After the oil runs dry: Timor-Leste economics and government finances

By Charles Scheiner, La'o Hamutuk, October 2018[1]

Abstract
Timor-Leste has received more than USD $21 billion from oil and gas, but its last producing reserve is nearly gone, and will provide less than $2 billion more. The country has invested two-thirds of this windfall in a Petroleum Fund to finance the government in the future. However, annual oil and gas revenues in 2016-2017 were one-seventh of what they were in 2011-2013. The Petroleum Fund itself is smaller than it was in 2015, and expected investment earnings are less than half of planned withdrawals. If this continues the Fund could be empty by 2028. Although petroleum revenues dominate state finances and the economy, they have not yet been used effectively to prepare for the non-oil era.

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Beginning in hope

Timor-Leste restored its independence in 2002 with great hopes for the future. The illegal Indonesian occupiers had departed, leaving the country in ruins, but international good will and promises of assistance, together with a sense of national unity and the people's commitment to build a democratic, prosperous nation, were reasons for optimism. Furthermore, many expected the oil and gas reserves under the sea between Timor-Leste and Australia to provide billions of dollars to jump-start economic development.

Many Timorese leaders, aware of what happens in mineral-export-dependent countries around the world, hoped to learn from those experiences and avoid the 'resource curse' – the set of negative economic, political and social consequences that afflicts nearly all nations who rely on extractive industries.

On their first day of independence, Timor-Leste ceded more than 10% of its oil and gas reserves to Australia, a confidence-building measure to allow development to proceed. Two years later, they established a sovereign wealth fund called the 'Petroleum Fund' to manage oil and gas revenue sustainably and transparently. The following year, their Petroleum Activities Law established a visible and consistent way to contract with oil companies, intended to avoid corruption and diversion of funds.

The petroleum market gods smiled on Timor-Leste. When independence began in 2002, the price of oil was around US$24/barrel. Capital costs for the oil industry were low, allowing the wells, pipeline and Australian gas liquefaction (LNG) plant which would extract and process oil and gas from the largest field, Bayu-Undan, to be built at reasonable cost. By the time oil production started in late 2005, prices had more than doubled, and when gas production began half a year later, oil was fetching around $70/barrel on the international

[1] An earlier version of this article will be a chapter in the forthcoming *Routledge Handbook of Contemporary Timor-Leste*.

market. Japan, the principal market for Bayu-Undan LNG, was paying around $7 per million BTU, nearly double the price in 2002 (Santos 2018; Y-Charts, 2017).

Bayu-Undan ran at full production for the next eight years, as oil prices continued to rise (interrupted by the global financial crisis in 2008-2009), and for a time it was the most profitable project in ConocoPhillips history. At the peak of production in 2012-2013, world oil prices exceeded $110/barrel, LNG sold for $16/million BTU, and Timor-Leste was receiving more than three billion dollars per year.

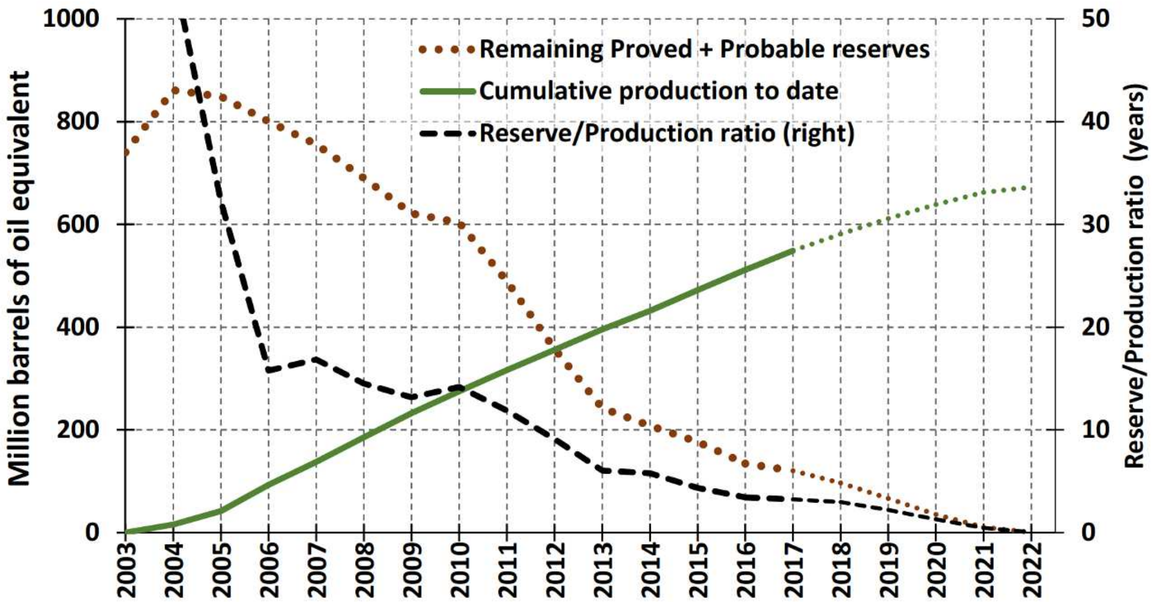

Figure 1. Bayu-Undan reserve and production. (Santos 2018, with author's projections after 2017)

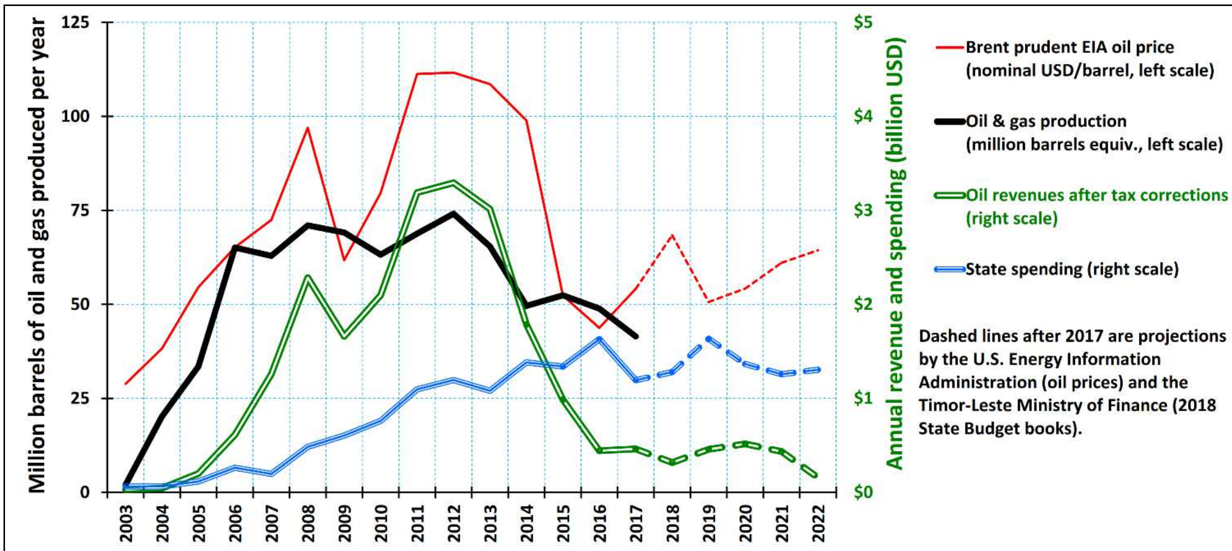

Figure 2. Oil and gas income peaked in 2012 and continues to fall. (EIA 2018, ANPM 2018, CBTL 2018, MoF 2018, MoF 2018a)

By 2016, oil prices were stable again–at less than half of their previous levels, and gas prices had fallen to about $6/million BTU. Timor-Leste produced 44% less oil and gas in 2017 than it did in 2012, and the government expects the last producing field to be dry by 2023. The country is fortunate to have sold most of its petroleum while prices were high.

Between 2002 and 2017, Timor-Leste received US$21.4 billion in revenues from extracting oil and gas. According to government projections, it will receive less than two billion more before Bayu-Undan shuts down. Although Greater Sunrise, Buffalo and possible new fields might provide more revenues after 2022, government budget planning wisely does not include hypothetical income, although some policy-makers continue to be entranced by the mirage of buried treasure waiting to be extracted.

Payments from oil companies are deposited into the Petroleum Fund (PF), invested overseas, and gradually withdrawn to finance the state budget. The Fund was worth $16.9 billion in mid-2018. It has earned $4.7 billion from its investments since its inception, and $9.7 billion has been withdrawn to finance government activities (CBTL 2018). At the time of writing, the balance in the PF is lower than it was in mid-2015, and it could be entirely spent within a decade (La'o Hamutuk 2015d updated).

Saving money in the PF has kept the state solvent thus far, but it is not a long-term solution.

Averting some of the 'Resource Curse'

Paradoxically, people in most countries which depend on exporting non-renewable resources, such as oil or minerals, end up worse off than they would have been if those resources had never existed. In countries as wide-ranging as Venezuela, Congo, the USSR, Iraq, Nigeria, Mongolia, Ecuador, Sudan, Myanmar and Libya, the wealth from exporting mineral capital has brought poverty, war, environmental damage, corruption and economic stagnation. Although a few individuals and international companies benefit from extractive activities, local people have to live with the destructive consequences.

Economists, political scientists, accountants and psychologists describe this 'curse' differently. This chapter uses the term to encompass a variety of negative political and economic impacts which occur when exporting natural wealth, such as oil and gas reserves, dominates a country's economy and state revenues.

Timor-Leste started to export oil after other countries had suffered from their resource dependency. Leaders and international advisors learned from those experiences and set up mechanisms to manage the oil industry and its revenue in a more transparent, streamlined and sustainable manner than most. Although these ameliorated or postponed some of the most devastating consequences of the 'paradox of plenty,' especially those due to deliberate malfeasance, they have not prevented the effects of well-intentioned but short-sighted decisions which may lead to long-term damage.

Failing to diversify the economy

Since oil and gas money comes in with little effort (and, in Timor-Leste, from out-of-sight offshore projects), it substitutes for economic activity that requires more planning and harder work. Even though the petroleum industry provides few jobs, its revenues allow the state to employ people, pay pensions, purchase imports and subsidize nonviable businesses, giving the appearance of economic growth. Although such spending builds support for populist politicians in the short term, it is not sustainable.

When the petroleum sector dominates the economy, it attracts the most ambitious, creative and articulate policy-makers, who persuade top leaders to spend millions on concept studies and proposals to develop their sector. They then leverage those proposals to multi-billion-dollar infrastructure projects, such as Tasi Mane, without serious cost-benefit analysis. Less glamorous sectors, such as agriculture, tourism, small industries and food processing, become lost 'opportunity costs' due to the tilted playing field.

