Lahore School of Economics

Innovation &
Technology Centre

State of Pakistan Economy Report No. 02-2023

State of the Pakistan Economy

Estimates of Annual Growth in Pakistan

Financial Year 2023

LAHORE SCHOOL OF ECONOMICS

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Executive Summary

GDP Growth Estimates for Fiscal Year 2023

The Lahore School of Economics macro model for the Pakistan economy projects that GDP growth over the fiscal year July 2022 – June 2023, (FY 2023), will be 0.05%. This flatline estimation for the annual growth rate of GDP for FY 2023, has been due to successive quarters of falling GDP growth.

Our estimation of GDP growth is comparable to GOP's estimate of GDP growth for FY 2023 of 0.3%. The IMF has a lower estimate for FY 2023 of -0.5%. The Asian Development Bank and the World Bank have higher estimates for FY 2023 of 0.6% and 0.4% respectively.

Our model's estimates show that the flood damage to lives, livelihoods and incomes, over the first quarter (Q1) of the fiscal year, from July to September 2022, has taken a devastating toll.

This loss has been followed in quarters two, three and four (Q2, Q3, Q4) by sectoral growth being hit by import constraints and economic uncertainty. A Balance of Payments (BOP) crisis, with a depreciating exchange rate, and falling Reserves for the State Bank of Pakistan (SBP), have resulted in these import constraints, especially weakening manufacturing growth. The coefficient for the import content of capital goods, intermediate goods, and energy, contributing to value added in manufacturing being quite high.

Giving two supply shocks in all.

Our model also uniquely estimates supply shocks, which can be positive or negative, and which then feed into demand shocks. To give a final change in GDP for FY 2023.

On the demand side, the first shock for the four quarters of FY 2023, is the reduced income from the supply shock, feeding into reduced demand.

The second demand side shock, in Q1, Q2, plus much of Q3, for this FY 2023, has been a continued drop in the Current Account (CA) balance. The CA balance has been in deficit, despite the fall in imports, based on a fall in export demand. With the first seven months of successively observed deficits, ranging between $0.2 billion and $1.2 billion. Only over the last five months of FY 2023 has the CA broken even or run a surplus. So, the CA for the full FY 2023 still runs a deficit estimated at $2.56 billion.

These twin demand shocks, add to the twin supply shocks, of the floods, and the import constraints, to flatline our model's estimation of GDP growth for FY 2023.

The unique estimation of the supply cum demand shocks, accounts for the difference between our estimation of 0.05%, and others.

So, output in fiscal year 2022-2023 as compared to output in fiscal year 2021-2022 gives annual GDP growth for FY 2023 for Pakistan of 0.05%.

Inflation for the Fiscal year 2023

Inflation for FY 2023 is estimated by our model at 33.3%. This is year on year, for FY 2023, compared to FY 2022.

Our estimate of inflation at 33.3% for FY 2023, is quite comparable to GOP's estimate of 29.0%.

Our model estimates inflation as being driven by four factors. An output gap. The budget deficit. Depreciation of the exchange rate. And global commodity prices.

For FY 2023, the overwhelming driver of inflation has been the huge depreciation of the exchange rate. By some 51% as observed over the four quarters of FY 2023. Contributing to near three quarters of the inflation rate.

The second major driver of inflation for FY 2023 has been the fiscal deficit. Projected to be 5.0% over the fiscal year.

Global commodity prices, from being the major contributor to inflation over FY 2022, have eased completely over FY 2023. Growing at just 2.04% over the fiscal year.

GDP Growth and Inflation Projections for the Fiscal Year 2024

Our model also makes a projection for GDP growth for FY 2024, of 2.71%.

This projection is based on easing some of the supply and demand shocks observed over FY 2024.

These are the easing of the supply shocks, the black swan event of the shock to agriculture, and the import constraint shock to manufacturing.

And some easing of the demand shocks, primarily a buildup of foreign exchange reserves, enabling a higher level of imports of energy, capital goods and intermediate goods, to ease the constraint on manufacturing.

Our model projects that inflation will ease some over FY 2024, to 25.39%. Largely on the back of some easing in the depreciation of the exchange rate.

GOP Emergency Economic Policy over FY 2023

The cusps of economic regimes in Pakistan, repeatedly generate the twin whammies of fiscal sustainability and sustainability of the Current Account. This time round, a third whammy has been added, of stagflation. Plummeting GDP growth and spiraling inflation. Both fed, as our model has shown, by the fourth whammy for good measure, of a viciously depreciating exchange rate.

