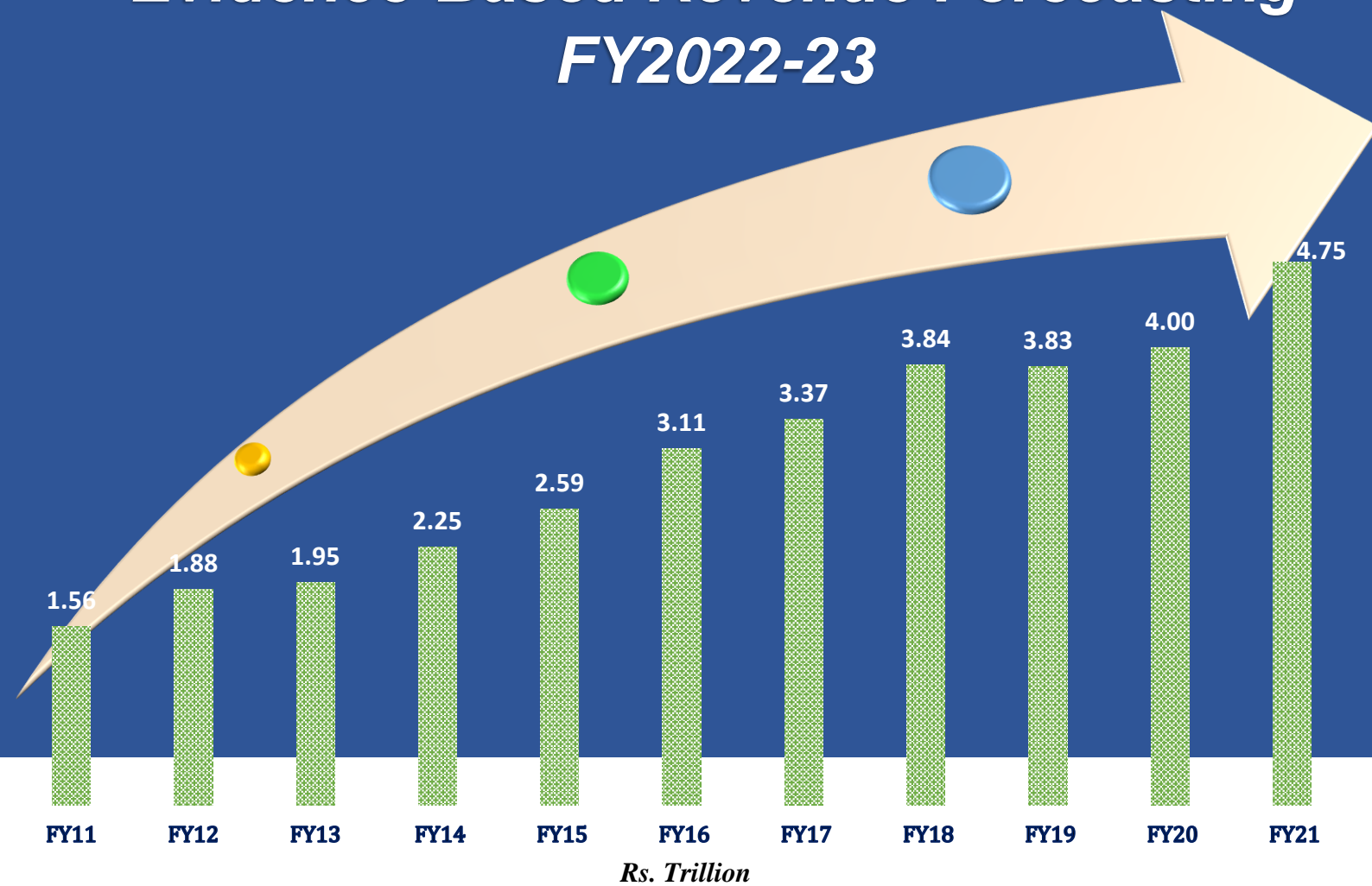


Evidence-Based Revenue Forecasting FY2022-23



Federal Board of Revenue



Feedback & Comments

Questions and comments regarding the report may be communicated to Chief-I (Directorate General of Revenue Analysis), FBR, through email chief.spr&s@fbr.gov.pk, or phone +9251 9203308.