As the Eighth Constitutional Government consolidated in the second half of 2018, it accelerated work on extractive industries (buying into Greater Sunrise oil and gas, promoting the Tasi Mane project, onshore seismic exploration for possible petroleum fields and promoting mining activities, for example) claiming that these would "diversify the economy."[2] However, budgetary allocations and public debate continue to prioritize petroleum development.

Ignoring the inevitable exhaustion of non-renewable wealth

As long as oil and gas continues to finance the state, there is no incentive to acknowledge that it will not last forever. In a democracy, leaders rarely plan beyond the next election. Pessimism is not an effective campaign strategy, and unelected candidates are powerless to address pending problems. As long as the Petroleum Fund remains solvent, politicians can avoid hard decisions to prepare for its inevitable bankruptcy.

One example of the lack of serious planning is the often-cited *National Strategic Development Plan 2011-2030*, which has no costing or schedules. More a wish-list than a serious plan, many of its components may not provide reasonable social or financial return on their investment (RDTL 2011).

Policies are based on unsubstantiated dreams that more oil and gas will be discovered in the country's small territory or that eventual development of the Greater Sunrise field will make the country rich. In a minimalist gesture toward diversification, some policy-makers look to mining, but Timor-Leste's limited mineral wealth will never provide as much money as petroleum has already.

Spending without thinking

When money comes in easily, it can go out without much thought. It is easier for the state to award contracts to foreign companies than to develop local contractors, to pay for scholarships at overseas universities than to build a solid educational system; to send important people abroad for health care than to improve the quality of hospitals and clinics.

From 2006 to 2012, Timor-Leste's state spending increased five-fold, the second fastest in the world (World Bank 2018).[3] This escalation has slowed somewhat, but spending in 2016 was still 36% higher than in 2012.

Between the national elections in 2017 and 2018, Timor-Leste failed to enact a state budget. The 2018 budget, hastily submitted by the new government eight months after the year had begun, appropriated less than previous budgets did. However, it may not indicate a change in direction, as many projects which are included in the plans and program of the new government were left out of the 2018 budget (MoF 2018).[4]

In order to avoid depleting the Petroleum Fund even faster, Timor-Leste is financing some large infrastructure projects by borrowing money which it will have to repay with interest. Although the government had spent only \$109 million from loans (from the World Bank, Asian Development Bank, and Japan) to the end of 2017, it had planned to borrow more than a billion dollars in the next three years.[5] If all the loans anticipated in the 2017 budget are taken out, the state will be obligated to repay more than \$100 million each year (more than it spends on health care) between 2026 and 2037, and, if no oil money remains, the money will have to come from cuts in public services (La'o Hamutuk 2016h).

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[2] The words "economic diversification" or "diversify the economy" appear 32 times in the new Government's Program (RDTL 2018).

[3] Only Zimbabwe, afflicted with triple-digit inflation, accelerated spending more quickly.

[4] The 2018 budget also anticipates higher oil revenues in coming years, due to changes in forecasting methodology, and its projections do not comply with the "prudent" spirit of the Petroleum Fund Law.

[5] The delayed budget for 2018 reduced loan forecasts, but borrowing could be larger in the future if intended projects are built.

Although some ‘front-loading’ of expenditures on physical infrastructure can be justified to bootstrap future economic development, more careful analysis is required to identify which projects will bring benefits greater than their costs and risks. Large public investments in petroleum infrastructure, airports, highways and container ports are unlikely to produce comparable long-term benefits, especially while human and rural infrastructure (education, health care, village roads, water and sanitation) remain underserved (GDS 2018d).

Macroeconomics

In addition to running large trade deficits (see below), economies dominated by resource exports often experience inflation because the amount of money circulating is larger than the supply of goods, driving prices up. As raw materials get more expensive in Timor-Leste, it is harder for local industries to compete with those in other countries. Although Timor-Leste suffered double-digit annual inflation in 2011-2013 due to rapidly rising state spending, price increases have moderated since then. Because Timor-Leste has few industries which rely on imported inputs, inflation hit consumers harder than it hit businesses. In recent years, the U.S. dollar (Timor-Leste’s official currency) has risen rapidly compared with the currencies which importers use to purchase goods, and therefore inflation has been low since 2014 (GDS 2018a).[6]

Violence and crime

Timor-Leste has already survived the most obviously devastating consequences of resource wealth – foreign invasion and armed conflict. Although greed for oil and gas was a motivation for Indonesia to invade the country in 1975,[7] that war is over, and Timor-Leste’s leaders and citizens are deeply aware that the damage from renewing conflict would be much greater than its spoils. Petroleum was significant in Timor-Leste’s intermittently argumentative diplomacy with Australia, but the 2018 Boundary Treaty resolved the principal issue of national sovereignty, although some petroleum-related questions remain to be decided.

Petroleum does not dominate the country’s foreign policy. Furthermore, enough oil wealth has been distributed within the country to avoid insurrection, and the remaining reserves are too small to attract potential invaders.

The country has also apparently succeeded in avoiding widespread misappropriation of public funds for private gain. Thanks to transparent systems to manage petroleum revenues and contracts, very little money has been siphoned off to private bank accounts. Although the Anti-Corruption Commission, Transparency Portal,[8] procurement processes and judicial system all have room for improvement, they have not yet seen massive diversions of government funds; every known case has been less than $4 million, about what the state spends in one day.

If there have been larger thefts connected with procurement or infrastructure projects, they have not yet come to light, although Timor-Leste pays far more for such projects than neighbouring countries do. However, the allocation of a disproportionate share of public funds to key constituencies (such as politicians, veterans, those working in the petroleum sector), has generated a growing popular backlash against, for example, the lifetime pensions which former office-holders receive as soon as they leave their positions.

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6 A dollar in 2015 was worth 14,000 Indonesian rupiah, 65% more than in 2011.

7 Australian government documents verify that the desire for petroleum reserves was a significant factor in Australia’s support for Indonesia’s invasion (McGrath 2017).

8 Timor-Leste’s government posts data on income, revenues and contracting to http://www.transparency.gov.tl/english.html, but it is not always accessible or up to date (MoF 2018a, MoF 2018b).

Postponing the inevitable

In the early 2000s, one of the most often prescribed immunizations for the 'resource curse' was to manage oil revenues transparently, simply, and with an eye toward the future. Recognizing that there is no logical connection between the amount of petroleum revenue a government receives during a given year (which fluctuates with project cycles, global market prices and production rates) and how much money a state needs to spend, the World Bank and others encouraged Timor-Leste to establish a sovereign wealth fund (the Petroleum Fund, PF) which would decouple current oil revenues from state expenditures (see Figure 4). The PF is invested outside Timor-Leste, primarily in bonds and stocks, and its earnings were expected to support state spending after the oil and gas was exhausted (La'o Hamutuk 2005).

Timor-Leste established this system in 2005, after extensive public consultation and before significant oil and gas money started to come in. At the time, the nation was a world leader in the responsible management of oil revenues, and the Petroleum Fund Law and Petroleum Activities Law (which defined how Timor-Leste would contract with oil companies) required significantly more transparency than the global Extractive Industries Transparency Initiative (EITI), which was being developed simultaneously. In 2010, Timor-Leste became the third country in the world certified as EITI-compliant. However, the annual EITI reports take 2-3 years to prepare, by which time much of the data they include has already been published by the Central Bank (CBTL, which manages the PF), the Ministry of Finance, and/or the National Petroleum and Minerals Authority (ANPM) (La'o Hamutuk 2005a, La'o Hamutuk 2018f, ANPM 2018, CBTL 2018). In 2011, Timor-Leste revised the PF law to allow investments with more risk and to make it easier to withdraw unsustainable amounts. Nevertheless, the basic structure remains intact, even as the PF shrinks.

The Petroleum Fund Law specifies that all income from oil and gas activities must be deposited into the PF, and each state budget withdraws enough to cover the 'non-oil deficit' between appropriated expenditure and non-oil revenues. A formula specifies the recommended maximum annual withdrawal – the 'Estimated Sustainable Income' (ESI) – based on expected future oil revenues and investment return. However, the ESI has gradually been downgraded from a rule to a benchmark to a guideline, and is largely ineffective. Governments have withdrawn more than the ESI in every year since 2009 (except for 2013, when unspent excess withdrawals the previous year were carried over). Budgets since 2015 have withdrawn double the ESI.

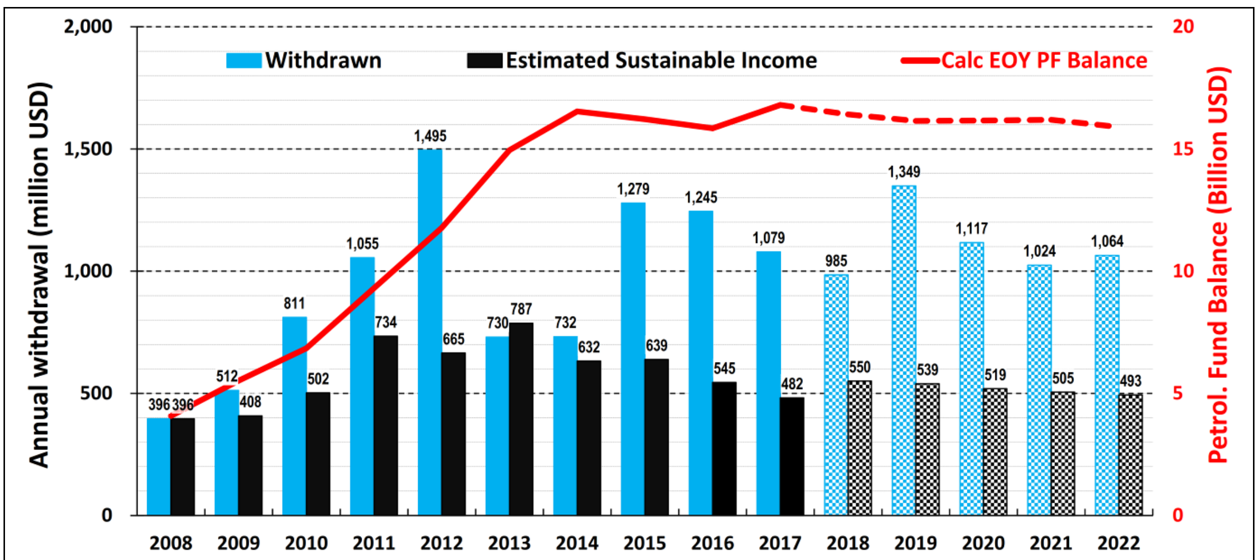


Figure 3. Historic and planned withdrawals from the Petroleum Fund. (MoF 2018)

