Prepared for

LEADERSCLUB

by LEBANON OPPORTUNITIES

Mission impossible

Estimating GDP $40+ billion in 2024

INFOPRO

InfoPro has estimated that the GDP for 2024 exceeds $40 billion.

The figure does not take into account the municipalities' expenditures that rely on direct levies, changes in the consumption of jewelry, precious stones, and precious metals (including gold), as well as at least a ten percent cash economy activity, because there are not reliable data to estimate them. They may very well amount to an additional $5 billion.

Our estimate is much higher than estimates by international organizations which range from $26 billion (World Bank) and $28 billion (IMF) to $32.8 billion (Institute of International Finance, IIF). (*see Appendix A*). These figures have been challenged by leaders in the Lebanese private sector and independent analysts, who argue that the published estimates significantly underestimate the true scale of the economy.

InfoPro has examined various sources of data and conducted field research. The results of its efforts led to a higher GDP valuation. The aim is not to replace a more rigorous and much-needed official calculation, typically conducted by the State, but rather to demonstrate that current GDP estimates by international organizations need another look – based on a more rigorous methodology.

Nominal GDP is typically calculated using three approaches *(see Appendix B)*: Expenditure, Value-Added, and Income. In Lebanon, the Central Administration of Statistics (CAS) uses the Expenditure and Value-Added approaches. For this analysis, the 'Expenditure Approach' is used, as its data components are the only ones that are readily available or currently possible to estimate.

The GDP for 2018, as calculated by CAS in its National Accounts, is used as a baseline. The value for 2024 was calculated through determining variation of its components from 2018 using existing data or estimating it using proxies. The variations used are based on actual figures or proxy figures from reliable published data or estimated by conducting interviews with key figures in each sector.

GDP at market prices

	2018	2024
	54.9	**40.3**
1. Total final consumption expenditure	**57.2**	**43.3**
1.1 by households	48.8	39.3
1.2 by government	8.4	4.1
2. Gross capital formation	**12.3**	**9**
2.1 Gross fixed capital formation	12	8.6
2.1.1 private	11	8.1
2.1.2 public	1	0.5
2.2 Changes in inventories	0	0
2.3 Acquisition less disposal of valuables	0.4	0.4
3 Net export	**-14.7**	**-12**
3.1 Export of goods and services	**11.4**	**6.7**
3.1.1 Export of goods (fob)	3.7	2.8
3.1.2 Export of Services	7.7	3.9
3.2 less Import of goods and services	**26.1**	**18.7**
3.2.1 Import of goods (fob)	19.8	15.1
3.2.2 Import of Services	6.3	3.6

An arduous undertaking

The reason for the differences in GDP estimates with international organizations is that economics is a social not an exact science. Moreover, pertinent data is not always readily available especially in the case of Lebanon. The Central Administration of Statistics (CAS) said in its Lebanese 2018 National Accounts report: "All statistics are subject to uncertainty; the estimates can only be approximations to the true values. This is particularly true of the national accounts. Because they depend on many sources and assumptions, in the case of national accounts there is no objective measure of accuracy and range of uncertainty." More detailed estimates, in particular, should be considered as impressionistic rather than of an accuracy normally expected in accounts, according to CAS. This is not confined to Lebanon, as many comparable countries are facing similar challenges.

CAS said in its Lebanon National Accounts 2011-Data Sources and Compilation Methods: "In a small economy, the resources that can be allocated to compiling economic statistics are limited. It is therefore imperative to exploit all possible existing sources of data. Some surveys are essential, to supplement administrative sources, but they are disproportionately costly when compared with those carried out in large economies."

1. Detailed calculation of GDP components

1.1. Consumption

1.1.1. Household consumption

The composite proxy indicator shows that consumption expenditure by households in 2024 represents 80.4 percent of its value in 2018 and therefore it is estimated at $39.3 billion *(see below for detailed calculations).*

In order to determine the 2024 figures, in the absence of direct data and direct indicators about the components of consumption expenditure by households, changes in proxy indicators over the period 2018-2024 are used.

The components of the consumption basket (adopted by CAS to estimate the consumer price index) are used. The weight given by CAS to each of these components is maintained. Changes between 2018 and 2024 in each of the components are estimated based on various sources including research reports and key informant interviews (KIIs) with knowledgeable people in different sectors and in various business associations. A composite proxy indicator is constructed from these proxies.

