Timor-Leste in the First Quarter Century:

Economic Growth, Poverty, and Inequality

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Abstract

Timor paper reciews economic growth, poverty and inequality in Timor-Leste in the first quarter century. The economy grew slowly by international standards to make a dent into poverty reduction. Therefore, poverty is relatively high above 40% by 2014. However, inequality is relatively low due to the absence of modern sector large corporations. Economic growth and nation building has been underpinned by revenues from oil and gas. State budget grew almost exponential in the first quarter century but most of the expenitures was used to finance imports such that public expenditures was not able to sustain growth, create jobs, and and let alone reducing poverty. Timor-Leste may rethink its development strategy by focusing on developing the productive sectors that may address several issues raised in this paper and promote prosperity for all East Timorese. Besides productive sectors, Timor-Leste may also need to find more efficient ways to raise the productivyt of its factor of productine, namely capital, labor, and land.

Key words.

Economic growth, poverty reduction, inequality, public expenditures, productivity, factors of production, and oil and gas reveunes.

I. Introduction

This paper reviews economic growth, poverty, and inequality in Timor-Leste in the last quarter century. So much have been discussed about economic growth, poverty, and inequality both at global level, regional as well as at national level, including in Timor-Leste. Studies on linking poverty, economic growth, and inequality is abound. Only few nations that grow fast but fewer too grow fast and reduce poverty at the same time. Even less grow fast, reduce poverty, and reduce inequality.

Low base economy, subsistence agriculture, and large proportion of rural population are the main characteristics of many developing countries at the start of development and structural transformation. Many have done well like those industrial countries of East Asia (Hong Kong, Japan, Singapore, South Korea, Taiwan) in the 1990s. Malaysia soon will be joining the ranks in the second half of the twenty first century. The early industrialized economies of East Asia had common stories of success. They opted for export-oriented strategy to promote growth. That is adoption of open-door policy by allowing unrestrained flow of goods and services, capital and (to a certain degree) labor. These countries undergone industrialization in merely a generation compared to those in Western Europe and North America that took more than a generation to do so.

Factors that explained rapid growth and industrialization in East Asian countries center around efficient usage of factors of production (land, labor and capital), open economy, and decreasing transportation costs. The later allowed relatively free movements of goods and services and factors of production from abundant countries and regions to countries and regions that needed the most, productive, and have high multiplier effect.

Timor-Leste has experienced growth over the last fifty years, starting with Indonesian occupation, especially from 1980s (Saldanha, 1994) and continued to independence period although the pace growh are totally different. From 1980 – 1999, economic growth was high amid of military confrontation and political instability. In the first quarter century, after Timor-Leste gaining independence, growth has been characterized by fluctuations, driven by public (oil and gas) expenditures, and relative low inflation (around 5%) due to dollarization of the economy. The overall GDP growth of in the last quarter century was around 1.8%, well below 5%, let alone double-digit growth to make significant dent into poverty reduction.

On the other hand, high imports with very small and concentrated exports, lack of employment and technical skills, low productivity of factors of production (land, labor, and capital) are the main constraints to growth in Timor-Leste. In addition, poor connectivity (roads and telecommunications) and concentration of development in urban areas, especially the capital, Dili also explain low growth and slow poverty reduction in the last quarter century.

Therefore, poverty in Timor-Leste has remained stubbornly high, hovering above 40% with high poverty incidence in rural areas, especially in the highland mountainous areas in central Timor-Leste. The urban enclave of Dili and the eastern region are better-off compared to the central region of the country.

As for inequality, Timor-Leste’s distribution of income is relatively even with Gini Coefficient of 0.29 (2014). It is possible that inequality has worsened since Covid-19 from 2020 and beyond. There are also reports on faster development in urban areas while rural areas lag behind.

This paper tracks economic growth, poverty reduction, and inequality in Timor-Leste since 2000. The paper end with conclusions and recommendations that could be useful for policy intervention to raise growth, reduce poverty, and and further sustain reduction of inequality.

One factor that works in Timor-Leste's advantage is that Timor-Leste is a late comer in the development process and structural transformation. Therefore, Timor-Leste is benefitted by various models employed by different countries around the world both successfully and fail. Timor-Leste can learn from success stories of East Asian countries as well as avoid failures of many Sub-Saharan African countries.

II. Economic growth

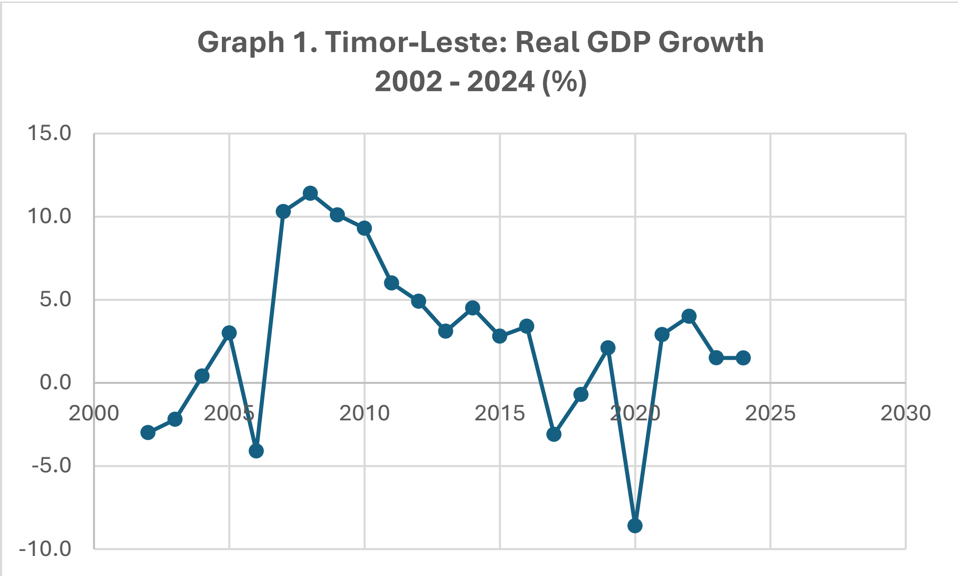
Economy often is represented by Gross Domestic Product (GDP), which is the total value of all goods and services produced domestically in a certain period of time. GDP is measured by expenditures, by production and by incomes. GDP also can be measured by three sectors, namely primary (agriculture and oil and gas), secondary (manufacturing industry), and services (including construction, wholesale and retail trade, finance and insurance, real estate, and public services). Furthermore, GDP also is measured by income of all individuals, of all business, and of government. This measurement simply recaps es anearned by main actors of the economy.