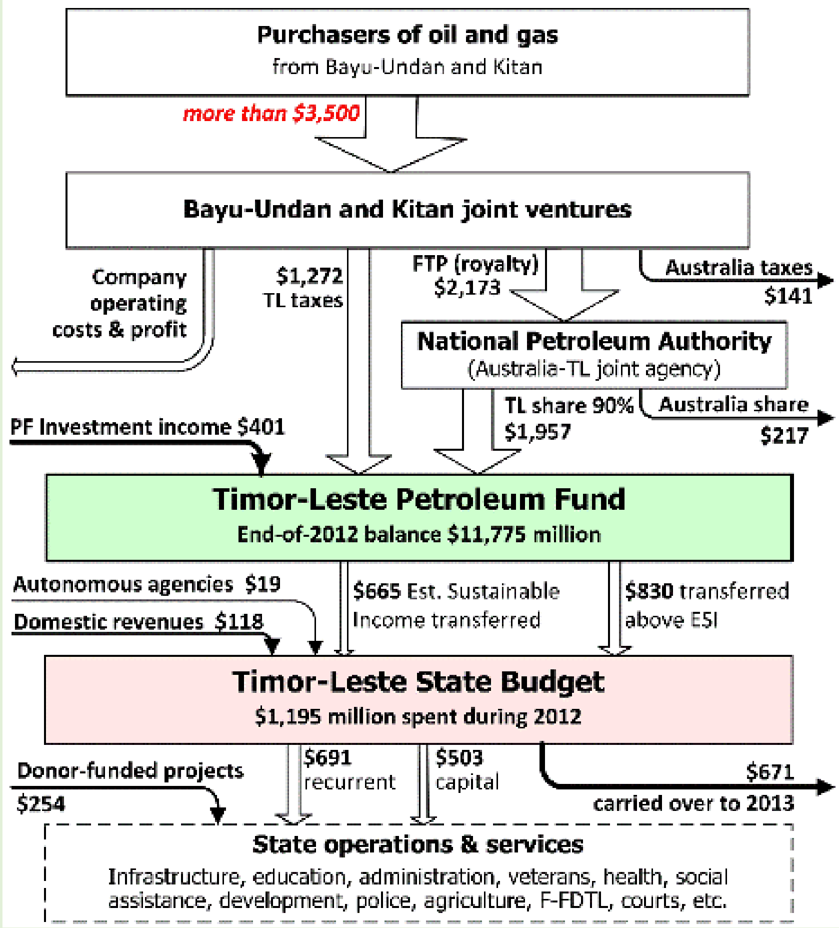
Figure 4. Timor-Leste's petroleum revenue flow in 2012.

Here's how money (in millions of U.S. dollars) moved in and out of the Petroleum Fund during 2012, when oil revenues were at their peak.

ConocoPhillips, Eni and their partners in the Bayu-Undan and Kitan projects extract, process and sell oil and gas. After repaying investment costs and deducting operating costs, capital expenditures and profit, the remainder is divided 90% to Timor-Leste and 10% to Australia. Timor-Leste's share is deposited into the Petroleum Fund (Santos 2016, CBTL 2018, MoF 2012).

The annual State Budget withdraws money from the PF which, together with other revenues, is spent to pay for state activities.

Although petroleum revenues have declined significantly (in 2017 Timor-Leste received $422 million, one-eighth of what it got in 2012), state spending has not.



In addition to revenues from the oil companies, the Petroleum Fund's investments earn interest and dividends, which were intended to replenish the PF after oil extraction ends. Before 2012, nearly all of the PF was in U.S. and other government bonds; it was the only sovereign wealth fund in the world which did not drop in value during the 2008 global financial crisis. However, 40% is now invested in international stocks (equities), and returns go up and down with the optimism of stock traders. Until 2018, the Ministry of Finance expected that the nominal (before adjusting for inflation) annual return on PF investments would be 5.7%, but it has rarely earned that much and the Ministry lowered the benchmark to 3.9%.

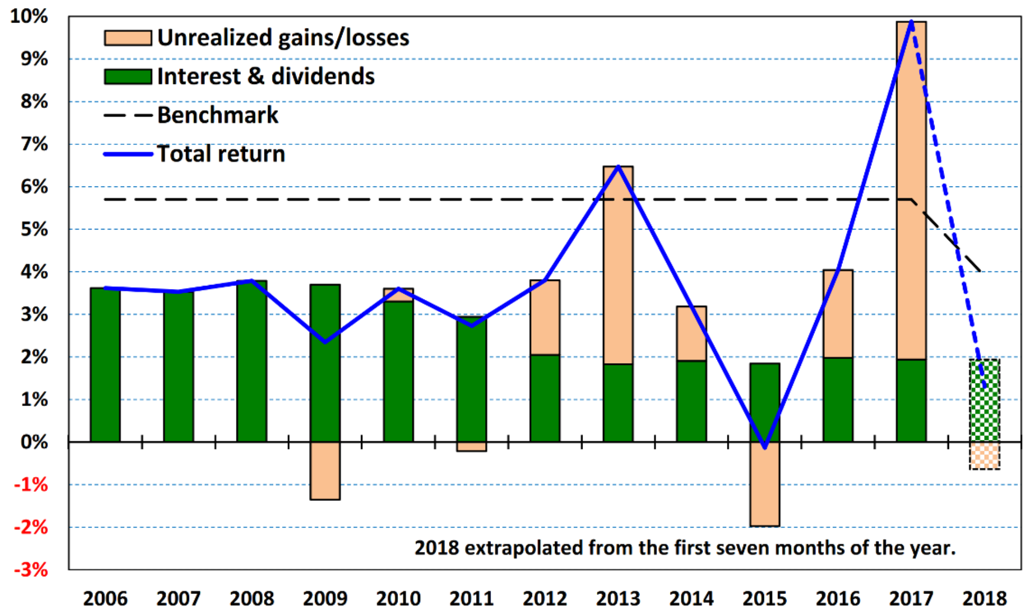


Figure 5. Nominal annual return on Petroleum Fund investments. (CBTL 2018).

Investment returns were negative in 2015. Two years later, the PF earned a record $1,612 million, although four-fifths of that is unrealized and could vanish if the stock market falls or the U.S. dollar rises. The Ministry of Finance predicts that PF earnings will be around $620 million/year over the next few years. As planned state spending is more than double that amount and other revenues will be less than $230 million/year, the balance in the Petroleum Fund will continue to drop. La'o Hamutuk estimates that if the government implements all the projects it has announced, the PF could be entirely spent by 2028 (La'o Hamutuk 2015b, 2015c, 2015d, with updated analysis).

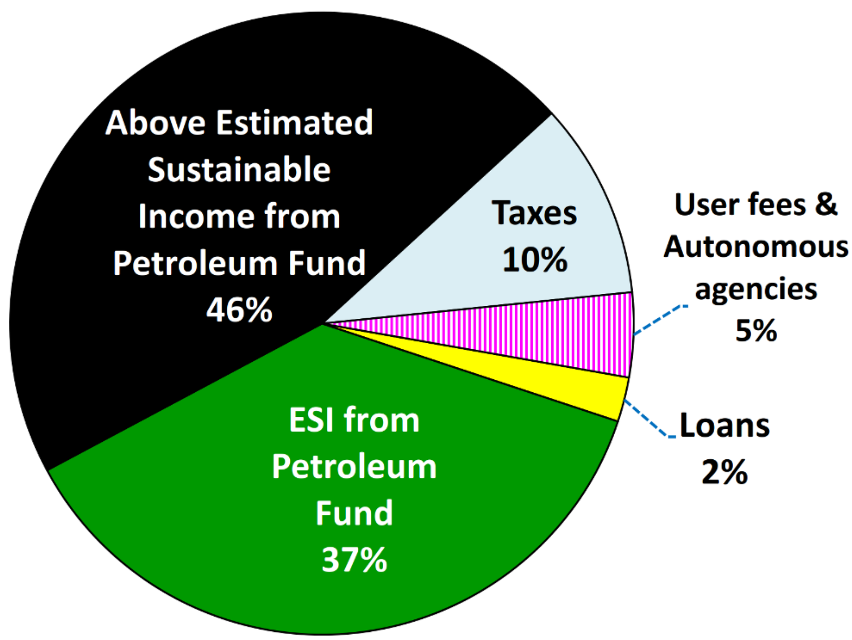


Figure 6. Sources of state revenue during 2017: $1,299 million total. (MoF 2018)

It will be a difficult transition. In 2017, the Petroleum Fund paid for 83% of state spending, which is not sustainable. The Ministry of Finance does not envision an alternative, but expects the PF to pay for 82% of the budget until 2022, the last year they project (MoF 2018).

Although Timor-Leste may have protected itself against billion-dollar-scale corruption, this cash-rich government with limited experience and safeguards is an inviting target for scammers and thieves. One who succumbed to temptation was Bobby Boye, a petroleum tax advisor hired by Norway and the Ministry of Finance. Boye claimed that oil companies had short-changed Timor-Leste by billions of dollars, and the Ministry billed them for more than $300 million in arrears. The companies paid to avoid escalating penalties and appealed the assessments (La'o Hamutuk 2018d).

Boye, riding high, convinced Ministry officials to contract with the U.S. law firm Opus & Best to revise the petroleum tax laws, paying them $3.5 million. But Opus & Best was a fake company consisting only of Bobby Boye, who was charged with wire fraud in U.S. court. In 2015, Boye pled guilty and was sentenced to six years in prison, although he continues to protest his sentence from behind bars. No Timor-Leste officials have been charged in relation to his scheme (La'o Hamutuk 2018b).

In 2016, Timor-Leste and the oil companies settled the back tax disputes, and the companies began deducting unjustified prior assessments from ongoing tax payments. Although the total amount returned has not been made public, it is around $275 million. As Figure 7 shows, this debacle increased petroleum revenues while they were at their peak, and made them fall even faster as they decline.