Residual amount

Direct data about almost all components of household consumption is lacking, for this reason it is measured indirectly as a residual in the National Accounts. CAS said in Lebanon National Accounts 2011-Data Sources and Compilation Methods: "In the absence of information…, the estimates of household final consumption are obtained as a residual by subtracting the other components from the estimates of GDP. Thus, this component is the least reliable as it contains all the errors and omissions in the estimates of GDP and the other expenditure components (for example, but not only, changes in inventories)." Household budget surveys (HBSs) are expensive and few countries can afford to conduct them every year, the latest one carried out in Lebanon was in 2011-2012.

Due to unavailable data, this report estimates final consumption expenditure by households (that include NGOs) by using changes in proxy indicators that mirror changes in consumption between 2018 and 2024. The change is estimated for each category of consumer goods and services according to the components of the consumption basket adopted by CAS to estimate the consumer price index (CPI).

"With currently available data (and for the foreseeable future) it is not possible to compile meaningful accounts for the non-financial corporate sector, for households and for non-profit institutions separately. Even if the data could be obtained, it is doubtful whether the benefits of attempting to compile such accounts in Lebanon would exceed the costs," CAS said in Lebanon National Accounts 2011-Data Sources and Compilation Methods.

The report uses the weight given by CAS to each of these components and which corresponds to the share in total consumption of the related component. When hard data is not available, estimates are used from research reports and interviews with key informant interviews (KIIs) with knowledgeable people in business associations and large companies in some sectors.

Resorting to data about indirect taxes on goods and services, including VAT, to estimate part of household expenditure, is unachievable, as the Ministry of Finance's latest regular reports about actual spending and realized revenues were released in 2021.

The composite proxy indicator shows that consumption expenditure by households in 2024 represents 80.4 percent of its value in 2018 and therefore it is estimated at $39.3 billion.

Household expenditures changes

		Values	
	Weights	2018	2024
Food and non-alcoholic beverages	20.0	100	60
Alcoholic beverages, tobacco	1.4	100	60
Clothing and footwear	5.2	100	65
Housing, water, electricity, gas and other fuels	28.4	100	87
Furnishings, household equipment and routine household maintenance	3.8	100	73
Health	7.7	100	115
Transportation	13.1	100	85
Communication	4.5	100	80
Recreation, amusement, and culture	2.4	100	70
Education	6.6	100	95
Restaurant & hotels	2.8	100	50
Miscellaneous goods & services	4.1	100	92
Index	**100**	**100**	**80.4**

Food and non-alcoholic beverages

Calculation

- Food and non-alcoholic beverages turnover has dropped by 40%

Sources: KIIs with retailers

Alcoholic beverages, tobacco

Calculation

- Alcoholic beverages, tobacco turnover has dropped by 40%

Sources: KIIs with retailers

Clothing and footwear

Calculation

- Clothing and footwear turnover has decreased by 30% - 40% (KIIs)
- Import of clothes and footwear has decreased by around 34%
- Estimation: reduction of 35%

Sources: KIIs with traders' committees, and Comtrade figures on clothes and footwear import

Housing, water, electricity, gas and other fuels

Calculation

- Fuel import remained nearly unchanged
- Demand for water has not significantly changed.
- Rental value has dropped by 30%-40%
- The total change is a 13% decrease when weighted according to CAS CPI sub-classes weights

Sources: InfoPro surveys, CAS and Comtrade

Furnishings, household equipment and routine household maintenance

Calculation

- Household equipment sales have decreased by 50%. Meanwhile, household equipment import has dropped by 44%.
- Furnishings import has dropped by 30%
- Cleaning products sales have dropped by 40%
- Maintenance of households' equipment and furniture has increased by 20%
- The total change is a 27% decrease when weighted according to CAS CPI sub-classes weights

Sources: KIIs with retailers, Comtrade figures on furnishing and household equipment and CAS

Health

Calculation

- Pharmaceutical products import is nearly unchanged
- Medical services have increased by 10% (Benefits paid by Health Insurance used as a proxy)
- Hospital services fees have increased by 50%, however households cut their medical expenses by 30% in 2023
- The total change is a 15% increase when weighted according to CAS CPI sub-classes weights

Sources: Lebanon Poverty and Equity Assessment - World Bank 2024, CAS and KIIs with Association of Insurance Companies in Lebanon (ACAL) and Hospitals.

