In 2007, Timor-Leste tried to continue oil production from the Elang-Kakatua field after ConocoPhillips decided it was no longer worth operating. They were unable to attract another company.

discussion of a preliminary version of this paper in November 2013, National Petroleum Authority (ANP) President Gualdino da Silva said '[Timor-Leste] is a proven petroliferous zone. It is also a new frontier; we need more production, we need more discoveries. How could one believe in a conclusion based only on the two production fields? The country is still in an early stage, in its infancy, of researching and discovering more oil and gas. It is too early to reach that conclusion' (ANU 2013). After oil prices crashed in 2014, ANP's Director of Exploration continued to promote a new bidding round: 'We have 85 percent open acreage offshore in [Timor-Leste's undisputed area] and we still [have] more than 65 percent open acreage in the Joint Petroleum Development Area. We haven't any onshore blocks [that have been offered for exploration] ... This is [a] very new frontier' (Rigzone 2015). The Director's comment ignores industry-wide retrenchment and the fact that oil companies already explored or declined all open offshore acreage during more profitable times.

Although anything is possible, the country's small and constrained land and sea area, geological structures, and 120-year history of oil exploration make significant additional reserves unlikely. The first Sunrise test well was drilled in 1974; Kitan is the only commercial field discovered after the flurry of exploration after the 1991 Timor Gap Treaty, and more than a dozen dry test wells have been drilled since the Indonesian occupation ended in 1999. During Timor-Leste's most recent offshore licensing rounds in 2006, no company which had previously explored the area submitted a bid. Since then, about 90% of the contract areas awarded in 2006 turned out not to be commercially viable, and the contract holders have relinquished them (La'o Hamutuk 2014i).

There isn't much time.

Timor-Leste does not have enough oil and gas to sustain the country for very long. If the non-oil economy hasn't developed when the last well runs dry in five years, many more people will join the growing majority struggling to live under the poverty line. When state revenues can no longer cover expenses, Timor-Leste will fall into austerity, with drastic implications for the state and its citizens.

Combined with good planning, Timor-Leste's Petroleum Fund could help support sustainability. Although documents and officials often refer to inter-generational equity, suggestions for more serious efforts to develop alternatives to petroleum (UNDP 2011; Scheiner 2011; La'o Hamutuk 2012; *Petroleum Economist* 2013) were rebuffed (RDTL Spokesperson 2011; RDTL Spokesperson 2013) until recently (RDTL MoF 2013c; RDTL MoF 2013d; RDTL MoF 2014b). Nevertheless, Timor-Leste's government continues to boast about its strong, growing, inclusive economy (Global Insight 2014; Singapore Straits Times 2014), although it is unclear whether policy-makers believe their own advertising. After ANU published a two-page summary of this paper (Scheiner 2014a), the Ministry of Finance responded with an eight-page 'Briefing Note' (RDTL MoF 2014c) narrowly redefining the 'resource curse' and ignoring the main points in the paper.

However, others are beginning to understand the urgency. After years of echoing the government's petroleum-dominated priorities, the World Bank highlighted the need for non-petroleum economic development in its 2013-2017 Country Partnership Strategy (World Bank 2013). When President Taur Matan Ruak promulgated the State Budget in early February 2014, he wrote to Parliament:

'Once again, I am concerned about the excessive dependency of government revenue on the Petroleum Fund. I am absolutely convinced that it is urgent to correct this situation. ... I believe that it is necessary to adopt active policies to diversify economic development...' (RDTL President 2014).

Minutes after being sworn into office in February 2015, Prime Minister Dr Rui Araújo hedged his bets:

'[W]e know that these petroleum reserves are not renewable and, in the worst case scenario, may even run out in the years to come. While on the one hand we are fortunate to still have untapped resources, on the other hand we are one of the countries with the greatest petroleum dependency in the world. As such, we must invest in a responsible and sustainable manner.' (RDTL Prime Minister 2015).

La'o Hamutuk and others in civil society have encouraged a sustainable course for more than a decade (La'o Hamutuk 2002; La'o Hamutuk 2005a; Scheiner 2011; Scheiner 2013; FONGTIL 2013; FONGTIL 2014; La'o Hamutuk 2015). In 2012, we began to estimate Timor-Leste's future state revenues and expenditures based on current trends, external factors and anticipated policy choices (La'o Hamutuk

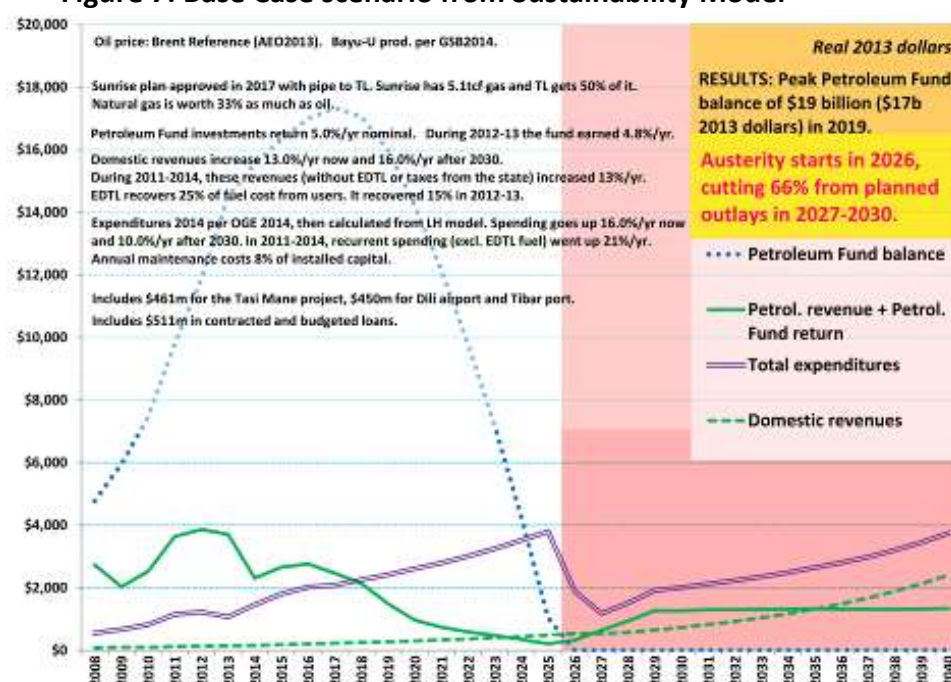
2012; La'o Hamutuk 2012a). The spreadsheet model is online, part of an ongoing effort to encourage evidence-based decision-making (Scheiner 2014).