© Federal Board of Revenue (2022) All rights reserved

All requests for permission to reproduce this document shall be addressed to the Directorate General of Revenue Analysis (DGRA)

Federal Board of Revenue, Pakistan.

Contributors

Project Supervisor

Qasim Raza Khan, DG (Directorate General of Revenue Analysis)

Research Team

Dr. Nasreen Nawaz, Chief-I (Directorate General of Revenue Analysis)

Dr. Naeem Ahmed, Secretary (Directorate General of Revenue Analysis)

Dr. Naseem Faraz, Tax Expenditure and Revenue Forecast Specialist (Directorate General of Revenue Analysis)

Support Staff

Saqib Mahmood, Statistical Assistant (Directorate General of Revenue Analysis)

Hafiz M. Mohsin Ikram, Statistical Assistant (Directorate General of Revenue Analysis)

Saghir Ahmad, Statistical Assistant (Directorate General of Revenue Analysis)

List of Acronyms

CD	Customs Duty
CFY	Current Fiscal Year
DLI	Disbursement Linked Indicator
DT	Direct Tax
DT (D)	Direct Tax (Domestic)
DT (M)	Direct Tax (Imports)
EBRF	Evidence-Based Revenue Forecasting
FBR	Federal Board of Revenue
FED	Federal Excise Duty
FED (D)	Federal Excise Duty (Domestic)
FED (M)	Federal Excise Duty (Imports)
FY	Fiscal Year
GDP	Gross Domestic Product
LSM	Large Scale Manufacturing
PFY	Previous Fiscal Year
RA	Revenue Analysis
ST (D)	Sales Tax (Domestic)
ST (M)	Sales Tax (Imports)

Preface

FBR plays central role in resource mobilization efforts of the government. It collects a major chunk of the total tax revenues for the national exchequer. The revenue forecasting is an important element thus, a reliable and dependable revenue forecasting method helps the revenue organization and the government to set realistic revenue targets amid complex nature of macroeconomic indicators and global economic trends.

This is the second “Evidence-Based Revenue Forecasting” report prepared by Revenue Analysis team. This report also fulfills the requirements of DLI-2 of World Bank’s project “Pakistan Raises Revenue”. In this report, tax-wise buoyancy estimates have been used to forecast the FBR revenues for FY2022-23.

I appreciate the efforts put in by the Revenue Analysis team, under the able guidance of Director General (Revenue Analysis), in producing this Evidence-Based Revenue Forecasting Report. I hope the technique used for revenue forecasting in this report provides fair estimates of the revenue targets that are compatible with the existing potential of the economy based on the projected economic performance parameters.

(ASIM AHMAD)
Chairman Federal Board of Revenue /
Secretary Revenue Division

Table of Contents

1.	Summary of Revenue Forecasting FY2022-23.....	7
2.	Current Revenue Trends.....	7
3.	Evidence Based Revenue Forecasting FY2022-23.....	10
4.	Conclusion.....	11

Annexure

Annex I: Methodology.....	13
Annex II: Tax Collection Data.....	18
Annex III: Tax Base Data.....	19
Annex IV: Verifying Robustness of Results.....	20

1. Summary of Revenue Forecasts for FY2022-23

The FBR revenue forecasts for FY 2022-23 based on expected collection for FY 2021-22, i.e., **Rs. 5,818 billion**, buoyancy estimates and macroeconomic indicators is **Rs. 6,649 billion**. After including policy and administrative/enforcement measures, FBR's forecasts stand at **Rs. 7004 billion**. The required growth to meet the projected revenue target will be 20.4 percent during FY 2022-23. Table 1 below shows the tax-wise revenue forecasts.