Economic growth means positive change of GDP, which is desirable to turn a country from agricultural and rural based economy into a modern-urban based economy spearheaded by industry and services. Countries avoid GDP contraction due to shocks to economic fundamentals, like price (inflation) increase and production by adoting policies that raise income, create jobs, and maintain low prices.

Overall, economic growth of Timor-Leste is slow in the first quarter century with annual average growth of just about 1.8%. This is low compared to 5% rate to be considered modest by international standards. With average growth of 1.8%, it will take more than 38 years to double income ($1,1210). Taking baseline of 6% with 8% and 10% scenarios, it will take less than 12, 9, and 7 years for Timor-Leste to double its income. This implies that double digit growth accelerates economic development and most likely poverty reduction, other factors being equal.

The best growth performance of Timor-Leste was achieved between 2007 – 2011 when average growth hit double digits rates for four consecutive years (Graph 1). Low base economy and expansion of government expenditures are the two main factors that explain this high growth in the *belle epoque*. Small increase of economic activity in low base economies will translate into large percentage change in the economy. Government expenditures rose from merely $130 million in 2005 to $1.6 billion in 2015 and by 2024, the budge hit $2.2 billion. This is due to increased revenues from oil and gas from the Timor Sea.

High growth could not be sustained in the face of politico-military crisis (2006), political deadlock (2017 and 2018), and Covid-19 Pandemic (2020) shocks.[2] Timor-Leste's economic challenges is how to keep the country growing high aas possible and as long as possible. The economic fundamentals should be able to resist and stave-off shocks both domestic and international shocks. Promoting reforms to diversify the economy is critical to promote broad-based economic growth as well as staving-off shocks to the economy.



Source: Processed from INET-TL various issues

2.1. Economic growth by expenditure

From expenditure side, economic growth simply means increase of consumption, investment, public expenditure, and positive net trade (exports minus imports). Consumption is done by households, business, and government, investment by business and government, and both business and government trade with the outside world through exports and imports of goods and services. Increase of consumption, investment, government expenditures and net exports raise economic growth while increase of imports reduces economic growth.

From expenditure side, GDP growth of Timor-Leste has been dominated by investment (7.3%) and followed by exports compared to growth of other components (Table 1). However, both investment and exports are only small components of GDP compared to consumption, government expenditures, and imports. Nevertheless, imports growth is the slowest compared to other components. This is because the value of imports is already very high since 2003 or above $800 million since 2003 (Table 2). There is no sign of reduction in imports given the fact that production in Timor-Leste is low, especially in agriculture and industry/manufacturing as discussed in the next sub-topic on GDP from production side. The second slowest growth is consumption, the second component with the highest value and became the highest ones in 2022, overtaking imports.

[2] In 2006, the contraction was triggered by politico-security crisis within the armed forces (F-FDTL) that widened to the society and displaced many people from their houses, especially in Dili, the capital city in which 150,000 people where displaced, 1,650 homes destroyed, and 38 people killed (Van der Auweraert, 2012: p18).

Table 1. Timor-Leste: Annual Percentage Change of Non-Oil GDP Expenditures, 2003 – 2022 (Constant 2015, %)

No	Sectors	2003	2005	2010	2015	2020	2022	Average 20 years
1	Consumption	-17,4	-12,3	2,8	1,2	1,5	7	1,1
2	Investment	-22,6	-5,9	3,1	-3,6	-46,9	29,4	7,3
3	Government	-26.1	-28.1	2.1	3,6	4.9	-0.2	1.4
4	Exports	-7,9	-10,6	28	-28,3	-47,3	30,3	2,0
5	Imports	-28,7	-33,2	-1,8	-7,4	-7	22,8	0,8
	Total	**-2,2**	**3,2**	**9,3**	**2,8**	**-8,3**	**4**	**2,9**

Note: 1. All figures are constant 2015. 2. All figures are non-oil and gas figures.
Source: Processed from INE TL, 2023.

Table 2. Timor-Leste: Non-Oil GDP Expenditures, 2000 – 2025 (Constant 2015, $million)

No	Sectors	2003	2005	2010	2015	2020	2022	Note
1	Consumption	779	783	811	928	1,040	1,154	
2	Investment	174	111	482	567	235	286	
3	Government	749	390	1,069	937	942	966	
4	Exports	54	43	109	49	15	40	
5	Imports	879	415	1,174	907	801	894	
	Total	**884**	**914**	**1,297**	**1,595**	**1,483**	**1,588**	

Note: 1. All figures are constant 2015. 2. All figures are non-oil and gas. 3.
Source: Processed from INE TL 2023.