So, GOP faces a flatlined growth rate of 0.05% over FY 2023. Its forex reserves have dwindled to approximate $4.5 billion, giving barely a month's worth of imports.

GOP's immediate fiscal stance to regenerate GDP growth, or provide additional welfare, is extremely limited, in abiding with the terms of the new agreement with the IMF, of an SBA of $3 billion, for nine months.

The alternative of fiscal reforms, to raise taxation above 12% of GDP, and cap spiraling energy leakages which have been pushing up expenditures, are the elephant in the policy room. The current economic regime has not attempted any comprehensive reforms in this budget for FY 2024.

So, absenting fiscal reforms, has only left GOP monetary policy to generate growth and support welfare. Monetary policy however is primarily occupied with controlling inflation raging at 33.3% per annum. Largely using the demand side policy instrument of the interest rate, rising from 15% to peak at 22% over FY 2023. But with no visible impact on inflation rising from 16% to peak at 33% over this same period of FY 2023.

Which does not make the demand side policy instrument of interest rates unnecessary. But it does show it to be insufficient.

Because, our model shows that three quarters of this inflation rate is being contributed to by the massive supply side cost push, of depreciation of the exchange rate.

Which gives GOP two almost existential, policy objectives for the immediate short run, but with tight constraints on the policy instruments it may use.

1) To arrest the depreciation of the exchange rate urgently.

   (a) But within the working of a market equilibrium. That is, without the use of import controls as agreed with the IMF. And which are shown here to lower GDP growth.

   (b) Without intervening in the exchange rate market to prop up the Rupee. And for which in any case the State Bank of Pakistan (SBP), has no reserves left to draw down, in open market operations.

2) Maintenance and increase of the reserves of the SBP, above the current rock bottom levels of $4.5 billion, without:

   (a) Again, import controls.

   (b) Raising the interest rate much higher above the current, already prohibitive cost of borrowing of 22%. Which would otherwise leave GDP growth flatlined over FY 2024.

The only short run policy solution appears to be to tighten capital controls. To reduce outflows on the KA. This would work around intervening in the CA through import controls.

The IMF also anticipates that as interest rates rise in Advanced Economies (AEs), and there is capital flight to quality from Developing Countries (DCs), for capital controls in DCs to go up. Which policy option GOP could explore, while keeping within the ambit of the SBA. For the record, the IMF has countenanced capital controls since the Asian Financial Crisis.

State of the Pakistan Economy

Estimates of Annual Growth in Pakistan

Fiscal Year 2023

GDP Growth Estimates for Fiscal Year 2023

The Lahore School of Economics macro model for the Pakistan economy projects that GDP growth over the fiscal year July 2022 – June 2023, (FY 2023), will be 0.05%, (Table 1). This flatline estimation for the annual growth rate of GDP for FY 2023, has been due to successive quarters of falling GDP growth.

Table 1: Estimates for GDP Growth Rate FY 2023

	FY 2022	FY 2023
GDP ($ bn) Supply plus Demand Shock Y (S+D)	**369.01**	**369.21**
C		266.67
I		59.92
G		46.62
NXn		-2.56
Growth Rate (%)		**0.05**

Source: Lahore School Modeling Lab Estimates, 2023

Our estimation of GDP growth is comparable to GOP's estimate of GDP growth for FY 2023 of 0.3%, (Table 2). The IMF has a lower estimate for FY 2023 of -0.5%. The Asian Development Bank and the World Bank have higher estimates for FY 2023 of 0.6% and 0.4% respectively.

Table 2: Comparable Growth Rate Estimates FY 2023

GOP	**0.3%**
IMF *(April, 2023)*	**-0.5%**
World Bank *(June, 2023)*	**0.4%**
Asian Development Bank *(April, 2023)*	**0.6%**

Source: WEO, IMF (July, 2023), Global Economic Prospects, World Bank (June, 2023), Asian Development Outlook (ADO) (April 2023)

Our model's estimates show that the flood damage to lives, livelihoods and incomes, over the first quarter (Q1) of the fiscal year 2023, from July to September 2022, has taken a devastating toll.