Transportation

Calculation

- Gasoline import has slightly increased (2%)
- Used car import has decreased by 50%
- New car import has decreased by 70%
- Spare part import has decreased by 17%
- Maintenance expenses of cars have increased by 20%
- Number of airport passengers has decreased by 36%
- The total change is a 15% decrease when weighted according to CAS CPI sub-classes weights

Sources: Comtrade figures on gasoline, cars and spare parts import, KIIs with importers of used cars and importers of new cars, Beirut Airport figures on number of passengers, InfoPro estimation of maintenance costs, and CAS.

Communication

Calculation

- Internet prices have decreased by 77%
- Internet consumption has increased by 164%
- Postal services are nearly unchanged
- Import of telecommunication devices has increased by 10%
- The total change is a 20% decrease when weighted according to CAS CPI sub-classes weights

Sources: KIIs with Internet Service Providers (ISPs), Comtrade figures on import of telecommunication devices, InfoPro's estimation of Internet prices and consumption

Recreation, amusement, and culture

Calculation

- Sales of household electronics have decreased by 50%
- Import of musical instruments has decreased by 61%
- Toys import has decreased by 4%
- Import of gym equipment for household use has decreased by 32%
- Cinema attendance figures have decreased by 20%
- Import and sales of stationery and textbooks are nearly unchanged
- Import of other books has decreased by 56%
- Import of newspapers has decreased by 83%
- Other expenses like pet expenses and lottery are nearly unchanged
- The total decrease is 30% when weighted according to CAS CPI sub-classes weights

Sources: Comtrade figures on toys, Gym equipment, musical instrument, books, newspapers, KIIs with retailers and movie theaters

Education

Calculation

- Student distribution didn't change across Public and Private schools
- Students' tuitions are nearly unchanged
- Estimation 5% decrease
- Reduction reflecting the affordability shock from the dollarization of private school fees, forcing many families to pull children from schools, thus decreasing their real expenditure

Sources: CRDP, UNICEF

Restaurant & hotels

Calculation

- The hospitality sector market size has decreased by 67% (In 2018 it was $6 billion, in 2024 it is $2 billion)
- Estimation: 50% decrease

Sources: KII with the Syndicate of Owners of Restaurants, Cafés, Night-Clubs & Pastries

Miscellaneous goods & services

Calculation

- Sales of personal hygiene items have dropped by 40%
- Sales of personal hygiene electrical devices have dropped by 50%
- Health, life, car and property insurance premiums have increased by 10%
- Sales of other goods and services are nearly unchanged
- The total change is an 8% decrease when weighted according to CAS CPI sub-classes weights

Sources: KIIs with retailers, CAS

1.2 Government's consumption expenditure

Consumption expenditure by the government is equivalent to the total actual public budget after deducting debt principal repayments, Treasury withdrawals (except transfers to municipalities), carryover expenditure from the previous year, and capital expenditure.

Debt repayments and Treasury withdrawals are excluded because they are transfers, not expenditure.

Capital expenditure (CapEx) is equivalent to gross fixed capital formation in the public sector and is featured separately in the estimation of the GDP.

The Ministry of Finance's disclosure of the 2024 actual budget is concise. It lacks a breakdown between consumption expenditure and CapEx which is estimated based on the 2024 budget plan (10.4 percent of total expenditure).

The resulting total final consumption expenditure by the government (after the deductions) for 2024 amounts to $4.1 billion and represents 48 percent of its value in 2018.

Detailed CAS calculation of 2018

Government consumption expenditure (USD billion)	
Total cash out (Expenditure + Treasury withdrawals)	**17.8**
Less budget expenditures from previous years	-1.4
Less interest payments	-5.4
Less foreign debt principal repayment	-0.2
Less Treasury withdrawals	-1.4
Total Current Expenditure + CapEx	**9.4**
Less CapEx	1.0
Government Consumption Expenditure	**8.4**

Total final consumption expenditure by the government for 2024

Item	Amount (USD billion)	Notes
Total budget spending (2024)	**4.5**	As announced by MoF
Less CapEx	0.5 (10.4% of 4.5)	Estimated (based on 2024 budget plan)
Government consumption expenditure (2024)	**4.1**	

2. Gross capital formation

2.1. Fixed capital formation

2.1.1. Private sector

Fixed capital formation in 2024 is estimated at $8.1 billion and represents 73 percent of its value in 2018.