The model uses an engineering approach, based on causality and Timor-Leste history, rather than correlations with other countries. It does not try to simulate the macro economy and therefore does not estimate GDP, inflation, poverty or trade. Rather, it projects how much the state will receive and spend, based on oil and gas receipts, investment returns, domestic revenues and policy decisions about recurrent spending, megaprojects, borrowing, Sunrise development and other factors.

The model uses data and estimates from a variety of sources, including state budgets and executed expenditures (RDTL MoF 2013; RDTL MoF 2013a; RDTL MoF 2013b; RDTL MoF 2014; RDTL MoF 2014a), population projections (RDTL DGS 2013b), oil price projections (US EIA 2013) and La'o Hamutuk's calculations of oil and gas production and debt repayments based on information from oil companies and lenders.¹³ Detailed description of the model's outputs and suggestions of what should be cut after Timor-Leste runs out of money are beyond the scope of this paper.

Figure shows the model's baseline scenario, which is based on 'best-guess' mid-2014 assumptions of what is likely to happen and is too optimistic for prudent planning. It uses higher oil prices than the Ministry of Finance used to calculate the ESI, and assumes a better return on Petroleum Fund investments than they earned in 2012-2014. The 57% drop in crude oil prices since mid-2014 is not considered here (La'o Hamutuk 2015).

Figure 7: Base Case scenario from Sustainability Model



Source: Scheiner 2014.

With these rosy assumptions, spending exceeds oil and interest income in 2019, and the Petroleum Fund begins to shrink. By 2026, before today's infants finish secondary school, the PF will be used up, and state spending will have to be slashed by two-thirds from desired levels, as shown by the red shaded background.

This scenario assumes that the Greater Sunrise project goes ahead soon with an LNG plant in Beaçu, so that austerity cuts are 'only' 66%. If the companies prevail and they build a floating LNG plant, austerity will be 70%, a little harsher.

In February 2015, Sunrise operator Woodside Petroleum announced that it will 'shelve' the Sunrise project. CEO Peter Coleman told reporters 'We have exhausted all activities. ... it's very difficult [for us] to spend any material amount of money [on Sunrise]. We don't know what the regulatory regime is, we don't know what the fiscal regime is' (West Australian 2015). If the Sunrise project remains stalled, the model shows that Timor-Leste will have to cut 88% after 2025, closing even more schools, clinics, offices and police stations.

¹³ At the time of writing in February 2015, there are no credible long-term oil price predictions, and Timor-Leste's plans and budget are about to be revised due to the changes in leadership and government structure. Therefore, the scenarios in this paper use data and projections from mid-2014, which give more hopeful results than current reality. Updated editions will be posted at <http://www.laohamutuk.org/econ/model/13PFSustainability.htm>.

Changes in other assumptions can bring on bankruptcy and austerity up to three years earlier or seven years later. However, without a dramatic redirection of policy approaches, Timor-Leste's petroleum reserves and petroleum wealth will not be able finance the state for longer than 20 years, even if the country's wishes for Sunrise development, investment returns, and global oil market prices are granted.

Although reducing expenditure and increasing non-oil revenue could delay austerity for a few years, it is inevitable that geometrically growing budgets, increasing population and greater expectations will exhaust the country's finite petroleum wealth. This can only be avoided with a rapid, radical shift of direction toward increasing food production, reducing imports, cutting wasteful spending and cancelling unprofitable megaprojects.

Timor-Leste must fortify its strongest resource – its people – by investing in education, nutrition, health care and rural water and sanitation. It must develop agriculture, the sector which employs most of its people, to meet basic necessities and reduce the need for imports. Timorese people of all economic classes, genders, regions and generations will have to work together to defeat the resource curse by creating an equitable, sustainable economy.

The Timorese people proved their unity and persistence through their difficult, long struggle to achieve political sovereignty over the Indonesian occupation. Achieving economic sovereignty by overcoming the petroleum occupation may be even more difficult. It will require diverse approaches, building on Timor-Leste's strengths and prioritizing medium- and long-term sustainability.

Timor-Leste has about seven years before its remaining petroleum wealth – the only ship which can take the nation away from poverty – will have sailed. If the nation has not built a solid foundation for its non-petroleum economy, the Petroleum Fund safeguards will have failed to avert the resource curse. Sadly, the Petroleum Fund may have been only a delusion of economic security that enabled Timor-Leste's officials, advisors and donors to delay difficult decisions and avoid challenging tasks.

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