This loss has been followed in quarters two, three and four (Q2, Q3, Q4) by sectoral growth being hit by import constraints and economic uncertainty. A Balance of Payments (BOP) crisis, with a depreciating exchange rate, and falling Reserves for the State Bank of Pakistan (SBP), have resulted in these import constraints. Especially weakening manufacturing growth. The coefficient for the import content of capital goods, intermediate goods, and energy, contributing to value added in manufacturing being quite high.

The flood damage, and the import constraints cum economic uncertainty, give two supply shocks in all.

Our model uniquely estimates such supply shocks, which can be positive or negative, and which then feed into demand shocks. To give a final change in GDP for FY 2023.

On the demand side, the first shock for the four quarters of FY 2023, is the reduced income from the supply shock, feeding into reduced demand.

The second demand side shock, in Q1, Q2, plus much of Q3, for this FY 2023, has been a continued drop in the Current Account (CA) balance. The CA balance has been in deficit, despite the fall in imports, based on a fall in export demand. With the first seven months of successively observed deficits, ranging between $0.2 billion and $1.2 billion. Only over the last five months of FY 2023 has the CA broken even or run a surplus. So, the CA for the full FY 2023 still runs a deficit estimated at $2.56 billion.

Table 3: Current Account Balance, 2023

Million US$	**FY 23**
Exports-Goods	27,911
Exports-Services	7,299
Primary Income Credit	860
Total Exports	**36,070**
Imports-Goods	51,994
Imports-Services	8,019
Primary Income Debit	6,579
Total Imports	**66,592**
Exports-Imports	-30,522
Remittances	27,965
Current Account Balance	**-2,557**
Foreign Exchange Reserves	**4,466.5**

Source: SBP, 2023

These twin demand shocks, add to the twin supply shocks, of the floods, and the import constraints, to flatline our model's estimation of GDP growth for FY 2023.

The unique estimation of the supply cum demand shocks, accounts for the difference between our estimation of 0.05% and others'.

The methodology of Lahore School's estimation of GDP growth is year on year. Which makes it globally comparable to most estimation.

So, Table 1 shows, output in fiscal year 2023 as compared to output in fiscal year 2022 gives annual GDP growth for FY 2023 for Pakistan of 0.05%.

This GDP growth for FY 2023, is based on a trend expansion of the major macro drivers of growth, consumption, investment, government expenditure, and net exports over the year. Which is the result of the supply shocks of the flood damage and import constraints. And the demand shocks of the reduced income and continued deficits on the current account, based on falling export demand.

Inflation for the Fiscal year 2023

Inflation for FY 2023 is estimated by our model at 33.3%, as shown in Table 4. This is year on year, for FY 2023, compared to FY 2022.

Table 4: Price Model Estimated for FY 2019, FY 2020, FY 2021, FY 2022, and FY 2023

Time Period	Output Gap (% of GDP)	Budget Deficit (% of GDP)	Exchange Rate Depreciation (Growth Rate %)	Commodity Prices (Growth Rate %)	Inflation (Growth Rate %) *Model Estimate	CPI (Growth Rate %) **GOP estimate
FY 2019	-1.40	7.60	4.44	-1.74	10.30	10.30
FY 2020	-1.70	6.40	0.88	-2.00	5.28	9.30
FY 2021	-1.80	5.20	-0.78	9.07	13.49	8.20
FY 2022	0	7.00	3.59	7.696	15.88	11.00
FY 2023	0	5.00	26.26	2.04	**33.30**	**29.0**

Source: Lahore School Modeling Lab Estimates, 2023

Our estimate of inflation at 33.3% for FY 2023, is quite comparable to GOP's estimate of 29.0%.

Our model estimates inflation as being driven by four factors. An output gap. The budget deficit. Depreciation of the exchange rate. And global commodity prices.

For FY 2023, the overwhelming driver of inflation has been the huge depreciation of the exchange rate. By some 51% as observed over the four quarters of FY 2023. Contributing to near three quarters of the inflation rate.

The second major driver of inflation for FY 2023 has been the fiscal deficit. Estimated to be 5.0% over the fiscal year.

Global commodity prices, from being the major contributor to inflation over FY 2022, have eased completely over FY 2023. Growing at just 2.04% over the fiscal year.

The output gap, has been disinflationary over the previous three fiscal years on account of the Covid pandemic lockdowns. Post pandemic, this output gap has been estimated to be neutral in its impact on inflation. Neither disinflationary, not inflationary.