Gross fixed capital formation in the private sector consists of new residential and commercial buildings constructed during the covered year and new capital investments by businesses in machinery, equipment, vehicles, and other fixed assets. To measure the change from 2018 to 2024, a composite proxy indicator is used, containing changes in cement deliveries to gauge the scale of construction activity and the import of capital goods (machinery, etc.) to measure capital expenditure by businesses.

Cement

Changes in cement deliveries mirror changes in construction activity in the private sector. CAS said in its Lebanon National Accounts 2011-Data Sources and Compilation Methods: "...there is no direct information on the total value of construction work, most of which is informal." In order to determine the amount of cement specifically used in construction activity in the private sector, the quantity allocated to public sector projects is excluded as well as the cement exported (legally or smuggled) outside the country. According to key people in the sector, in 2018, the share of public works was around 20 percent of total cement deliveries and smuggling represented ten percent of the total while in 2024, public works projects were almost nonexistent and smuggling was negligible. This means that in 2024, practically the total amount of cement deliveries was used in construction projects in the private sector compared to 70 percent in 2018. Cement deliveries in 2018 and 2024 were measured in dollar terms according to cement prices that were prevalent during these years.

Distribution of cement deliveries

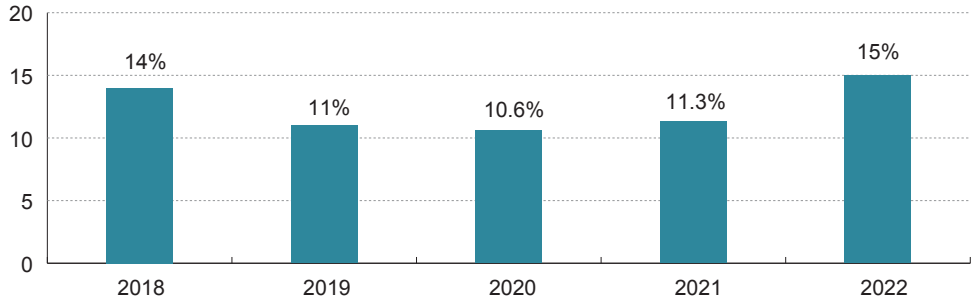
	2018	2024
Public works share	20%	0
Smuggling	10%	0
Private construction share	70%	100%

	2018	2024
Total cement deliveries (million tons)	4.7	2.2
Percentage allocated to the private sector	70%	100%
Cement deliveries to construction projects in the private sector (million tons)	3.3	2.2
Prices (USD)	85	82
Cement deliveries (USD million) to private sector projects	**280**	**182**

Import of capital goods

The change in import of capital goods over the period 2018-2024 is a proxy of the evolution of capital expenditure of businesses. The latest available data of the World Integrated Trade Solution (WITS) (see Appendix C for detail on WITS) is for 2022. In order the estimate their value in 2024, the share of capital goods in total annual import for the period 2018-2022 is used. This share started a downtrend with the onset of the crisis in 2019, hit a bottom in 2020, the year of the peak of the crisis, and Covid-19 pandemic in addition to the Port Explosion, then it rebounded to reach 15 percent in 2022 exceeding its level in 2018. It is assumed that this percentage plateaued in 2023 and 2024. The output of the manufacturing sector has remained basically the same in 2024 compared to 2018, according to the Association of Industrialists. This could explain the fact that import of capital goods in 2024, estimated at $2.6 billion, represented as much as 91 percent of their pre-crisis levels.

Share of capital goods in total imports



Source: World Integrated Trade Solution, calculation of the percentages by InfoPro

Total import in 2024 (USD billion)	16.9
Share of capital goods in total import	15%
Estimated import of capital goods in 2024 (USD billion)	2.6

Gross fixed capital formation-Private sector

	2018	2024	Change 2024/2018	Weights	Weighted change 2024/2018	Capital formation	
Cement deliveries (USD million)	280	182	0.65	0.68	0.44		
Import of capital goods	2.8	2.6	0.91	0.32	0.29	2018	2024
Proxy				1	**0.73**	**11**	**8.1**

The weights given to cement deliveries and capital goods are based on the average share of each category in total capital formation. Available data is for the period 1997-2010 (Source: Databank/InfoPro)

2.1.1. Public sector

Gross fixed capital formation in the public sector consists of the government's capital expenditure (CapEx). MoF's disclosure about the 2024 actual budget didn't specify the CapEx amount. For this reason, it was estimated on the basis of the 2024 budget plan which set CapEx at 10.4 percent of total expenditure.