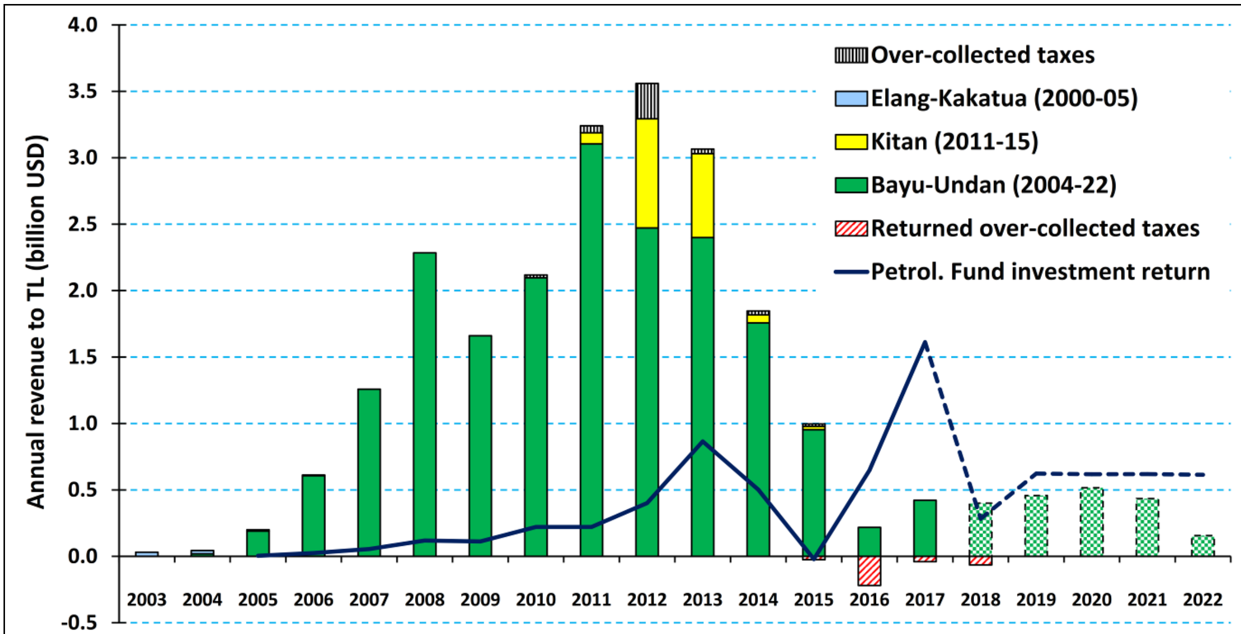


Figure 7. Where the Petroleum Fund gets its money. Projections after 2017 are by the Ministry of Finance. (CBTL 2018; ANPM 2018; MoF 2018; La'o Hamutuk 2018d)

Timor-Leste has received the great majority of the income it will get from the three oil and gas fields which have been developed, and will have to depend on other revenues, including Petroleum Fund investment returns, in the future.

Will more oil wealth be recovered?

Like most addicts, Timor-Leste will need another fix to feed its habit after Bayu-Undan is used up. The only large confirmed gas and oil reserve is Greater Sunrise. Discovered in 1974, Greater Sunrise has been the main subject of a prolonged, bitter dispute with Australia that was mostly resolved with the signing of a Maritime

Boundary Treaty in March 2018. However, Sunrise development is still stalled because Timor-Leste's government wants to liquefy its natural gas in Timor-Leste, while the oil companies say that it is more lucrative to process it in Australia.

After both governments and the Sunrise Joint Venture agree on the development methodology, Timor-Leste will receive 70-80% of the government 'upstream' revenues from extracting Sunrise gas and oil, which some hope will bring in $40 billion to the state (Strating 2017), but this seems overly optimistic. Increased development costs and lower world gas prices are likely to reduce the government take, perhaps to less than $10 billion. In any event, such revenues are probably at least a decade away, and if Timor-Leste subsidizes onshore gas processing through the Tasi Mane Project, there may not be much money to pay for other state activities (La'o Hamutuk 2016e, 2018c).

Timor-Leste's petroleum officials, including the National Petroleum and Mineral Authority (ANPM) and the TimorGAP state-owned oil company, fervently believe that Timor-Leste's land and seas, a "proven petroliferous zone," contain undiscovered oil and gas fields (da Silva 2016, Monteiro 2016). However, the most geologically promising parts of Timor-Leste's maritime territory have been explored for decades, and most of the areas which are now 'vacant' (see Figure 8) were relinquished by former contract-holders who found nothing worth extracting. Kitan is the only commercial discovery since 1995, when Bayu-Undan was found. Timor-Leste's last bidding round for new contracts was in 2006; the next one has been repeatedly postponed during the last six years (Rigzone 2015, Scheiner 2017).

The only contracts awarded in the last 12 years have been no-bid 'direct awards' to TimorGAP without an open process: JPDA 11-106, TLEA S0-15-01, and the first on-shore contracts since the Portuguese era, TL OT-17-08 and TL OT-17-09. TimorGAP and its partners have not found any commercially exploitable fields in these areas, although prospecting continues (La'o Hamutuk 2018e, Scheiner 2017).

Under the 2018 Boundary Treaty, Timor-Leste will receive all of the remaining upstream revenues from Bayu-Undan, of which 10% had previously gone to Australia. It will also receive revenues from the formerly shut-down Buffalo oil field, previously considered in Australian territory. However, additional revenues from these two fields will total less than $2 billion, barely enough to cover one year's State Budget.

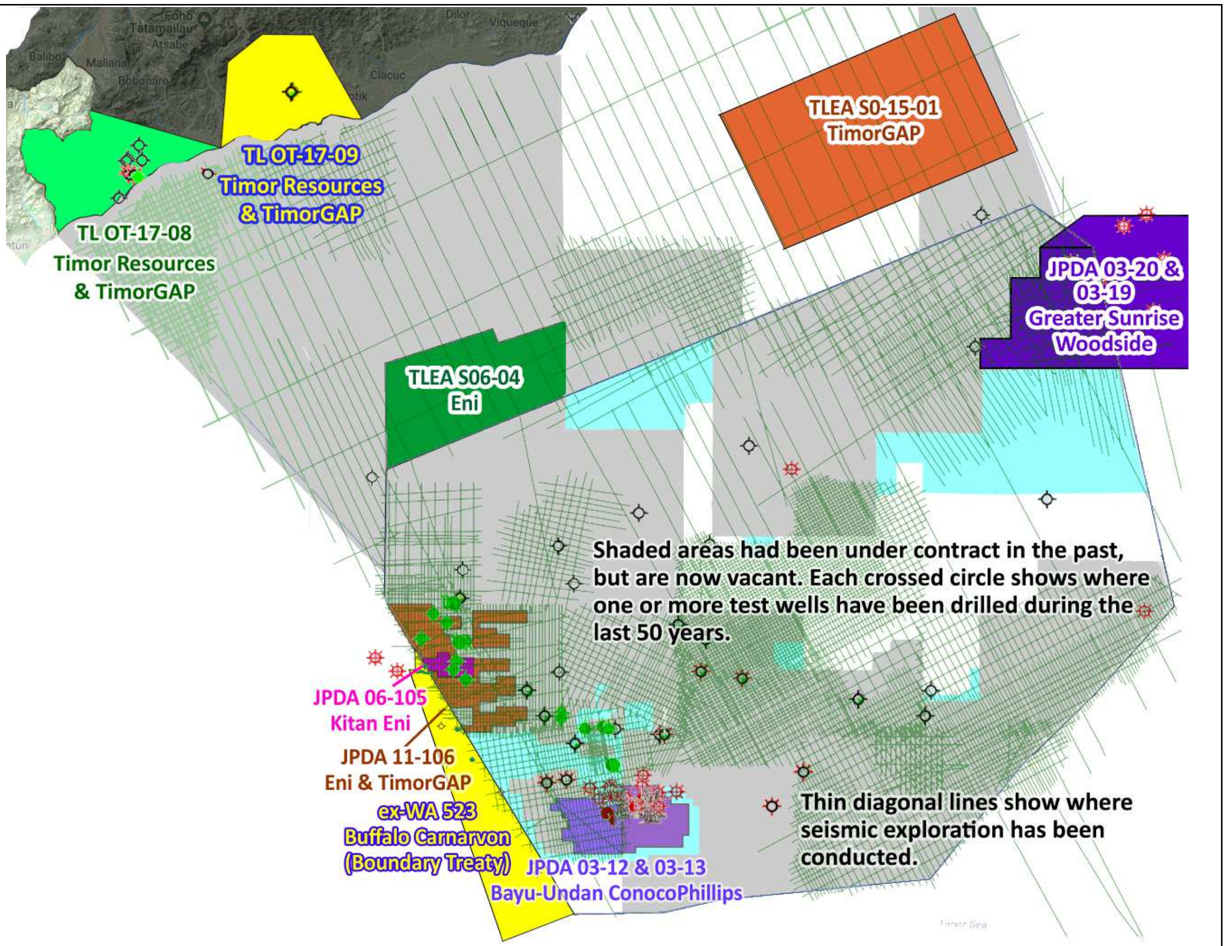


Figure 8. Timor-Leste areas currently or formerly under oil exploration contracts. (ANPM 2018a, La'o Hamutuk 2006, La'o Hamutuk 2018e)

One consequence of the 'resource curse' – as well as of internalized colonialism and dependence on foreign assistance from 2000 through 2005 – is to hope for 'manna from heaven,' a kind of cargo cult (Bovensiepen, 2016). As promises of future oil revenues become less credible, some expect mining to underwrite the state. In 2016, the National Petroleum Authority became the National Petroleum and Minerals Authority, Parliament began debating a mining code, the government started to establish a national mining company, and Timor-Leste agreed to subsidize a project to mine limestone and export cement. Although the most promising mineral deposits in the country are likely to be sand, gravel, limestone and marble, some believe that valuable metals or gems are waiting to be discovered. Timor-Leste has limited capacity and will to protect its environment and local communities, and onshore mining could bring a new set of negative impacts. In any event, it can never be as lucrative as oil and gas has been (La'o Hamutuk 2007g).

How the state spends its money

Timor-Leste has finite resource wealth and limited sources of revenue, so it needs to maximize value for money. Wise budget allocations can improve people's quality of life today while building for the future by investing in human resources and appropriate physical infrastructure. However, in recent years, nearly half of public spending has been on large construction projects, many of which may have few lasting benefits (La'o Hamutuk 2015a).

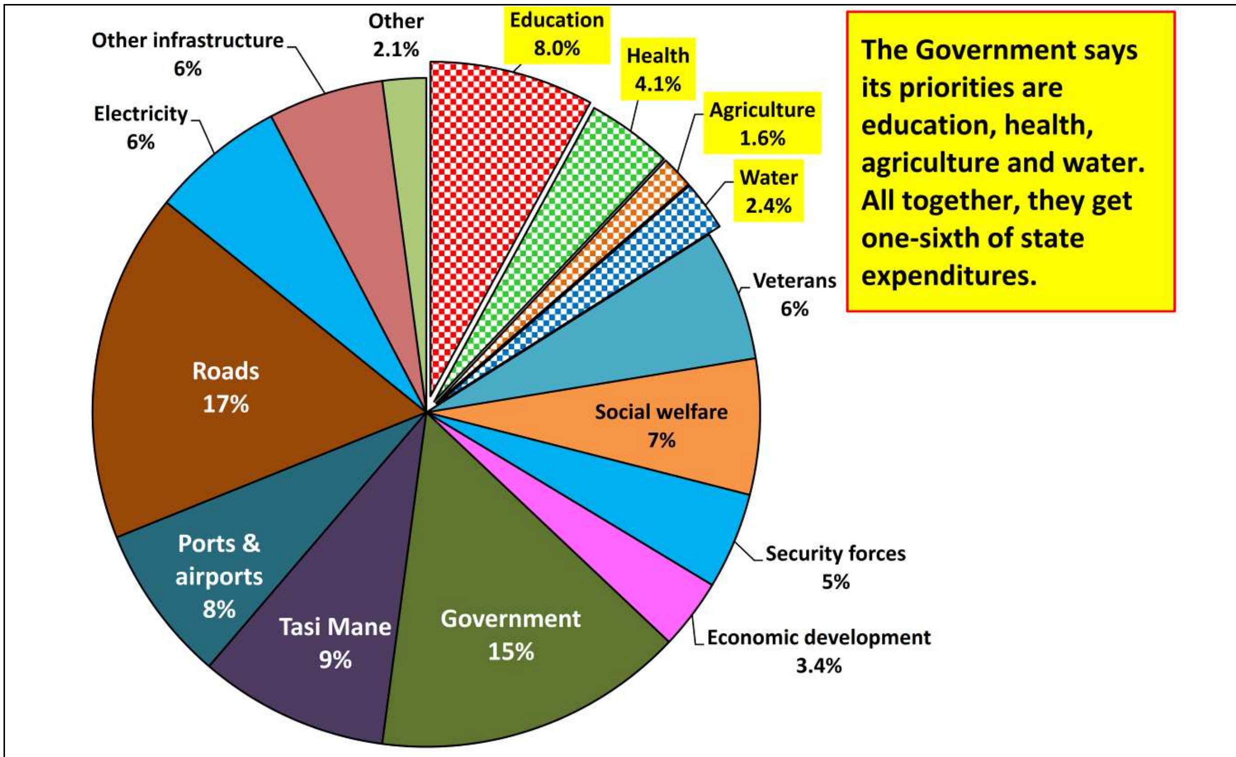


Figure 9. Budget appropriations in 2016 and 2017. (MoF 2016, MoF 2017)