Methodology for supply and demand shocks

The annualized changes in GDP growth over FY 2023 are given by a series of supply cum demand shocks to the baseline economy.

Negative Supply Shock in FY 2023 of the Devastating Floods as Observed over Q1

The first negative supply shock as observed over Q1 of FY 2023, has been the impact of the floods on agriculture. GOP has estimated the total loss to agriculture, annualized over the whole of FY 2023, at $30 billion.

The World Bank considers that agricultural output has actually contracted over FY 2023. For the first time in two decades.

But despite these estimates of loss, GOP still gives the agricultural sector a positive growth rate of 1.6%, as seen in Table 5. Albeit this has been much lowered from the agricultural sector's growth rate in FY 2022 of 4.4%.

Table 5: Sectoral Growth Rates

	FY 2022	FY 2023
Agriculture	**4.4%**	**1.55%**
Industry	**7.19%**	**-2.90%**
LSM	**10.4%**	**-9.40%**
Services	**6.19%**	**0.90%**

Source: Ministry of Finance 2023

Negative Supply Shock in FY 2023 of the Import Constraint on Manufacturing as Observed over Q2 to Q4

The supply shock of the floods in Q1 of FY 2023, has been succeeded by another supply shock over Q2 to Q4. This is an import constraint on manufacturing.

Monthly imports peaked at $6.9 billion in August 2022, which is Q1 of FY 2023. Over the next 7 months of FY 2023, these have dropped significantly to an average $5.2 billion. A large drop of $1.7 billion. This represents a near 25% drop in imports over the course of FY 2023, (Table 3).

This drop-in imports over FY 2023, appears to be an import constraint, necessitated by the drop-in reserves of the State Bank of Pakistan (SBP). These reserves of the SBP dropped drastically from $8.8 billion in August 2022 to $5.6 billion by December 2022. By January 2023, these reserves had dropped further to $3.1 billion.

This drop-in reserve necessitated the SBP limiting the Letters of Credit (LCs) that were sanctioned for imports. Without this restriction on LCs for imports, the SBP would have run down its reserves more drastically.

Our model estimates a very large coefficient for the share of capital goods, intermediate goods, and energy imports, in total imports, of 0.52. This import coefficient for capital goods, intermediate goods and energy, then feeds as a second coefficient into total value added in the economy. The 25% drop in imports then passes through the two coefficients to give a drop-in value added in industry of up to 13%.

The impact of this drop in the value added of up to 13%, can be seen on Large Scale Manufacturing (LSM) in Table 5. Which shows that growth in LSM dropped from 10.4% in FY 2022, to a contraction of -9.4% in FY 2023.

This import shock constitutes the second negative supply shock in Q2 of FY 2023. Following on the heels of the first negative supply shock of flood damage in Q1 of FY 2023.

Estimating an output gap on the supply side to feed into the demand side

The twin supply shocks, of the total impact of the floods on agriculture and non-agriculture, and the import constrained drop in manufacturing, have to be expressed as an output gap, on the supply side.

This output gap is expressed as the output loss from trend growth.

Which then feeds into demand shocks.

The model then estimates the supply cum demand shock to the economy

The sectoral supply shocks to output and income then give two sorts of demand shocks.

First, the supply shocks weaken income, and therefore weaken income-based demand for consumption and investment.

Second, the economy is subject to the demand shock of falling demand for exports. Which leads to a continued deficit in the CA balance, over these first seven months of FY 2023. Despite the fall in imports, (Table 3).

The model takes the baseline economy in the FY22, and subjects it to these supply cum demand shocks. Which gives the annualized change in GDP growth over FY 2023.

GDP Growth Projections for the Fiscal Year 2024

Our model also makes a projection for GDP growth for FY 2024, of 2.71%.

This projection is based on easing some of the supply and demand shocks observed over FY 2024.

The first supply shock observed over FY 2023, which can be expected to be eased over FY 2024, is for agriculture. The black swan event of the flooding in Q1 of FY 2023, is not expected to be repeated. And agriculture is expected to return to long run trend growth, approximating 4% per annum.

The second supply shock observed over FY 2023, which can be expected to be eased somewhat over FY 2024, is for manufacturing.