Total expenditure		Capital formation
$4.5 billion	**10.4%**	**$473 million**

2.2. Changes in inventories

CAS doesn't estimate changes in inventories due to the lack of data and because the impact of this component on GDP is minimal. According to the CAS report Lebanese 2004-2011 National Accounts – Data Sources and Compilation Methods, data is not regularly available on changes in inventories and estimates would have to be based on judgments about the likely changes, in relation to other components. CAS said in the report: "In principle, for activities where finished goods are stocked or work is in progress, an adjustment should be needed for such changes in the inventories, but reliable information on inventories is not usually easily available and the effect on GDP is small."

2.3. Acquisition less disposal of valuables

According to the United Nations System of National Accounts, which is followed by CAS, "valuables are expensive durable goods that do not deteriorate over time, are not used up in consumption or production, and are acquired primarily as stores of value." CAS does not disclose how it estimates the item 'acquisition less disposal of valuables' which consists of gold ingots in the case of Lebanon. As these estimates are highly uncertain, the 2018 figures were kept unchanged especially that this item is small (0.7 percent of GDP in 2018) and doesn't have a significant impact on GDP.

3. Net export of goods and services

Net export represents the balance of trade in both goods and services. It is calculated by subtracting total import of goods and services from total export. The net export balance is typically negative in Lebanon due to the chronic huge deficit in the trade of goods. This deficit largely offsets the frequent surpluses in the trade in services. All actual figures for computing net export for 2024 are available. They are provided by the Customs authorities and the Central Bank (BDL).

The 2024 trade in goods statistics as reported by Customs have been adjusted in line with Comtrade data *(see Appendix C for details on Comtrade)* to factor in underreporting. This is because the 2024 Comtrade figures were not yet fully published (at the time of writing this report). Underreporting could be in terms of price, HS code, or quantity.

Estimating import and export of services is also problematic as there is a large discrepancy between estimates published by BDL and those made by CAS. Services include mainly transportation, travel, and insurance services and to a lesser extent communication services, construction services, financial services, and computer and information services. According to CAS, changes made to the methodology used by BDL since 2009 rendered its trade in services data unusable in the context of the national accounts. CAS said: "The whole area of trade in services ("invisible trade") needs improvement, and this will only be possible through a program of targeted surveys to be conducted by CAS in the future when the necessary resources would be available." CAS adjusts export and import of travel services as estimated by BDL by reducing them substantially. Export of travel services consists of spending in Lebanon by inbound visitors. Import of travel services is made up of spending by Lebanese travelers abroad.

3.1. Export

3.1.1. Export of Goods

Export figures concerning precious metals (including gold) and precious stones including finished jewelry (thereafter G+PS) are suspect. A ratio (2018 vs. 2024) is calculated for the change in Export of Goods excluding G+PS. The G+PS of 2018 is then added to the resultant 2024 Export of Goods. This allows the measurement of the real change in exports of goods without distortion from the G+PS figures.

To align the 2024 Customs export figures with those reported by Comtrade, an adjustment ratio was calculated by dividing Comtrade's 2023 export figures by the corresponding Customs figures. This is because the 2024 Comtrade figures are not yet completed. The 2024 Customs figure for each category is multiplied by the corresponding ratio in order to obtain the adjusted data. Total export is computed by adding all adjusted figures.

Export of goods (USD million)

	2018		2023		2023	2024	
	Customs	Comtrade	Customs	Comtrade	Comtrade/ Customs	Customs	Customs adjusted to Comtrade
Export excluding gold & precious stones	2,304	2,466	2,235	2,279	1.02	2,135	2,177
Gold	289	150	326	201	0.6	277	171
Other precious stones & jewelry	359	735	434	915	2	295	622
Total	**2,952**	**3,352**	**2,995**	**3,395**	**1.1**	**2,707**	**2,969**

Real export 2024	**2,177**
G+PS 2018	**648**
Total	**2,825**

3.1.2. Export of Services

Data for the 2024 'Export of Services' is published in BDL's balance of payments report. In order to align BDL's figures with those of CAS, a ratio is created by dividing 'Export of Services' as reported by CAS by the BDL corresponding figures. Available data for 2019, 2020, and 2021 allows the calculation of ratios for these years, then an average ratio is computed. Adjusted 'Export of Services' is calculated by multiplying BDL's 2024 figure by the average ratio.