Table 1: Tax-wise Revenue Forecasts FY2022-23 (Rs. Billion)

Tax	Expected Base (Collection)	Revenue Forecasts	Required Growth (%)
	FY2021-22	FY2022-23	
DT	2,204	2,600	18.0
ST	2,453	2,759	12.5
FED	344	403	17.2
CD	817	887	8.6
Total Revenue Forecast without Measures	5,818	6,649	14.3
Additional Policy Measures		355	
Total Revenue Forecast with Measures		7,004	20.4

2. Current Revenue Trends

Despite ongoing Covid-19 related challenges, tax collection growth witnessed a healthy rebound during last three years particularly in FY2021-22. The collection growth was at the lowest level in FY2018-19 with a negative 0.4 percent growth, however, in the following years it started picking up. The growth remained 4.4 percent in FY2019-20 and reached 18.7 percent in FY2020-21 (Table 2). All the taxes recorded a double-digit growth in FY2020-21. The original target for FY2020-21 was Rs. 4,963 billion, which was later revised to Rs. 4,691 billion against which collection was made to the extent of 101.2 percent, i.e., Rs. 54 billion excess over the revised target.

Table 2: FBR Yearly Collection Trend (Rs. Billion)

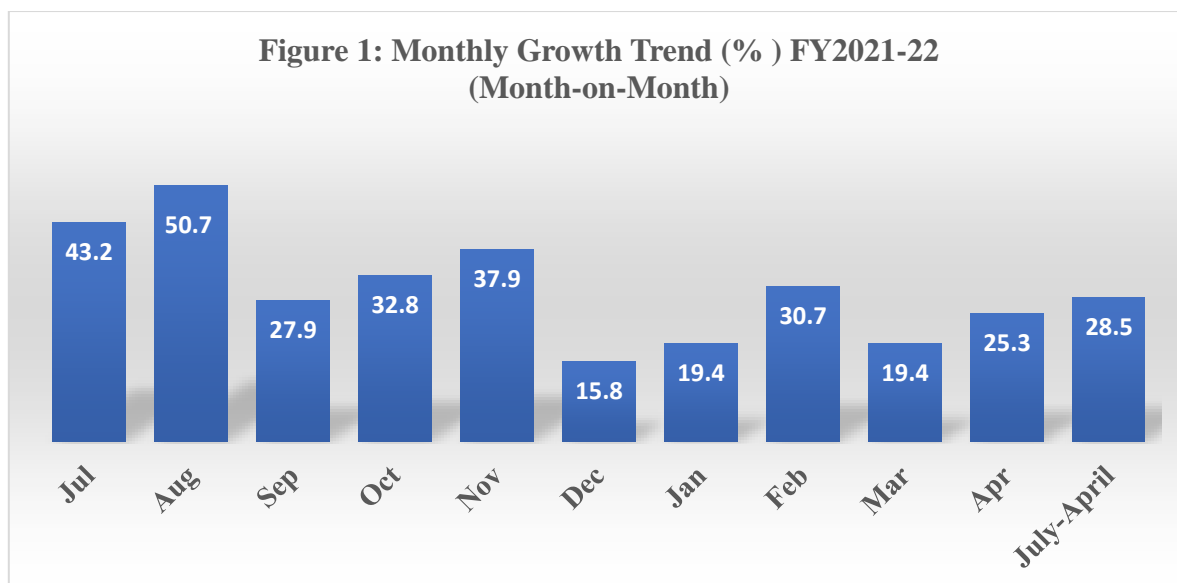
Tax	FY2017-18	% Inc/Dec	FY2018-19	% Inc/Dec	FY2019-20	% Inc/Dec	FY2020-21	% Inc/Dec
DT	1,537	14.3	1,446	-5.9	1,523	5.4	1,731	13.6
ST	1,485	11.8	1,459	-1.8	1,597	9.4	1,988	24.5
FED	213	7.9	238	11.6	250	5.2	277	10.6
CD	608	22.5	686	12.7	627	-8.6	748	19.4
Total	3,844	14.1	3,828	-0.4	3,997	4.4	4,745	18.7

The pace of growth in FBR's collection attained in FY2020-21, continued in FY2021-22. All taxes have achieved their respective targets during first ten months of CFY, except the FED. The overall growth in collection has been recorded at 28.5 percent (Table 3). This remarkable revenue growth is witnessed due to economic recovery in the post-COVID period and low revenue growth in past few years. The tax-wise collection is shown in table 3.