Timor-Leste uses standard budgeting categories and appropriated these amounts for 2018:

- Salaries and wages ($200 million): Public employee (but not consultants and advisors) salaries, overtime and benefits.
- Goods and services ($422m): Materials and services (consultants, maintenance, travel, etc.) usually purchased by tender and contract. The largest components are professional services, operational expenses, and generator fuel. This includes $65 million to reimburse over-collected oil revenues.
- Minor capital ($4m): Equipment, such as vehicles, computers or furniture.
- Development capital ($392m): Construction of infrastructure, such as roads, buildings, ports and airports.
- Public transfers ($267 million): Disbursements to individuals (pensions or social assistance) and to institutions (special economic zone in Oecusse and petroleum agencies).

shows how revenues and expenditures by category have shifted since independence was restored in 2002. Development capital spending was high in 2011, 2012 and 2014 for electricity infrastructure, and in 2016 for roads, Tibar port and Suai airport.

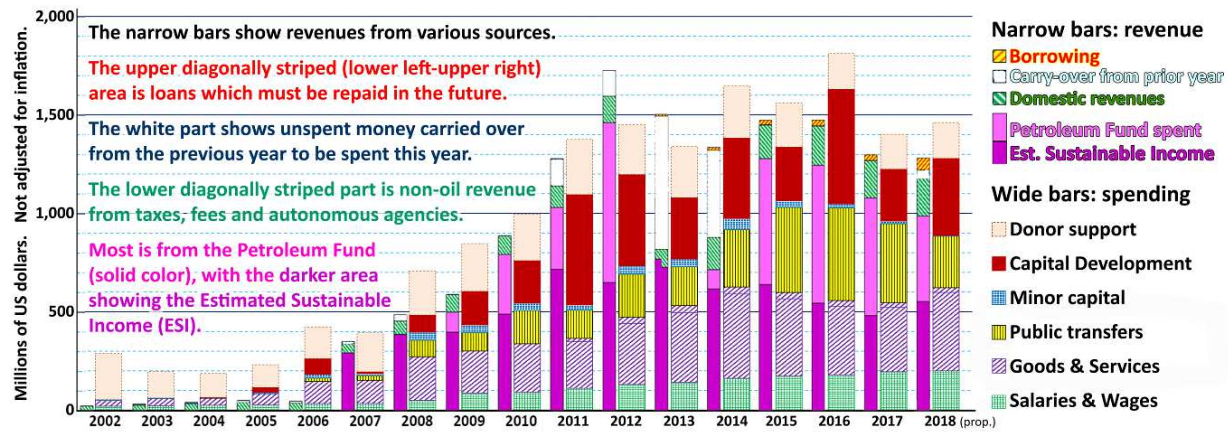
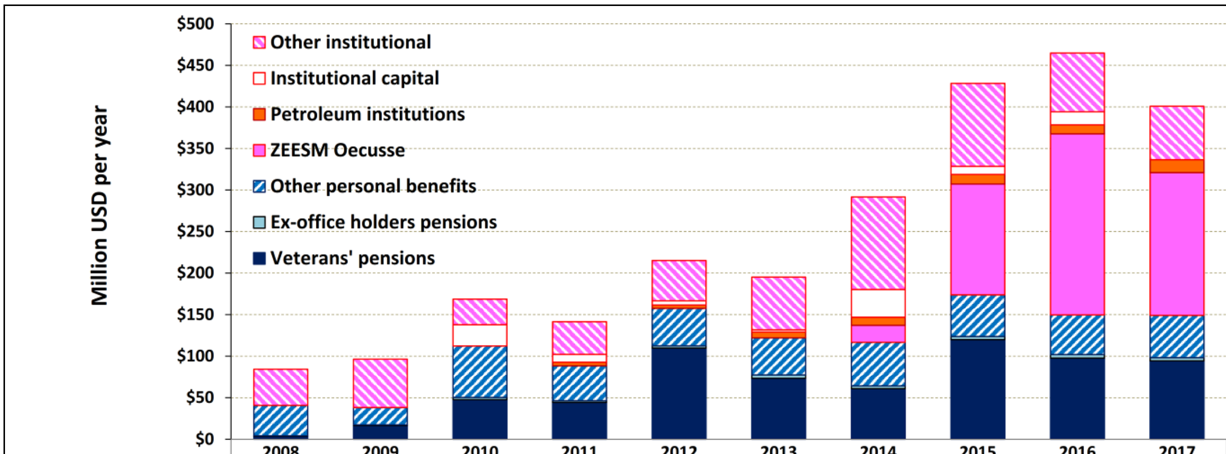


Figure 10. State revenues and spending 2002-2018. (MoF 2015, 2016, 2017, 2017a, 2018)

Public transfers were the largest budget category in 2017, receiving 33% of all spending. Some were paid to individuals (veterans, elderly, widows, pension recipients, disaster victims), but most went to state agencies (ZEESM, petroleum agencies, local government, etc.) which are outside the transparency requirements applied to other state spending. During 2014-2017, the government transferred a billion dollars to such agencies, more than fifty times as much as they generated in revenue. However, in 2018 the new government sharply reduced ZEESM transfers (forcing it to spend money retained from past transfers) and says ZEESM will return to normal budgetary mechanisms.

Finance Ministry reports do not show when or if the transferred money has been expended, or what it was used for. If the money is not spent by the end of the fiscal year, it remains in the recipient's bank account. Some agencies, including TimorGAP and the National Petroleum and Minerals Authority, publish financial reports (often showing retained earnings), but others, including the ZEESM Authority, do not reveal how much they have kept (MoF 2017a, TimorGAP 2018, ANPM 2017).



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Other institutional	$43	$58	$31	$39	$48	$63	$111	$100	$71	$64
Institutional capital	$0	$0	$26	$9	$5	$3	$33	$10	$16	$0
Petroleum institutions				$4	$4	$7	$10	$11	$11	$16
ZEESM Oecusse							$21	$133	$218	$172
Other personal benefits	$37	$21	$62	$42	$45	$45	$52	$50	$48	$51
Ex-office holders pensions	$1	$1	$3	$2	$3	$4	$3	$4	$4	$4
Veterans' pensions	$4	$17	$48	$44	$110	$73	$61	$120	$98	$94

Figure 11. Spending on public transfers. (MoF 2018, MoF 2017, TimorGAP 2018, ANPM 2016).

Actual spending failed to keep up with the rapid growth in appropriations in 2012-2013, when several capital projects were delayed (see Figure 12). Since 2014, planning and budgeting have improved, and overall budget execution rates are now around 81% for capital and 92% for recurrent spending.[9] Between 2009 and 2014, recurrent spending rose about 17% each year, but it has since stabilized due to lower fuel costs, budget cuts and more efficient management.

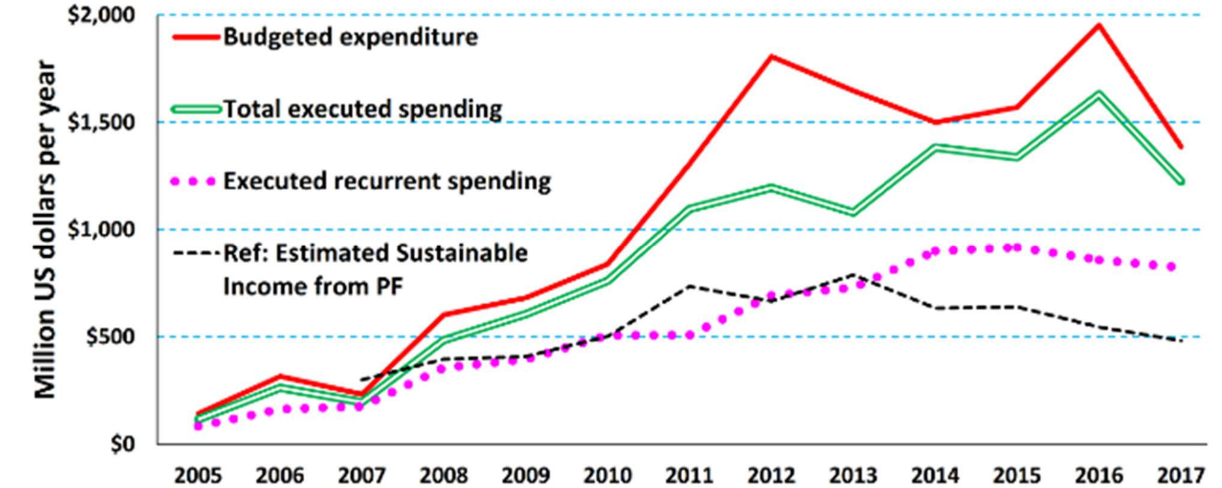


Figure 12. Annual budgeted and executed spending. (MoF 2015, 2016, 2017, 2018, 2018a)

Although the ESI rule for Petroleum Fund withdrawals was originally intended to apply to the entire budget, a revisionist approach to preserving the PF would allow withdrawals above the ESI to 'front-load' capital investment, while keeping recurrent spending below ESI to improve sustainability. However, executed recurrent spending overtook ESI in 2014 and continues to greatly exceed it.

[9] Recurrent spending includes salaries, goods and services, and public transfers except for the portion used for infrastructure construction by the ZEESM authority.