Domestic consumption, investment and trade have not contributed significantly to growth and poverty reduction. Private final consumption (FCE) indeed increased over the last quarter century, especially the last 15 years (National Accounts, 2022:XVI) but the effects on growth is still weak. Likewise, investment (gross capital formation) that also increased, especially buildings and structures still have limited contribution to economic growth. Exports also played a minor role in promoting growth. Overall, exports of goods and services only comprises 2.2% of GDP (2022), very small to make any significant contribution to economic growth and thus poverty reduction.

2.2. Economic growth by production

As imports continue to dominate the economy of Timor-Leste (56.3% or $894 million) in 2022. Imports is comprised mainly of construction materials, equipment and machinery, and food and beverage (Saldanha and Ribeiro, 2022). Import movements correlate positively with public expenditures, which means that increase in public expenditures also increase imports. In other words, relatively large proportion of public expenditures is used to finance imports (National Accounts, 2022: XVII).

Public expenditures tend to crowd-out exports because funds mostly are used to finance imports produced elsewhere. This confirms anecdotal stories that expenditures of Timor-Leste promote growth and creates jobs in other countries rather than in Timor-Leste. Public expenditures also crowd-out investment in productive sectors, such as agriculture, manufacturing and services because it is used to finance imports. Therefore, multiplier effect of public expenditures in Timor-Leste is small or $0.1 for every dollar of public expenditures (IMF Article IV, 2024), which is very low compared to $4 of multiplier textbook. One dollar expenditures only generates ten cents in the economy The remaining 90 cents leaked to the outside world through import.

The remedy from this challenge is to raise domestic production to meet the domestic demand. This will bring many benefits to the economy, especially jobs, income generation, reduce trade deficit and thus balance of payments deficit, and improvement in income inequality. The overall effect is reduction of extreme poverty. In addition, domestic production increase will absorb the idle capital of more than $1.7 billion in the domestic banking and financial system. Most of these funds are placed overseas that contribute minimally to economic growth, job creation, and income generation. Achieving higher level of production in a diversified economy can help economic transformation and poverty reduction in Timor-Leste. Investments in productive sectors will also help to address macroeconomic challenges, like inflation, jobs, income inequality, and trade deficits. Table 3 presents GDP by production from 2000 – 2025. In the first quarter century, all sectors improved in terms of size. Overall, the economy almost doubled in the first quarter century. However, the expansion was slow such that it ws not able to reduce poverty, create jobs, and reduce trade deficits, let alone reduce poverty.

Table 3. Timor-Leste: GDP Production, 2000 – 2025 (2015, $million)

No	Sectors	2000*	2005	2010	2015	2020	2025*	Note
1	Agriculture, Forestry & Fishery	310	267	318	284	288	330	
2	Manufacturing/Other Industries	25	21	13	16	32	38	
3	Construction	119	27	200	274	164	130	
4	Wholesale, Retail, Transport, Storage, Accom. & food services	198	256	292	291	239	250	
5	Information & Communication	5	13	32	36	62	36	
6	Financial & Insurance	11	8	3	12	25	35	
7	Real Estate	81	90	109	180	187	202	
8	Professional, Science, Tech, Admin & Support Services	5	5	25	50	17	39	
9	Public Administration, Defense, Education, Health, & Social Work	102	114	109	386	444	538	
10	Other services	53	98	70	58	35	57	
	Total	**858**	**914**	**1,297**	**1,595**	**1,483**	**1,636**	

Note: 2000 and 2025 figures are own estimates
Source: Processed from INE TL 2023.

Sector wise, service sector grows fast, while agriculture and manufacturing grew slowly in the first quarter century. Within the service sector high economic growth is contributed by service sector. Agriculture, industry/trade, and services contributed weakly to GDP growth (IMF Article IV 2013). Therefore, the contribution of productive sectors of agriculture, manufacturing, and services is small. In other words, domestic supply face slow growth.

Table 4 shows long-run growth of productive sectors of Timor-Leste. The table presents annual 5, 10, 20, and 25 year average growth rates. Overall, the first quarter century confirms low economic growth (3.0%). Breaking down into five and decade annual growth rates of different sectors in the first quarter century.

At initial period, 2000 – 2004, the economy actually contracted by -0.5% driving by contraction in construction and finance and insurance. This could be related to the drawdown of the United

Nations Transitional Administration in East Timor (UNTAET) and Timor-Leste gaining full sovereignty in 2002. Many economic activities serving the international community slowed down although sectors like information and communication and public administration expanded more than double digits in the same period. Expansion in these two sectors cannot neutralize contraction in construction and financial and insurance sectors in the economy.