Table 3: Net Collection July-April FY2021-22 (Rs. Billion)

Tax	July-April		Increase (%)
	FY2020-21	FY2021 -22	
DT	1,362.6	1,743.7	28.0
ST	1,596.3	2,064.2	29.3
FED	223.4	256.0	14.6
CD	595.4	791.8	33.0
Total	3,777.7	4,855.8	28.5

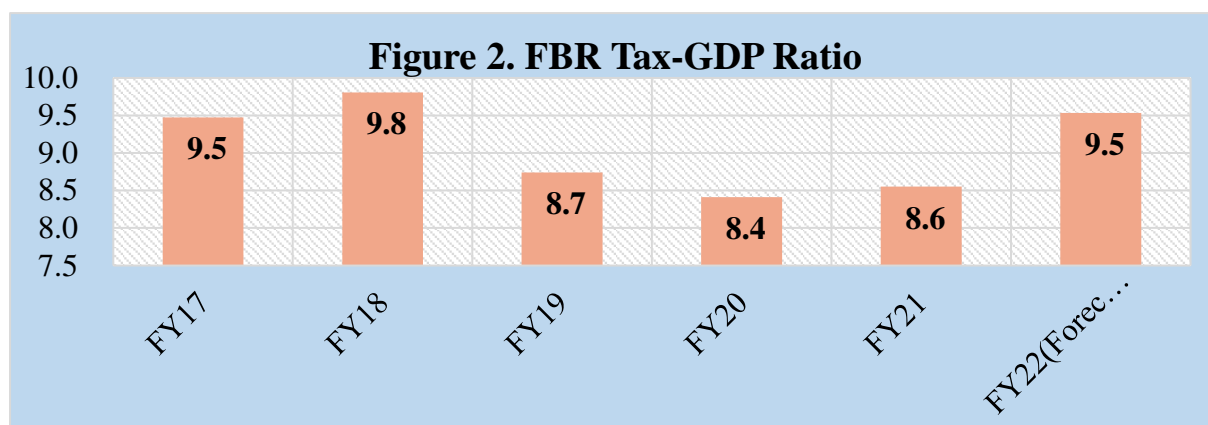
The month-wise growth trend is reflected in figure 1 below. Although there is a declining trend on a month-wise basis, however, the ten months' average growth is still above 28 percent.



Tax-GDP Ratio

Tax-GDP ratios are used to project extent of tax collection in the economy on a relative scale. FBR revenue collection has shown a steady increase in the last few years. As mentioned in the previous section despite ongoing Covid-19 challenges such as lockdowns and disruptions of international supply chains, the growth in revenues was 4.4 percent immediately after the first pandemic year, which was further increased to 18.7 percent in FY2020-21. The tax-GDP Ratio of FBR's collection is presented in Figure 2. GDP base is important to show the scale and scope of economic activities. The FBR's tax-GDP ratio remained between 8.4 percent to 9.8 percent during last five years. During FY2018-19 and FY2019-20, tax-GDP ratio declined, which was mainly attributed to Covid-19 pandemic related economic challenges.

However, again it started to increase in FY2020-21 as pandemic was effectively managed in Pakistan and world was also opening up (Figure 2). It is expected that tax-GDP ratio will increase further in FY2021-22 as reported by the first ten months' collection performance.