Timor-Leste is still grappling with financial management. Spending starts slowly each year, as procedures for the new budget and programs are put into place. In a normal year, spending is relatively steady from April through October, but disbursements soar toward the end of the fiscal year, especially for goods and services, minor capital and development capital, as a spend-it-or-lose it mind-set prevails.[10] Other peaks in this graph represent power plant purchases, veterans' payments and lump-sum transfers to the ZEESM Oecusse Economic Zone.

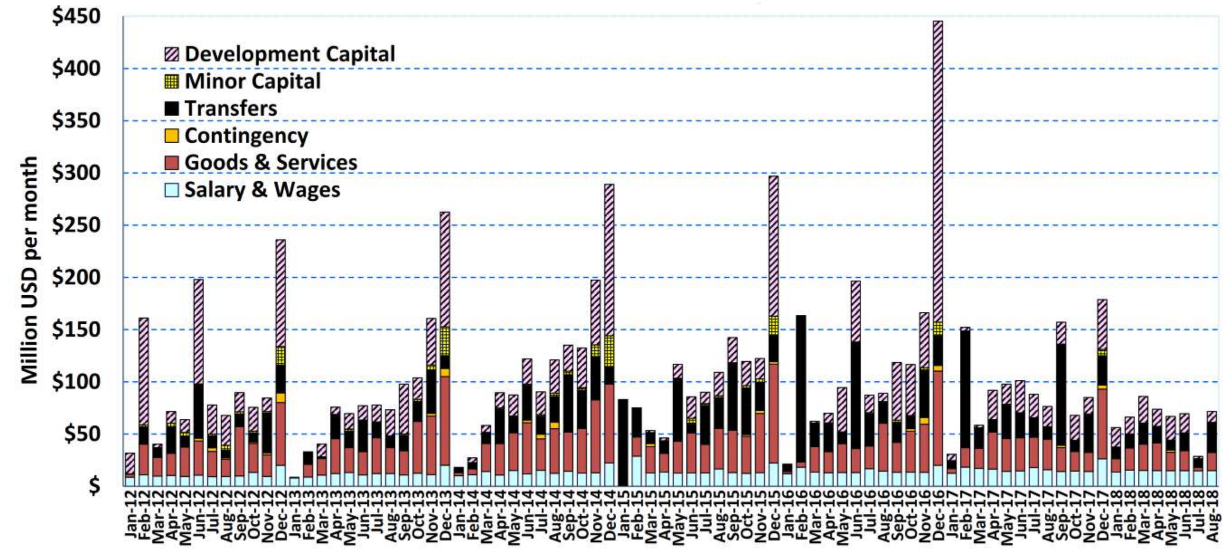


Figure 13. Monthly budget execution by category (MoF 2018a).

No 2018 state budget was enacted in 2017, so the Seventh Government (which served from September 2017 until June 2018) reduced or deferred spending. The Eighth Government then weathered a cash-flow 'crisis' until Parliament approved an extraordinary $140 million transfer from the Petroleum Fund in August 2018. The difficulties stemming from this temporary inability to spend petroleum wealth are an omen of the less tractable absence of money when the Petroleum Fund no longer exists, but few political leaders acknowledged this, perhaps because it will not happen until the mandate of the Ninth or Tenth Government.

As shown in Figure 9 above, physical infrastructure receives the largest share of the budget. However, the sectors most essential to developing human infrastructure – education and health care – remain severely short-changed. Only 8% of Timor-Leste's 2018 budget is allocated to education, half of the 16% average for Least Developed Countries (World Bank 2018). Timor-Leste spent less than 6% of its budget on health; the global average is 10% (WHO 2018a).

After the long, brutal occupation ended in 1999, Timor-Leste's population grew more than 3% per year, faster than any other country. Although the rate has dropped to 2.1%, the majority of the population is under 20 years old (GDS 2017a). This post-war 'baby boom' strains the education system today and will dominate the job market in coming years. It will reverberate with another surge when boomers have children. Unfortunately, Timor-Leste's appropriations for education and health are lower than they were four years ago, and inadequate education and nutrition can permanently damage people's lives and livelihoods.

10 Although a few autonomous agencies and special funds can roll over money received in a given year, ministries and most government entities cannot. Salary outlays are doubled in December because workers get a '13th month' bonus payment.

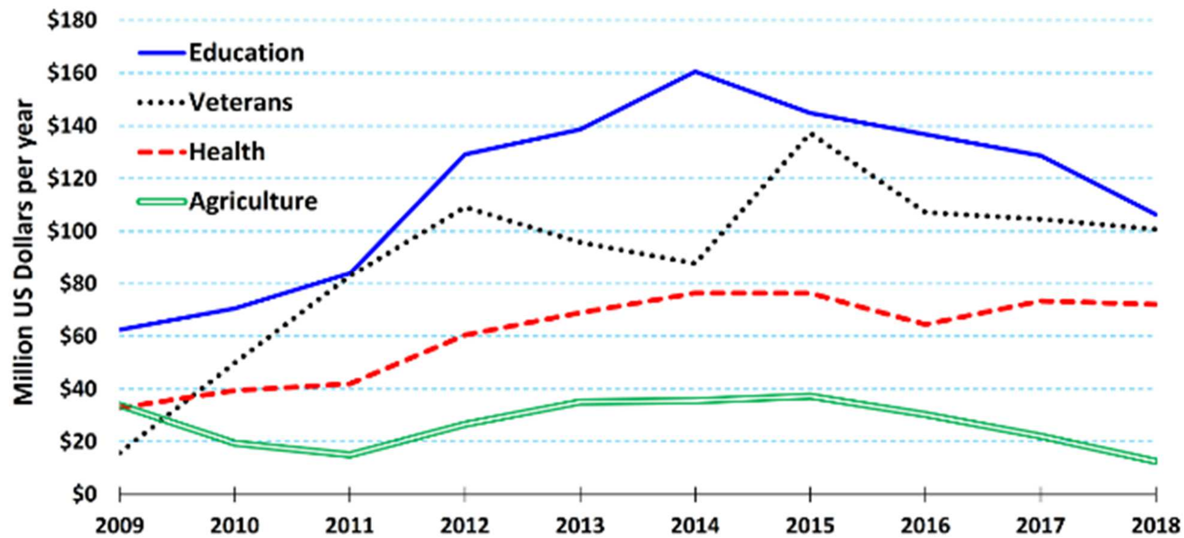


Figure 14. Appropriations for education, health, agriculture and veterans. (MoF 2015, 2016, 2017, 2018)

Agriculture provides most people's livelihoods, but inefficient practice and difficulty of accessing markets make it challenging for farmers to feed and sustain their families. Nevertheless, government support for this sector is very small, having steadily declined since 2015, reflecting a Dili-centric bias against subsistence farming and rural life. Although the agriculture sector employs a hundred times as many people as the petroleum sector, it now gets about one-tenth as much public funding.

The Tasi Mane petroleum infrastructure project on the south coast includes a supply base for offshore oil operations, an oil refinery, an LNG plant, onshore oil and offshore gas pipelines, two airports, two seaports and a 156-km highway. Although $325 million had been spent on this project by August 2018, the author estimates that 90% of its capital costs have never been mentioned in budget documents, and no outside investors have publicly expressed interest. The following table includes the main components, in millions of U.S. dollars:

Component	Location	Status	Spent through 2017	Budgeted 2018-2023	Estimated total capital cost	Percent budgeted
Airport	Suai	Constructed	65	22	90	96%
Supply base	Suai	Tender pending	5	747	850	88%
Highway	Suai-Beaçu	1/5 built	173	137	1,700	18%
Airport	Viqueque	Not started	0	0	60	0%
Oil refinery & pipelines	Betano	Pending design	3	0	1,500	0%
Gas pipeline, LNG plant & port	Sunrise-Beaçu	Pending OK from companies & Australia	12	0	6,000	0%
30% ownership of Sunrise PSC	Offshore	Pending OK from companies & Australia	0	0	350	0%
30% of Sunrise capital investment	Offshore	If ownership approved	0	0	1,800	0%
Administrative and other costs			37	2	300	13%
TOTAL			**295**	**908**	**12,650**	**10%**

Table 1. Capital costs of the Tasi Mane project. (MoF 2018, 2018a; ACIL 2016; La'o Hamutuk 2008, 2016a, 2016e, 2016g, 2018h)

In September 2018, Timor-Leste reached an agreement with ConocoPhillips to purchase the company's 30% share of the Greater Sunrise project for $350 million. The government hopes to persuade the other joint venture partners to pipe the field's natural gas to Timor-Leste for liquefaction. It is unclear how the government will come up with the billions of dollars that it will have to invest in developing the field (La'o Hamutuk 2018h).

Tasi Mane has become controversial because of its impacts on local communities, but issues of national concern – total cost, financial and social return on investment, limited employment potential, sources of feedstocks, and markets for its products – have yet to receive serious public attention. Many decision-makers defer to the project managers, the Ministry of Petroleum and Mineral Resources and the TimorGAP national oil company. Although the maritime boundary debate with Australia has been resolved, there is still no agreement on where Greater Sunrise gas will be liquefied. Nevertheless, Tasi Mane is accelerating (La'o Hamutuk 2018c, 2018g, 2018h). The project has powerful backers who make grand promises, and the technical and financial issues are complicated, causing few among Parliament, development partners or civil society to raise serious but necessary questions.

This is what the economy looks like

From 2005 through 2014, petroleum activities dominated Timor-Leste's Gross Domestic Product.

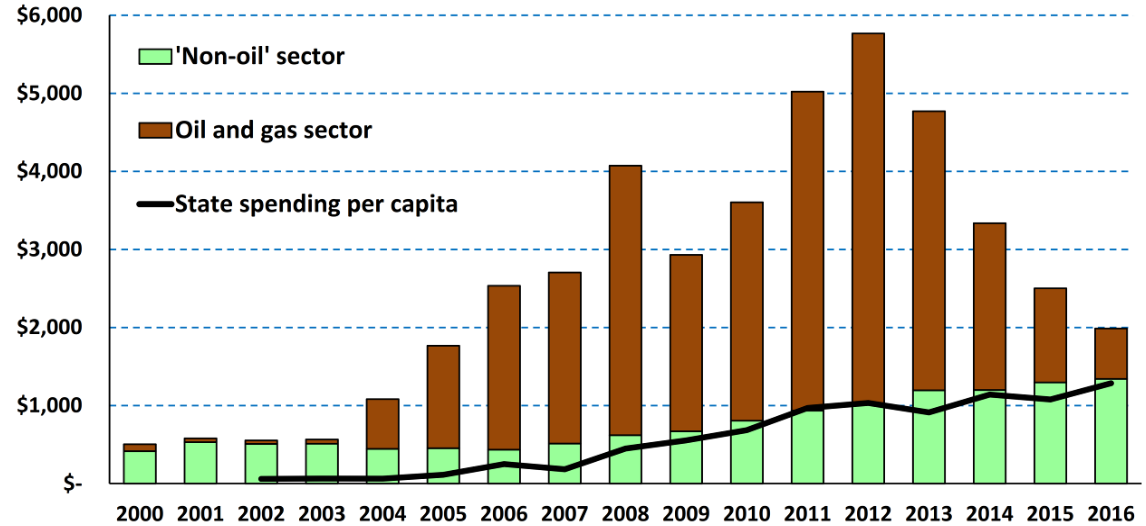


Figure 15. Oil and non-oil GDP per capita, current prices. (GDS 2017)

Although 'non-oil' GDP comprised less than one-fifth of the total during the peak petroleum years, it may soon be all that remains. From 2007 through 2011, as state spending grew, 'non-oil' GDP also increased, surpassing inflation and population growth. Nearly all its growth has been in construction and public administration, which are primarily driven by the state spending oil money (see Figure 16). The productive sectors of agriculture and manufacturing have not increased since 2003 (GDS 2017).