Table 4. Timor-Leste:
Production Growth Average, 2000-2025 (Constant 2015, %)

No.	Sectors	2000-04	2005-09	2010-14	2015-19	2020-24	2000-09	2010-19	2020-25	2003-22	2000-25
1	Agriculture, Forestry, & Fishery	1,5	3,2	0,1	-0,6	4,5	0,7	-0,3	4,7	1,5	1,9
2	Manufacturing & Other Industry	-0,5	-8,7	-3,4	25,3	14,9	-0,3	11,0	18,3	3,5	6,6
3	Construction	-31,0	55,8	6,7	0,9	4,2	-15,5	3,8	13,5	8,5	9,4
4	Wholesale, Retail, Transport, Storag	2,9	1,1	2,5	0,2	-0,5	1,4	1,4	0,6	1,2	1,4
5	Inofrmation and Communication	61,5	29,2	-8,0	23,3	-16,3	30,8	7,7	-16,1	18,8	16,7
6	Financial & Insurance	-14,0	-15,0	38,6	22,9	37,2	-7,0	30,7	46,3	11,6	16,9
7	Real Estate	1,2	2,0	13,5	-5,6	1,9	0,6	4,0	2,0	2,9	2,6
8	Professional, Science, technology, A	-0,7	8,5	65,3	-5,8	22,8	-0,3	29,7	24,0	21,1	18,5
9	Public Admiistration, Defense, Educ	11,2	12,0	13,4	4,1	6,9	5,6	8,7	7,4	9,1	9,5
10	Other Services	28,8	-2,2	-3,5	-3,4	5,2	14,4	-3,5	4,2	3,1	4,8
	GDP	**-0,5**	**6,1**	**5,4**	**0,9**	**1,5**	**-0,3**	**3,2**	**2,0**	**3,0**	**2,8**

Note:

1. Data from 2000 – 2002 and 2023-2024 are estimations. Taking average of 20 years then estimate backward (2000-2002) and forward (2023-2024)
2. Data for 20-year annual and 25-year annual growth are calculated for comparisons.

Source: Processed from INE-TL, 2023

Beginning the year when petroleum revenues start flowing into the state coffers (2005), the economy started to pick up driving by high growths in construction, information and technology, and public administration, defense, and education. This happened amid of 2006 crisis alone that made created negative growth but the overall period was positive. In fact, this was the period when the overall economy expanded by 6.1%, the highest compared to any other sub-period of five years, even the decades long period in the first quarter century. The second five year period of high growth after 2005-2009 was 2010-2014 in which the overall economy grew by 5.4%. The two periods of 2005-2009 and of 2010-2014 are the relatively high growth period of the first quarter century. These high growths rates are also due to increased government revenues from oil and gas from Bayu Undan field. In other words, the first decade since oil and gas revenues started to flow into the state coffers (2005), economic growth also was high compared to other sub-periods.

Wholesale and retail trade, transportation, storage, and accommodation and food services sub-sector records lowest growth both in two decades period as well as in a quarter century period although it is the third largest sector (15.3%) in the economy after public administration (32.9%) and agriculture, forestry, and fishery (20.2%) sectors.

Agriculture, forestry and fishery is the second slowest growing sector in the first quarter century (1.9%).[3] The slow growth of agriculture, forestry and fishery sector was caused by heavy contraction in this sector in the second decade after independence, namely 211 (-16.3%), 2013 (-5.2%), and 2017 (-2.9%). It is not clear what caused this contraction but for sure it dragged down the whole economic growth of the country after 2011.

3

Although agriculture, forestry and fishery is the second largest sector in the economy (around 20% of GDP) and third if we include oil and gas sector. When public expenditures expand (2010 – 2014), agriculture, forestry and fishery sector tend to contract. This is evident in Table 4 in which agriculture, forestry, and fishery is the second slowest sector after wholesale, retail, transport, and storage in two decades (2003 and 2022).

Sectors growing rapidly in the first quarter century are professional, science, technology, administration, and support services (18.5%), financial and insurance services (16.9%), information and communication (16.7%), and construction. However, these sectors' role in the economy are less than 3% of GDP although have potential for growth and expansion.

Another sector that deserves attention is real estate. Although grow slowly in the first quarter century (2.6%), it is a sector that experienced less volatility during the first quarter century compared to other sectors. Real estate recorded negative growth only at the beginning of reconstruction period in 2000 and in crisis of 2006. Other than that real estate has grown steadily to become the fourth largest sector (12.4%) in the economy after public administration, agriculture, and wholesale and retail trade.

Other sectors are volatile and vulnerable to the vagaries of economic and political shocks. These sectors are manufacturing, construction, wholesale, retail, transportation, storage, accommodation and food services, and information and communications.

Another point of attention is average growth of 2.8% - 3% in a quarter century means that GDP should have been doubled in 23 or 25 years. However, after a quarter century, GDP has only reached $1.7 billion in 2023. It missed around $80 million to double starting in 2000. Therefore, it will take longer time for the non-oil GDP to double from the levels of 2023.

The challenge is how to Timor-Leste grow at higher rates and sustained over long period. Timor-Leste has economic potential that can be tapped to promote growth and poverty reduction. Timor-Leste have a potential of almost $70 billion that can be materialized to improve the living standards of its citizens. These resources are yet to be tapped to raise income, reduce poverty reduction, and inequality.

These resources are comprised of non-oil resources in agriculture, industry/manufacturing, services, and blue economy. Digital economic potential of Timor-Leste has not estimated yet but it is believed to be very potential.

Aside from non-oil, of course there are oil reserves yet to be exploited in Greater Sunrise (Timor Sea) area and on-shore potential. The only off-shore oil and gas reserves that have been exploited is from Bayu-Undan in the Timor Sea.

If land is counted properly, Timor-Leste's land alone assets can be valued at $225.3 billion. This value is yet to be monetized.

1. **Total Non-Oil: $20.3 billion → percapita around $15,000**
    1. Agriculture: $3 billion → rice alone can be $540 million
    2. Industry/manuf./trade: $6 billion (water $500 million)
    3. Service (tourism, etc): $6 billion
    4. Blue economy (coastal and marine ecosystem): $5.3 billion

2. **Oil and gas: $48 billion**
    1. Greater Sunrise: $30 billion (estimated, unexploited) → under discussion
    2. Petroleum Fund: $18.2 billion (December 2023).