	2019	2020	2021	Average ratio
Export of Services-CAS (LL billion)	9,624	10,786	43,104	
Exchange rate*	1,585	3,880	12,414	
Export of Services-CAS (USD billion)	6.1	2.8	3.5	
Export of Services-BDL (USD billion)	13.6	4.9	5.7	
Ratio	0.4	0.6	0.6	**0.5**

**Sources: 2019 InfoPro, 2020 and 2021 CAS*

	2024 (BDL)	Ratio	2024 (adjusted)
Export of Services- (USD billion)	7.2	0.5	3.9

3.2. Import

3.2.1. Import of goods

The same methodology is used as that applied to export of goods.

Import of goods (USD million)

	2018		2023		2023	2024	
	Customs	Comtrade	Customs	Comtrade	Comtrade/ Customs	Customs	Customs adjusted to Com-trade
Real import	18,728	18,422	14,998	14,456	0.96	14,330	13,840
Gold ingots	687	359	2,089	1,156	0.6	2,228	1,233
Other precious stones & jewelry	565	1,193	437	1,519	3.5	344	1,195
Total	**19,980**	**19,975**	**17,524**	**17,131**	**0.98**	**16,902**	**16,269**

Real imports 2024	**13,840**
G+PS 2018	**1,252**
Total	**15,092**

3.2.1. Import of Services

The same methodology is used as that applied to export of services.

	2019	2020	2021	Average ratio
Import of Services-CAS (LL billion)	9,014	11,312	39,653	
Exchange rate*	1,585	3,880	12,414	
Import of Services-CAS (USD billion)	5.7	2.9	3.2	
Import of Services-BDL (USD billion)	13.1	4.8	4.9	
Ratio	0.4	0.6	0.6	0.6

**Sources: 2019 InfoPro, 2020 and 2021 CAS*

	2024 (BDL)	Ratio	2024 (adjusted)
Import of Services- (USD billion)	6.4	0.6	3.6

Appendix A
GDP Estimations since 2018

	GDP Estimates (USD billion)			
	World Bank	IMF	IIF	Range
2018	54.9	54.9	54.9	54.9
2019	51.6	50.9	53.2	50.9-53.2
2020	31.7	25	25	25-31.7
2021	23.1	19.8	19.8	19.8-23.1
2022	21	24.7	24.9	21-24.9
2023	20.1	23.6	24.3	20.1-24.3
2024	26	28.3	32.8	26-32.8

Methodologies

World Bank
The World Bank uses several approaches to estimate GDP, including Nigh-time Lights and econometric modeling.

The Night-time Lights (NTLs) method refers to satellite imagery capturing artificial light visible from the Earth's surface during nighttime. These lights, often collected by satellites, measure light intensity from cities, towns, infrastructure, and economic activity. The World Bank uses NTLs as a proxy for economic activity, especially in countries or regions with incomplete or unreliable national accounts and conflict zones. It correlates light intensity and economic output. The more light, the higher the GDP. NTLs capture cities better than rural areas. Bright areas (like Beirut) may saturate sensors and mask changes. Non-economic light sources such as streetlights may skew readings. Power cuts may reduce NTLs even if informal or underground economy is still active.

Data from thirteen high-frequency indicators (HFIs) for the entirety of 2024 has provided insights for GDP estimation. The bank used econometric models that leverage the informational value of these HFIs. Econometric models have also been used to estimate economic growth since the 2019 financial crisis. They include: Mixed Data Sampling (MIDAS) regressions with a large set of HFIs, a dynamic factor model, neural networks, and more recently elastic net and Least Absolute Shrinkage and Selection Operator (LASSO) regressions.