The demand shock observed over FY 2023, which can be expected to be eased somewhat over FY 2024, is for the Current Account. The deficit on the Current Account is expected to persist over FY 2024 at approximately the same level. But with the foreign exchange reserves permitting a higher level of imports. So as to not constrain manufacturing.

The easing of these supply and demand shocks over FY 2024, compared to FY 2023, allow our model to give the projected GDP growth rate for FY 2024 of 2.71%.

Our model projects that inflation will ease some over FY 2024, to 25.39%. Largely on the back of some easing in the depreciation of the exchange rate.

GOP Emergency Economic Policy over FY 2023

The cusps of economic regimes in Pakistan, repeatedly generate the twin whammies of fiscal sustainability and sustainability of the Current Account. This time round, a third whammy has been added, of stagflation. Plummeting GDP growth and spiraling inflation. Both fed, as our model has shown, by the fourth whammy for good measure, of a viciously depreciating exchange rate.

So, GOP faces a flatlined growth rate of 0.05% over FY 2023. Its forex reserves have dwindled to approximate $4.5 billion, giving barely a month's worth of imports.

The 9th Review of the IMF's Extended Fund Facility for the remainder of the $6 billion deal signed in 2019, lapsed. In its stead GOP is to obtain $3 billion through a shorter-term, nine-month Stand By Facility (SBF).

GOP's immediate fiscal stance to regenerate GDP growth, or provide additional welfare, is then extremely limited, in abiding with the terms of this agreement with the IMF.

A riskily high projected budget deficit of 6.5% of GDP for FY 2024, has not survived re-negotiations with the IMF. Nor can it survive a future possible corner solution of restructuring of debt with bilateral lenders.

The alternative of fiscal reforms, to raise taxation above 12% of GDP, and cap spiraling energy leakages which have been pushing up expenditures, are the elephant in the policy room. The current economic regime has not attempted any comprehensive reforms in this budget for FY 2024. A succeeding economic regime will not be able to avoid them, for fiscal sustainability.

So, absenting fiscal reforms, has only left GOP monetary policy to generate growth and support welfare. Monetary policy however is primarily occupied with controlling inflation raging at 33.3% per annum. Largely using the demand side policy instrument of the interest rate. Table 6 shows the interest rate rising from 15% to peak at 22% over FY 2023. But with no visible impact on inflation rising from 16% to peak at 33% over this same period of FY 2023.

Table 6: Interest Rates

FY	Month	Interest Rate	Inflation Rate	
FY 2023	**July**	15%	**FY 2022**	16%
	August	15%	-	
	September	15%	-	
	October	15%	-	
	November	16%	-	
	December	16%	-	
	January	17%	-	
	February	17%	-	
	March	20%	-	
	April	21%	-	
	May	21%	-	
	June	22 %	**FY 2023**	33%

Source: SBP, 2023

Which does not make the demand side policy instrument of interest rates unnecessary. But it does show it to be insufficient.

Because, our model has shown here that three quarters of this inflation rate is being contributed to by the massive supply side cost push, of depreciation of the exchange rate.

Further, research at the Lahore School shows that depreciation of the exchange rate sets in place depreciationarys expectations, leading to increased capital outflows, (Mahmood and Chaudry, Lahore Journal of Economics, 2020). Which of course Pakistan's weak Current and Capital Accounts (KA) can ill afford. Nor can a weak investment rate of 16% of GDP.

Which gives GOP two almost existential, policy objectives for the immediate short run, but with tight constraints on the policy instruments it may use.

1) To arrest the depreciation of the exchange rate urgently.
   (a) But within the working of a market equilibrium. That is, without the use of import controls as agreed with the IMF. And which are shown here to lower GDP growth.
   (b) Without intervening in the exchange rate market to prop up the Rupee. And for which in any case the State Bank of Pakistan (SBP), has no reserves left to draw down in open market operations.

2) Maintenance and increase of the reserves of the SBP, above the current rock bottom levels of $4.5 billion, without:
   (a) Again, import controls.
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The only short run policy solution appears to be to tighten capital controls. To reduce outflows on the KA. This would work around intervening in the CA through import controls.

The IMF also anticipates that as interest rates rise in Advanced Economies (AEs), and there is capital flight to quality from Developing Countries (DCs), for capital controls in DCs to go up. Which policy option GOP could explore, while keeping within the ambit of the SBA.

For the record, the IMF has countenanced capital controls since the Asian Financial Crisis.

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