3. **Land value: $225.3 billion**
    1. TL land of 15,000 km2;
    2. If 50% used for production of any kind @$30/m2 value

All of these potential are the sources of growth and poverty reduction as well as for reduction of income inequality.

III. Poverty

Poverty is measured by income of the population against a benchmark income, called *poverty line*. The proportion of population whose income below poverty line are said to be poor, while those with income above poverty line are called non poor. There are three main measures of poverty, namely *poverty headcount*, *poverty gap*, and *severity*.

Poverty headcount is the percentage of population living below poverty line. While poverty gap is the gap of average income of the poor with poverty line. Or percentage of average income gap of the poor to reach poverty line. Poverty gap helps to understand the depth of poverty that is useful to address by policy makers.

Poverty *severity* refers to the depth and intensity of poverty that includes poverty gap, income inequality, deprivation in education, health, living standards, and access to basic services. Poverty severity also include chronic poverty that is long-term and persistent poverty. Poverty severity can span over generations making it harder for individuals and families to break out of the cycle of deprivation.

For Timor-Leste, poverty headcount was 39.7% in 2001, poverty gap was 11.9%, and severity of 4.9%. Almost 40% of East Timorese were poor in 2001 with almost 12% of poverty gap. The estimate suggest that it needs income transfers of $18.28 million to close this gap (World Bank, 2002). Severity of 4.9% indicates inequality among the poor in Timor-Leste. Lack of access to opportunity, to education and health, and to basic services contribute to this level poverty severity.

Subsequently, poverty headcount was 50.4% in 2007 and 41.8% in 2014 (World Bank, 2014), which implies an increase of 10.4% from 2001. Seven years later, poverty rate only declined 8.6% and have not reached the 2001 levels. Since 2014, there is no poverty estimates.

Economic growth is one way out of poverty because economic growth has an inverse relationship with poverty. This implies that when growth goes up, poverty tends to decrease. Garzia-Rodrigues (2018) surveys studies on growth and poverty reduction based on cross-sectional, time series, and bidirectional results.[4] The literature shows that on average a one percentage increase in economic growth reduces poverty between 1% to 4%. The relationship between poverty reduction and economic growth depends on country specific conditions as well as on whether the study is cross-sectional, time series or bi-directional.

Evidence on regional studies also show that increase of economic growth reduces poverty significantly (Fosu, 2012). Fosu finds that both cross-section and time series across regions show a one percent increase in economic growth reduces poverty between 0.82% and 1.33% (Table 5). This gives us the average of economic growth reduces poverty by about 1.1%. In other words, an increase of 1% of economic growth reduces poverty by 1.1%.

Looking specifically to East Asia and Pacific region, a one percent increase in economic growth reduces poverty between 0.71% and 1.3%. The Asia Pacific result also show that the average poverty reduction is 1.1% or a one percent increase of economic growth reduces poverty by about 1.1%. Therefore, we adopt this average to estimate poverty rates in Timor-Leste between 2015 and 2022.

Table 5. Economic Growth and Poverty Reduction by Six Regions (%)

No	Region	1981-95	1996-2005	Average
1	East Asia and Pacific	-0.71	-1.3	-1.1
2	Average (Six Regions)	-0.82	-1.33	-1.1
3.	Timor-Leste (use Average in #2)	-	-	-1.1

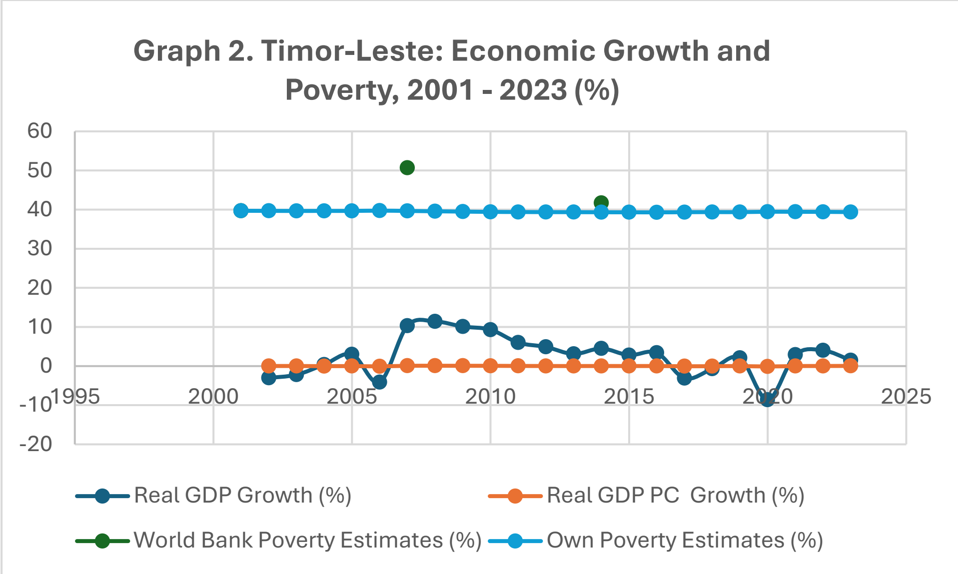
Note: Regions are: 1. East Asia and Pacific (EAP), 2. Eastern Europe and Central Asia (EECA), 3. Latin America and Caribbean (LAC) 4. Middle East and North Africa (MENA), 5. South Asian (SAS), and 6. Sub-Saharan Africa (SSA).
Source: Processed from Fosu et al (2012) Table 1 p.308.