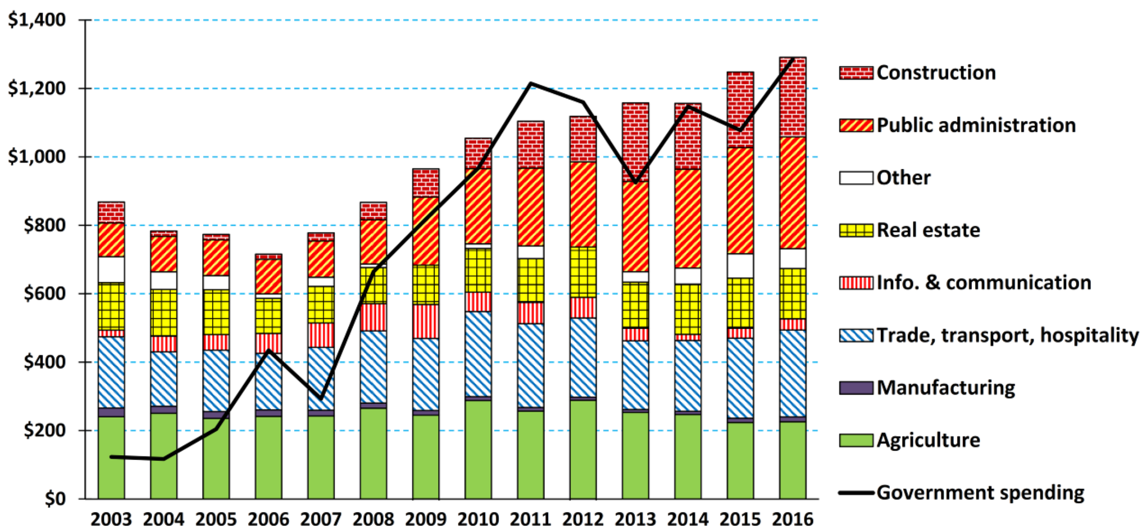


Figure 16. Sectoral contributions to non-oil GDP per capita, current prices. (GDS 2017)

GDP counts dollars (not people), so it gives a misleading impression of how the economy interacts with the citizenry. It includes non-productive activities like disaster recovery or higher oil extraction costs, imputes 'rent' for people living on or farming their traditional lands, and isn't influenced significantly by the fortunes or misfortunes of poor people.

Figure 17 shows that only about one-quarter of the working age population has formal employment, roughly divided among the public sector, the private sector, and self-employment in very small businesses. Another quarter are students, a quarter work as subsistence farmers or fishers, and the remainder are not working for pay, although many of them do unpaid domestic work and other informal jobs.

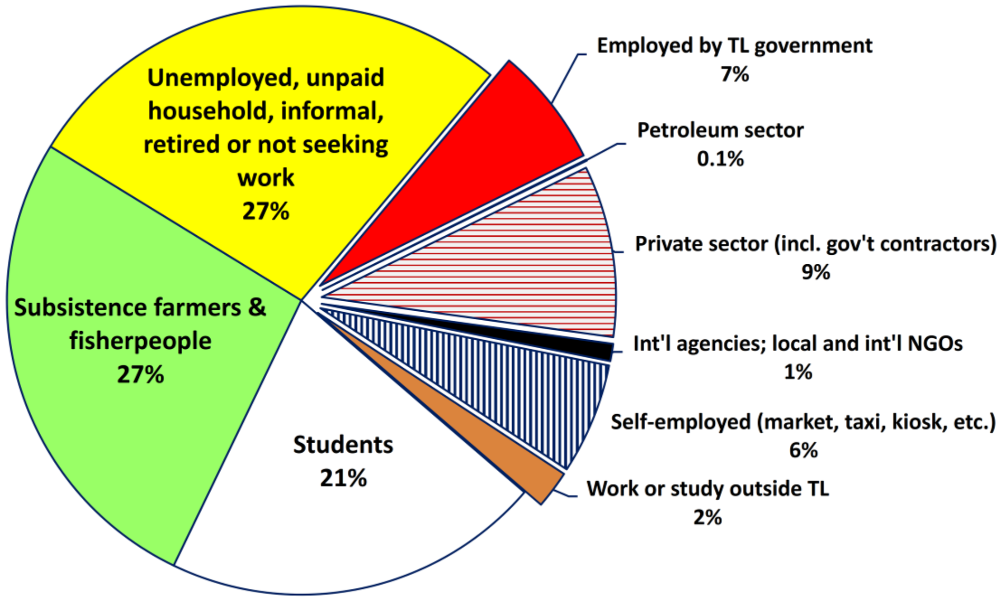


Figure 17. How 700,000 Timor-Leste people aged 15-64 earn their livelihoods.[11] *(MoF 2017; GDS 2015, 2017a, 2018b)*

When (some) people have money but there is little local productive capacity, they use it to purchase imports from overseas, as does the state itself. Since 2012, Timor-Leste has imported around $560 million worth of goods every year, most of which are bought by the public sector or state-paid individuals. Non-oil goods exports (nearly all coffee) average $18 million/year.

About 32% of imported goods come from Indonesia, followed by China (17%), Singapore (12%) and Hong Kong (11%) (GDS 2018b). Although exports could increase, the most effective way to reduce the trade deficit is to reduce imports, and about 40% of the goods imported for consumption could be produced in Timor-Leste if agriculture, food processing and small manufacturing were improved.

Timor-Leste also imports about $600 million in services each year, mainly travel, construction and services to government. Service exports total about $75 million, mainly for travel and hospitality sold to non-residents (CBTL 2017). By increasing tourism and reducing the use of foreign contractors and advisors, the services balance could be improved significantly.

Once the Petroleum Fund is gone, Timor-Leste will not be able to sustain such unbalanced trade. If local production has not expanded, many people will have no way to obtain daily necessities.

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[11] This graph includes estimates and data from several sources, and is consistent with the 2015 Census. Unfortunately, international reporting methodologies are designed for economies with a small informal sector, and don't consider subsistence food producers part of the 'labour force,' leading to meaningless unemployment numbers. Similarly, some international agencies use 'non-oil' GDP instead of total GDP, and therefore publish inconsistent statistics on sectoral spending as a fraction of GDP (La'o Hamutuk 2015e).

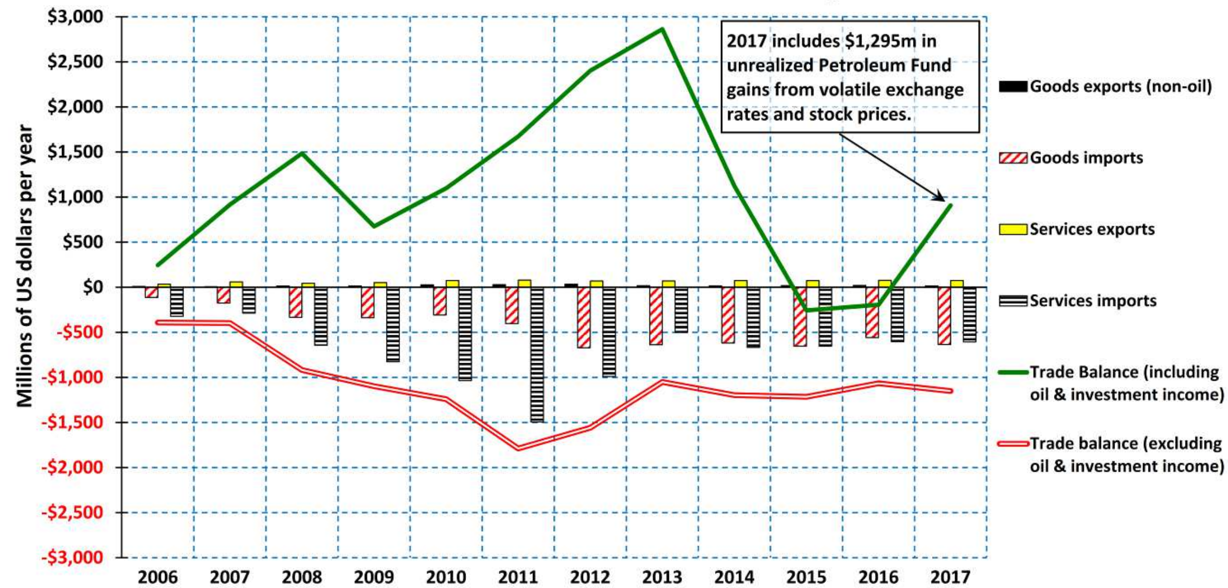

Figure 18. External Balance of Payments. (CBTL 2017, 2018)

Import dependency for consumption may be leading to misguided policy decisions. In 2016, Timor-Leste paid $130 million toward building a new container port in Tibar, just west of Dili. The port, which is a Public-Private Partnership with Bolloré Africa, is designed to handle about five times as much traffic as current levels, although planners estimate that 97% of departing containers will still be empty ten years from now (Hamburg Port Consulting, 2013).[12] In addition to consuming money and disrupting the local community, the new port effectively subsidizes imports, making it harder for local production to compete (La'o Hamutuk 2016c, 2016d).

Timor-Leste's leaders have also embraced globalization. The country hopes to join the WTO and ASEAN soon, which will involve free trade agreements with suppliers of 80% of Timor-Leste's imports. In 2016, Timor-Leste revised its private investment law to attract foreign companies and joined the International Centre for the Settlement of Investment Disputes (ICSID) surrendering its power to regulate investors. As local farmers and businesses struggle, national policies appear to prioritize solutions from outside the country, even though foreign investors will repatriate more money than they invest (La'o Hamutuk 2016i).

Local businesspeople have begun to complain that foreign contractors, imported labour, and small immigrant businesses (kiosks, retail stores) are infringing on the local private sector. Unfortunately, these protectionist reactions sometimes verge on racism, without analysing why local companies and families are unable to compete with visitors. Although some in Timor-Leste's private sector worry that the country could 'fall to foreigners in 20 years' (Timor Agora 2017), neither consumers nor government prioritize purchasing locally-made products.