IMF

The IMF uses a country-team driven 'bottom-up' approach, complemented by global consistency checks. IMF staff assigned to Lebanon collects and prepares national accounts and macroeconomic indicators. They draw on local data, where available, and apply staff estimates when official statistics are incomplete. These figures are then used to project growth and GDP components. To ensure comparability across countries and convergence of aggregates, the forecasts are constrained using globally consistent baseline assumptions: Real effective exchange rates are assumed constant over a recent reference period and oil prices are set at assumed futures-market levels, in addition to interest rate assumptions. GDP and fiscal data are staff estimates, not provided by the authorities. The IMF states that projections for Lebanon's GDP beyond 2023 (i.e. for 2024–25) are omitted, due to "an unusually high degree of uncertainty". The figures provided are estimates by IMF staff.

IIF

The Institute of International Finance (IIF) does not rely on official national accounts when estimating Lebanon's GDP. They use a scenario-based macroeconomic forecasting approach, blending qualitative assumptions with quantitative modeling. The IIF constructs economic trajectories under different scenarios, reflecting varying levels of reform and political stability. GDP estimates are informed by observable indicators and banking sector trends, especially critical in Lebanon's heavily dollarized, informal economy. When calculating nominal GDP for 2024, IIF cited internally derived estimates factoring in the rapidly expanding cash economy that conventional statistics miss. IIF's models refer to historical baselines (pre-crisis 2019 GDP), comparing against severe contractions, followed by recovery paths defined by each scenario's assumptions. Although details can be sparse, the IIF aggregates sector-level outlooks (e.g. tourism, remittances, reconstruction spending) to form overall GDP paths within its scenarios.

Appendix B
Methods to calculate GDP

Approach	Measures	Main Components
Production	Value added in production	Output – Intermediate consumption
Expenditure	Total spending on final goods	C + I + G + (X – M)
Income	Total income earned from production	Wages + Rent + Interest + Profits + Taxes – Subsidies

1. Production (or Output or Value-Added) Approach
GDP = Σ (Gross Value of Output – Value of Intermediate Consumption)

- Measures the total value added at each stage of production across all sectors.
- Often calculated by summing the value added by all industries and institutions (agriculture, manufacturing, services, etc.).
- Used extensively in national accounts.

✹ **Example:** A bakery sells bread for $100, flour costs $30 → Value added = $70

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2. Expenditure Approach
GDP = C + I + G + (X – M)

- **C** = Consumption (household spending)
- **I** = Investment (business investments, inventories, housing)
- **G** = Government spending
- **X** = Export
- **M** = Import
- Measures the total spending on final goods and services within an economy.
- This is the most commonly cited formula in textbooks and public discourse.

✹ **Example:** If households, businesses, and government spend $100 billion, and net export is $5 billion → GDP = $105 billion

3. Income Approach

GDP = W + R + i + π + T – S

- **W** = Wages (compensation of employees)
- **R** = Rent (income from land)
- **i** = Interest
- **π** = Profits (corporate and proprietors' income)
- **T** = Taxes on production and import
- **S** = Subsidies
- Adds up all factor incomes earned in the production of goods and services.

✹ **Example:** If total wages, rents, profits, etc., amount to $90 billion, and taxes minus subsidies add $10 billion → GDP = $100 billion

Appendix C
COMTRADE and WITS

COMTRADE
Official trade data (import and export) provided by Customs and used by international organizations in their various calculations, including GDP, are not accurate. Fraud in value declaration and contraband that bypasses Customs altogether render these official figures unreliable.

The alternative is to use data provided by the UN Comtrade database which is the world's most extensive source of international trade data. Maintained by the United Nations Statistics Division, it compiles detailed annual and monthly trade statistics by product and trading partner, covering around 200 countries and accounting for over 99% of global merchandise trade. Widely used by governments, researchers, academic institutions, and businesses, the platform allows users to access and export data in multiple formats.

By comparing Comtrade data with that of CAS for the year 2018, there is a difference in import figures and difference in export.

WITS
The World Integrated Trade Solution (WITS) is a trade analysis tool developed by the World Bank that provides access to multiple international trade databases. It enables users to explore detailed data on exports, imports, re-exports, and re-imports from the UN's official trade statistics (UN Comtrade). WITS also integrates tariff and non-tariff measure data from UNCTAD's TRAINS database, applied and bound tariff information from the Integrated Database of the World Trade Organization (WTO), and consolidated tariff schedules covering all WTO member countries.