Therefore, we emply the findings of 1% economic growth reduce poverty by 1.1% for Timor-Leste. The World Bank also estimated poverty headcount for 2010 based on Demographic Health Survey (DHS 2010). Graph 2 shows that real GDP and real GDP per capita growths and poverty headcount from 2001 – 2022. The figures for 2015 – 2022 are derived by using Fosu (2012) method. The graph and table show that poverty actually flattened since 2007, while GDP growth fluctuated.

Another important point of Graph 2 is that poverty worsened from 39.7% in 2001 to 50.4% in 2007 and only recovered partially to 41.8% in 2014. These estimates show that poverty headcount does not link with economic growth. The long interval of six years and seven years of poverty estimations may have contributed to this anomaly.

However, cross-country, time series, bidirectional, and regional studies show that a one percent increase in economic growth reduces poverty between 1-4%. Timor-Leste's evidence show that economic growth is delinked with poverty reduction (Table 6).

[4] See Table 2.2A that recaps these studies.



Note: Own poverty estimates (column 5) is based on the assumption of 1% increase in economic growth reduces poverty by 1.1%.
Source: 1. Poverty: 2001, 2007, and 2014.
2. World Bank https://data.worldbank.org/indicator/SI.POV.NAHC?locations=TL and
3. Own estimations (2001 – 2023).

Table 6 shows that poverty rates by municipality also varied (in 2014) with the highest poverty rate is recorded for Oe-Cussi (62.5%). Dili has the lowest poverty rates, 29.1%. This could be due to the fact that Oe-Cussi is an enclave in Indonesia's West Timor, poor roads, electricity, and services, limited job opportunities and difficult due to isolation. However, since 2014 larged infrastructure development, such as airport, roads and bridges, irrigation, port, and electricity have been developed. The government of Timor-Leste spent around half billion of dollars to develop infrastructure in Oe-Cussi. This may contribute to reduction of poverty in Oe-Cusse. However, evidence is still largely absence to make accurate conclusion of whether poverty has reduced substantially given large public investment in infrastru ture in Oe-Cussi.

Table 6. Timor-Leste Poverty Rate by Municipality, 2014

No.	**Municipality**	**Poverty Rate (%)**	**Note**
1	Aileu	35.1	
2	Ainaro	43.2	Above national level
3	Baucau	32.6	
4	Bobonaro	51.7	Above national level
5	Covalima	53.1	Above national level
6	Dili	29.1	Lowest
7	Ermera	56.7	Above national level
8	Lautem	32.2	
9	Liquica	43.0	Above national level
10	Manufahi	47.7	Above national level
11	Manatuto	43.1	Above national level
12	Oe-Cussi	62.5	Highest
13	Viqueque	36.9	
	National	**41.8**	

Source: INE-TL. www.inetl-ip.gov.tl

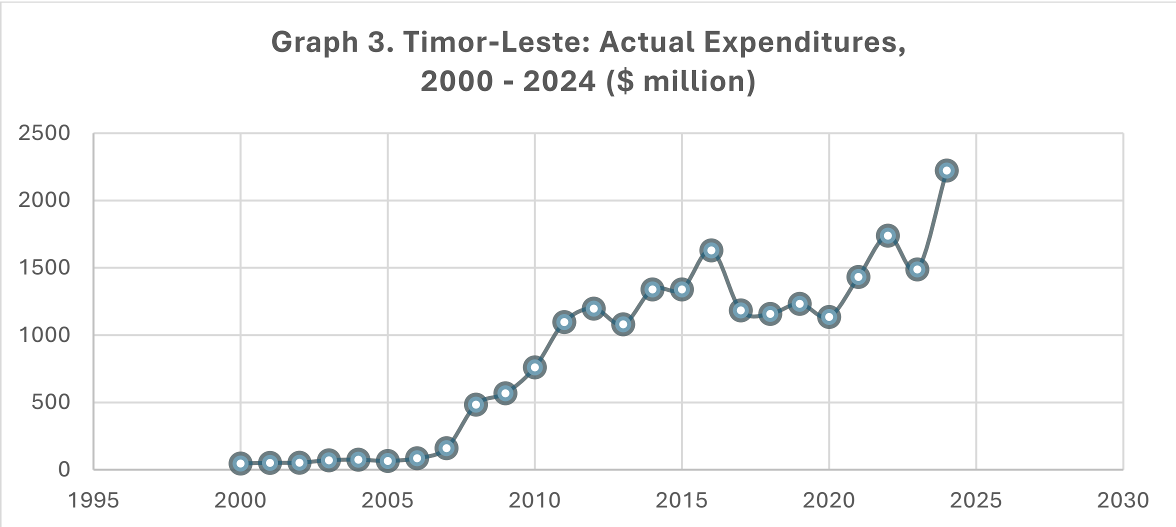
IV. Low productivity of factor inputs

The slow and fluctuated growth of Timor-Leste can also be explained by low productivity of factors of production, namely capital (public and private), labor and land (rice field). These factors of production employed in different sectors of the economy, like agriculture, manufacturing, and tourism but have not been able to grow and sustain the economy over long-term, especially in the first quarter century of Timor-Leste. Income is low, jobs are limited, and youngsters have to migrate to find jobs overseas.