[12] These figures are from traffic projections which underlay planning for the port a few years ago. The relevant authorities refuse to make more recent projections available.

Domestic private investment and employment are still very limited, with most business owners choosing to take profits out, rather than to reinvest them to grow their businesses. During 2016, businesses spent only 9% of gross revenues on labour, and private sector employment was less than it had been in 2012. Wages in the two largest sectors, construction and trade, averaged about $184/month, only a little above the $115/month statutory minimum. Timor-Leste businesses invested only $49 million in capital expansion, while extracting more than $467 million (21% of revenues) in profits (GDS 2018b).

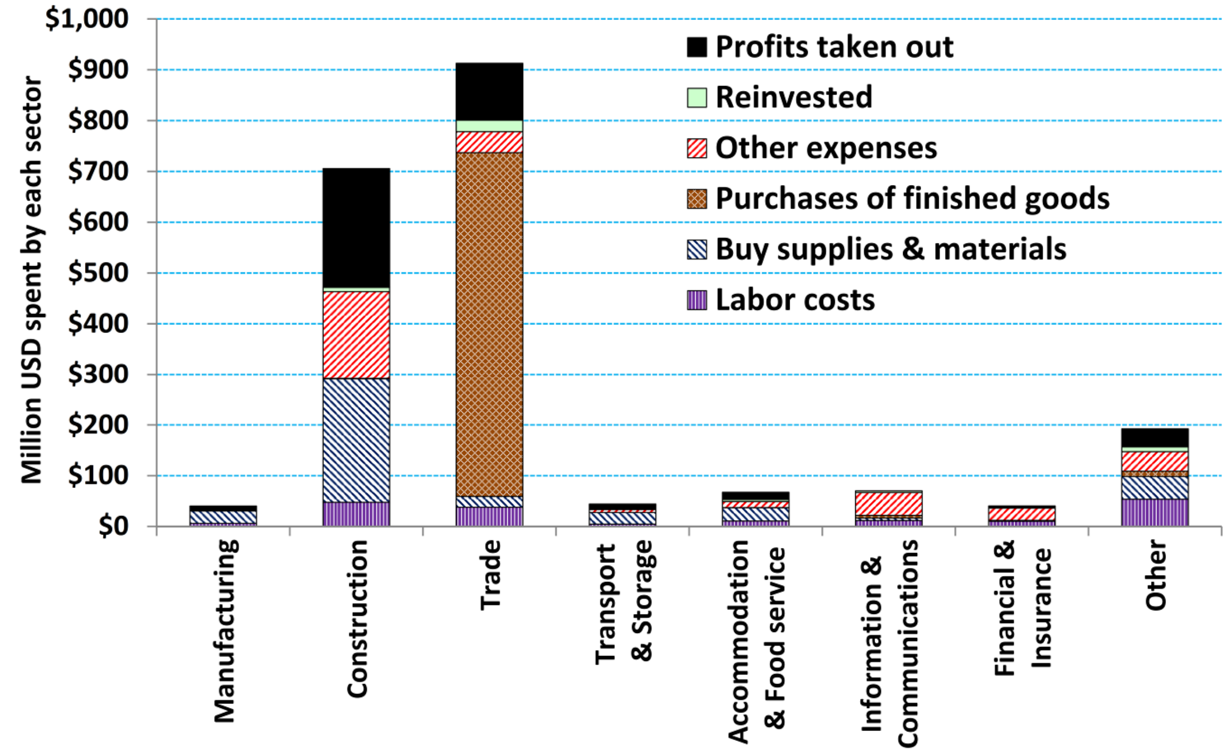

Figure 19. How private, non-oil businesses used the money they took in during 2016. (GDS 2018b)

How are Timor-Leste's people doing?

The lives of nearly everyone in Timor-Leste are much better than they were in the 1990s. No foreign soldiers are torturing and killing them, and most have rebuilt the homes that were destroyed in 1999. Maternal and child mortality rates are half of what they were fifteen years ago, and some preventable diseases, such as malaria, appear to be under control. People travel and speak their minds freely, and democratically elected political leaders purport to act in the public interest. National electricity and road systems connect major population centres, and most of the country, especially urban areas, has mobile phone service and access to TV and radio (GDS 2018c).

In the 2018 update from the U.N. Development Program, Timor-Leste's Human Development Index dropped slightly, and it ranked 132 out of 189 countries. The slight increase in statistically-extrapolated life expectancy was less than the drop in GNI due to falling petroleum revenues; education indicators were unchanged. Between 2010 and 2017, Timor-Leste's HDI increased by only 0.13%/year. By comparison, other Medium Human Development Countries increased their HDI by 1.15%/year, and many of the nine countries which did worse than Timor-Leste are at war (UNDP 2018).

Child malnutrition rates remain very high, and education and health indicators are far below average. Although a portion of Dili's population (especially government officials and contractors, and their families and employees) is doing fairly well, most of the billions of dollars in oil money has not reached the majority. According to the government, 42% of the population lived in poverty in 2014 (down from 50% in 2007, but about the same as in 2004), and 45% of children were malnourished (down from 49% in 2007) (GDS 2016), although Timor-Leste's children remain among the most stunted in the world (WHO 2018).

In Dili, 29% of people were living below the national poverty line in 2014, but more than half of the people in four rural municipalities lived in poverty (GDS 2016).[13] More recent information about inequality is limited, but in 2011 the top tenth of the population had 14 times the income of the poorest tenth, whose household income was about $50 per month (GDS 2013). In 2016, 86% of people in Dili were among the wealthiest 40% of Timor-Leste's population, and 3% were in the poorest fifth. In Ermera, only 15% were in the top 40, while in Oecusse, 46% were in the bottom 20 (GDS 2018c, table 2.6).

Low spending on education is reflected in how well children learn. Many schools have high absentee rates, large class sizes, double or triple sessions due to inadequate facilities, and a shortage of experienced teachers, books and furniture. Political controversies about language (Portuguese had been the official language of instruction, but many teachers and parents do not speak it), preferred schools (the few Portuguese-language CAFÉ public schools get far more resources than other public schools), and curriculum (a revision was implemented in 2015, reversed in 2017, and reinstated in 2018) have reduced the effectiveness of schooling, as do long distances (and no public transport) between homes and schools, especially in rural areas. Although enrolment levels have improved, even those who graduate appear to be below international levels in problem-solving, critical thinking, reading and numeracy.

One contributing factor to inadequacies in public health and education is that decision-makers' families do not use them. The government spends several million dollars every year to send 'important' people abroad for medical treatment, but most citizens have no access to this. Similarly, parents with some money can send their children to Catholic schools, and more affluent ones join expatriates at several international schools in Dili. Donors and government pay for overseas university studies for the most promising students – usually those who have had better primary and secondary school opportunities.

Prospects for the future

Timor-Leste's greatest resource is its people. Preceding generations endured trial by fire during the Japanese and Indonesian occupations, each of which killed a large fraction of the population and brought unspeakable hardships upon everyone. Nevertheless, many parts of Timor-Leste's culture remain intact even after five hundred years of foreign rule, and the bonds uniting most families are stronger than the tensions which could divide society. Defying the odds, the 16-year-old nation is peaceful, democratic, and mostly unified. Although political rhetoric is occasionally *ad hominem,* polarized or confrontational, the citizenry and politicians resolved the 2017-2018 "constitutional crisis" through an early election -- without violence, violating the Constitution or breaking the law. One need only look to South Sudan, Yemen, Syria or South Africa to appreciate what Timor-Leste's people have accomplished.

The strength of Timor-Leste society will be tested once again when the oil money is gone. That hurdle will be higher if current trends continue and the remaining resources are not effectively used to prepare for the non-oil era.

Although some opportunities were missed during the past decade through misspent money and misdirected policies, it may not be too late to recover. If Timor-Leste's leaders work toward building an economy based on local skills and local needs, the country will be better prepared for the non-oil era. It will not be the upper-

[13] Oecusse (63%), Ermera (57%), Covalima (53%), and Bobonaro (52%). In four other municipalities (there are 13 in total), more than 43% of people lived in poverty.

middle-income petro-state envisioned in the Strategic Development Plan – but it may be able to avoid economic collapse. The social fabric is resilient enough to survive lower levels of state spending.

There is no magic solution to Timor-Leste's economic future, and this author does not have all the answers. However, a few guidelines could improve prospects for the next several decades, including:

- Strengthen human resources by investing more in education, health care, child nutrition, rural water supply and sanitation. The last two generations of Timor-Leste's children have been challenged by war, destruction and reconstruction; the next ones need to be better prepared for the future.
- Improve agricultural production and processing, with the goal of nourishing the citizenry, providing employment and reducing imports. Timor-Leste is primarily an agricultural country and rarely uses expensive and often toxic pesticides, hybrids, GMOs and chemical fertilizers. These strengths can be maintained, even as productivity, value-added processing and distribution are reinforced.
- Develop small industries to produce for local needs, such as wood and plastic furniture, candles, food, water, juice and other simple manufactured products. Timor-Leste companies will not be able to compete for overseas markets with highly-mechanized, large-scale or sweatshop factories, but they can provide many things that their workers, neighbours and families buy every day. Selected exports are also appropriate, but they should be for niche markets (such as organic produce) rather than competing for a tiny percentage of a global commodity.
- Timor-Leste has great tourism potential, but should not try to compete with luxury resorts in Bali for high-end tourists. Preserve the country's attractions – nature, history, environment, culture – while upgrading tourism infrastructure to enhance the experience of those visiting the country.
- Use money effectively, avoiding waste and corruption and obtaining maximum value for each dollar spent. Timor-Leste's petroleum wealth belongs equally to every citizen, not disproportionately to those who are linked to people in power.
- Carefully analyze spending on major infrastructure projects, ensuring that the benefits to the public are greater than the costs and risks. Be wary of exploitation by foreign companies or special interests, especially when public funds subsidize a project. Invest the country's limited finite wealth in sectors and projects which will produce social and economic returns. Don't borrow money or enter into 'partnerships' which impose obligations on future governments or generations after the oil is used up.
- Plan for the longer-term future, not just for one electoral cycle. Although inter-generational rights to non-renewable wealth was a fundamental principle in creating the Petroleum Fund in 2005, it has largely been forgotten. Planning is more than promoting a vision – it includes analysing the costs, economic viability, public investment, timetable, preconditions, social and environmental impacts, alternatives, suppliers, customers, beneficiaries, possible scenarios and return of every project.
- Listen to the people. Unfortunately, foreign occupiers rejected consultation (asking people what they need and want) in favour of socialization (telling people what the state is going to do to/for them). People should be empowered to provide for their own needs and those of their communities, rather than relying on the state or outside generosity.

None of this will be easy, but all of it is possible and necessary. It is the next phase of the struggle for independence.

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