4.1. Capital

Graph 3 shows public expenditures of Timor-Leste 2000 – 2024. Public expenditures increased exponentially since 2005 through 2024, from merely $52.5 million in 2002 to a staggering $2.2 billion in 2024.[5] Total actual expenditures in Timor-Leste, including donor support between 2000 and 2024 is around $21.5 billion.[6] However, sharp increase in public expenditure plus donor support since 1999 have not made significant dent into poverty reduction. Regardless, public expenditure of $21.5 billion in span of 24 years for a population of 1.4 million. Or per capita expenditures is about $16,045, the economy grows slowly, poverty remains very high, and limited jobs in the economy.

Although public expenditures increased rapidly in a quarter century, the results in general are poor due to low economic growth, lack of employment, and high poverty incidence. Expansion of public expenditures only deepened imports (IMF Article IV 2023). In other words, expansion of public expenditures did not promote high economic growth, job creation, and reduce poverty because large proportion of expenditures mostly were used to increase imports. Local content and local production is low such that it cannot absorb increased public expenditures.



Source: Processed from Ministry of Finance. www.mof.gov.tl.

[5] First quarter of 2024 execution was $404 million or 22.6%.

[6] This figure is still below the actual levels because of missing data of certain categories and years, especially between the period of 1999 – 2002.

The size of public expenditures in Timor-Leste is comparable or even exceeds non-oil GDP of Timor-Leste or way above international standards of 20-40% (Rosengard, 2000). But for Timor-Leste case, public expenditures is larger than GDP of Timor-Leste.

Table 7 shows public expenditure increase from 2007 – 2023. Public expenditures grew exponentially across all categories. The increase of oil and gas revenues is the main contributing factor to exponential growth of public expenditures. Public transfers is the fastest growing category since it was introduced in 2007 State Budget (table 7) by about 277% in 17 years (2007-2023). Public Transfers was $929.2 million (41.8%) in 2024 Budget. This is the highest compared to other categories. Even after removing $254.8 million of capitalization of Public Institutions and State Owned Enteprises, this category remains the fastest growing category of all five categories of the state budget.

Table 7. Timor-Leste: Public Expenditure Growth by Category, 2007 – 2023 (%)

No.	Expenditure Category	Growth 2007-23 (%)
1	Salary and Wages	72,1
2	Goodsd and Services	9,2
3	Public Transfers	277,0
4	Minor Capital	24,3
5	Capital & Development	86,3
6	Contingency	
	Total	48,7

Source: Processed from Saldanha (2024). "Timor-Leste: Macro Data Set."

From revenue side, two most significant sources of revenues for Timor-Leste since 2000 have been oil and gas and foreign assistance from Development Partners. Oil and gas revenues come from Bayu-Undan field in the Timor Sea, an area that is jointly explored with Australia. Oil and gas revenues begun to flow into the state coffers of Timor-Leste in 2001 although in small amount, $13 million. But increased substantially in 2007 with revenues of 482 million. Then continued to rise and peaked in 2012 (almost $4 billion) in a single year. After the peak, revenues from oil and gas has begun to decrease and dried down in 2024.

The second source of revenues are grants from Development Partners, especially during the period of reconstruction, 1999 – 2002. At the initial stage (2000 – 2025), public expenditures were exclusively covered by Development Partners for reconstruction and development of Timor-Leste. Funds from Development Partners came in from three channels, namely UN Assessed Contribution, Consolidated Fund for East Timor (CFET), and Trust Fund for Timor-Leste (TFET). The total amount for these funds are in the neighborhood of $2 billion just from the period 2000 – 2004. Since 2005, revenues from Timor Sea already started flowing to the Timor-Leste's coffers, development partners support began to wind down and stabilized around $200 million every year since 2005 or around $4.6 billion. This brings the total amount of donor support to $6.6 billion since 2000 through 2024.

Therefore, total expenditures in Timor-Leste since 2000 is approximately $21.5 billion or per capita of $15,985.13. However, GDP Per Capita of Timor-Leste in 2024 was only around $1,200. Average Real GDP growth in the first quarter century is between 1.8%, while the average annual growth of public expenditure growth in the same period is around 18.5%.

Multiplier effect of public expenditures of Timor-Leste is between 8 cents and 27 cents or $1 of public expenditure only creates between 8 cents to 27 cents in the local economy. The World

Bank (2025) estimates that multiplier effect in the economy of Timor-Leste is between 10 cents and 20 cents due to large proportion of public expenditures to finance imports of consumption and capital goods (IMF, 2024). Therefore, public expenditure in Timor-Leste does not affect the economy as strongly predicted by the multiplier model.

4.2. Labor

Labor productivity in Timor-Leste is low compared to other countries. Timor-Leste's GDP per worker at purchasing power parity is $9,661.4, the lowest compared to other countries in Southeast Asia (Indonesia and Lao PDR), Community of Portuguese Speaking Countries (Brazil and Cabo Verde), and the Pacific (Fiji) (Table 8). The low productivity of workers is due to limited skills, lack of education, and subsistent agriculture.

Table 8. GDP per Worker Employed (PPP), 2023

- Timor-Leste: $10,096
- Indonesia: $28,577
- Brazil: $10,268
- Cabo Verde: $24,917
- Fiji: $34,253
- Lao PDR: $18,493

Source: World Bank, 2023.

Aside from low productivity, around 65% of population (600,000) of Timor-Leste are not active economically (Census 2022). These group of people are not in schools, not pensioners, and deficients.

4.3. Land

Another issue faced by Timor-Leste is low productivity of land. Rice field productivity in Timor-Leste is the lowest compared to other neighboring countries in Asia, such as Indonesia, Bangladesh, Japan and China (Table 9). Timor-Leste's productivity stands at around 1.7 tons/hectare.

Table 9. Rice productivity (2023):

- Timor-Leste: 2.3 tons/ha
- Indonesia: 5.28 tons/ha
- Bangladesh: 4.7 tons/ha
- Japan: 6.8 tons/ha
- China: 7.14 tons/ha.

Source: AI Overview, 2023

Timor-Leste's annual production of rice is 86,000 metric tons of 37,000 ha. Total rice field in Timor-Leste is about 85,000 ha or only cultivate 37,000 ha, less than 50% of potential ricefields in Timor-Leste not used for production.

Timor-Leste has great potential in rice self-sufficiency. There are more than 86,000 potential ha for rice field. But 50% of this potential is used to produce rice. Simply raising production through extension of all 86,000 with productivity raised to 3 ton/ha, Timor-Leste already can be self-sufficient in rice production. Arithmetically, with productivity of 3 tons/ha, and all potential rice fields are used for production then total production in a single harvest is abourt

258,000 tons of husk, which is to 180,000 of (white) rice. This amount already exceeded domestic demand of around 150,000 tons per year.
Deficit in rice consumption, the main staple of East Timorese lead to malnutrition and food insecurity that also affect productivity of Timorese workers. Employment in Timor-Leste is concentrated in low productivity sectors like agriculture (World Bank, 2024).

Agriculture is the key sector to address malnutrition, food insecurity, and food deficit. The sector plays an important role in national development because agriculture can provide food as well as labor to urban areas, create jobs, stabilize prices (reduce inflation), and reduce trade and thus balance of payments deficits.

V. Inequality

Inequality measures how well income is distributed across different groups in a society. Measured by Gini Index with score between 0 and 1. When Gini Index is close zero, income is perfectly distributed. On the other hand, when Gini Coefficient is close to 1, then income is imperfectly distributed. Table 10 shows Gini Index of Timor-Leste at national and for urban and rural areas. At national level, Gini Index is close to 30, which means that income is moderately equally distributed across different groups in the society. This could be attributed to the fact Timor-Leste has low levels of wealth concentration in the hands of large ultra-rich elite class and the economy is not dominated by few powerful business tycoons or larger corporations.

Heavy reliance on oil revenues allowed the government to redistribute income through payment to veterans and disabled groups, Bolsa da Maen (Mother's Scholarship), and direct cash transfers to the population ($200/family). Another factor thay may contribute to relatively even income distribution in Timor-Leste is small private sector with limited industrialization or lack large corporate sector where high-income disparities often exist. Strong traditional and rural economy with large population live in subsistence agriculture.

This can be seen in Table 10 in which income distribution in rural areas is better than income distribution in urban areas of Timor-Leste. Rural areas have Gini Index of around 27, which is lower than urban Gini Index of around 29.

Table 10. Timor-Leste, Gini Index, 2007 - 2014

No.	Gini Index	2007	2014	Note
1	National	27.8	28.7	
2	Urban	29.4	29.1	
3	Rural	26.8	27.4	

Source: Instituto Nacional de Estatistica, Timor-Leste. www.inetl-ip.gov.tl

One caution that Timor-Leste must pay attention is that income distribution is worsened at national level and in rural areas because of the slight increase of Gini Index from 2007 to 2014.

By muncipalities, three municipalities that have Gini Index above national level (Table 11). They are Ermera (the highest) and followed by Oe-Cussi and Dili, the urban center or capital of Timor-Leste. Aileu municipality has the lowest Gini Index of 24.2 well below the national level Gini Index. Perhaps the absence of big businesses, urban elites, and high paying government jobs explain why Aileu Municipality has lowest Gini Index in Timor-Leste.

Overall, distribution of income in Timor-Leste is relatively equal, poverty levels is still high (41.8% in 2014) despite the fact that income distribution is relatively equal and over dependent on a single commodity, namely oil and gas.

Table 11. Gini Index by Districts, 2014

No.	**Municipality**	**Gini Coefficient**	**Note**
1	Aileu	24.2	Lowest
2	Ainaro	26.5	
3	Baucau	25.3	
4	Bobonaro	26.3	
5	Covalima	26.8	
6	Dili	29.8	Above national level
7	Ermera	31.4	Highest
8	Lautem	27.6	
9	Liquica	25.7	
10	Manufahi	24.4	
11	Manatuto	26.5	
12	Oe-Cussi	30.8	Above national level
13	Viqueque	26.2	
	National	**28.7**	

Source: Instituto Nacional de Estatistica, Timor-Leste. www.inetl-ip.gov.tl

Another explanation of relatively equal distribution of income and high poverty rate in Timor-Leste compared to other countries is the absence of outputs from productive sectors, such as agriculture, manufacturing, and services, especially tourism.

VI. Conclusions and recommendations

This paper has tracked economic growth, poverty, and inequality in Timor-Leste in the first quarter century. The main features of these elements low levels of economic growth (1.8%), relative high poverty rates (above 40%), and relatively equal distribution of income over.a quarter century.

Low economic growth may have contributed to large proportion of East Timorese are still being poor. While subsistence agriculture and the absence of modern manufacturing, and small private sector may have contributed to relative equal distribution of income in the same period.

One caveat must be pointed out is that the figures of poverty and inequality are decade old figures. Therefore, one cannot conclude that Timor-Lese's poverty has worsened (or improved) and or whether Gini Index improved.

The key recommendation for Timor-Leste is to promote economic growth agriculture, manufacturing, and services sectors. GDP growth must be above 5% per annum but sustained ovewr along period of time such that growth canl contribute to reduce poverty.

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