Source: GDP data from PBS

3. Evidence Based Revenue Forecasts FY2022-23

FBR collects the Federal level taxes including Direct Taxes (DT), Sales Tax (ST), Federal Excise Duty (FED) and Customs Duties (CD). The tax-wise forecasts for these taxes are based on the autonomous growth which is calculated using the buoyancy estimates and projections of macroeconomic indicators for FY 2022-23 (see Annex I for methodological detail).

3.1 Tax-wise Revenue Projections FY2022-23

The autonomous growth rates (Table 8 Annex I) has been applied on base year's (FY2021-22) expected collection (Rs. 5,818 billion) for each respective tax, which estimates an increase of **Rs. 831 billion** for the FY2022-23. This amount has been added in the expected collection of FY2021-22 to arrive at autonomous growth for FY2022-23 at Rs. 6649 billion. A further addition of Rs. 355 billion as projected policy measures is made. After including the projected policy measures of Rs. 355 billion, FBR's revenue forecasts stand at **Rs. 7004 billion.** (Table 4). The required growth over the expected collection of FY2021-22, i.e., Rs. 5,818 billion will be 20.4 percent for FY2022-23.

Table 4: Revenue Projections for FY2022-23 (Rs. Billion)

Tax	Expected Base (Collection) FY 2021-22	Revenue Forecasts FY 2022-23	Required Growth (%)
Total Revenue Forecast without Measures	5,818	6,649	14.3
Additional Policy Measures		355	
Total Revenue Forecast with Measures		7,004	20.4

Head-wise Revenue Projections for FY2022-23 (Rs. Billion)

Direct taxes	DT (D)	DT (M)	DT (total)
Expected Base FY 2021-22	1,915.0	288.0	2,203.0
Revenue Forecast without Measures FY 2022-23	2,286.9	313.0	2,599.7
Required Growth (%)	19.4	8.7	18.0
Sales Tax	ST (D)	ST (M)	ST (total)
Expected Base FY 2021-22	678.0	1,775.0	2,453.0
Revenue Forecast without Measures FY 2022-23	831.0	1,927.3	2,758.7
Required Growth (%)	22.6	8.6	12.5
Federal Excise Duty	FED (D)	FED (M)	FED (total)
Expected Base FY 2021-22	318.0	26.0	344.0
Revenue Forecast without Measures FY 2022-23	375.8	27.5	403.3
Required Growth (%)	18.2	5.8	17.2
Customs Duty			CD (total)
Expected Base FY 2021-22			817.0
Revenue Forecast without Measures FY 2022-23			887.1
Required Growth (%)			8.6

4. Conclusion

The overall FBR taxes are buoyant and there is a potential for achieving growth in tax revenues provided that macroeconomic indicators are doing well. It is evident from last 20 years data that FBR revenues increased substantially. The tax-wise breakdown reveals that the DT (D) and ST (D) are most buoyant with 1.16 and 1.12 respective buoyancy values. On the other hand, ST (M), customs and FED have relatively lower buoyancies. In this regard, addressing the issues of narrow base, unnecessary exemptions and under invoicing/valuation problems at import stage can be instrumental for making these taxes more buoyant, thus enabling the revenue organization to fetch more tax revenues.

It is estimated that the total FBR collection for the next year will be Rs. 7,004 billion. However, the revenue collection and achieving of target will largely depend on the performance of the economy against the targets and the effective enforcement by FBR.

Annex I

Methodology

Buoyancy Estimates

The Directorate General of Revenue Analysis Wing projects the tax-wise revenue estimates based on buoyancy estimates¹ before budget. Tax-wise buoyancy estimates are calculated by using historical collection and respective tax base (Table 5) (from national income accounts) data. The current tax-wise buoyancy estimates are estimated from data for the years 2001-02 to 2020-21 in respect of economic indicators, i.e., GDP, LSM and Imports.² This year Pakistan Bureau of Statistics (PBS) has published its revised National Income Accounts on 2015-16 base. Data is extracted from the National Income Accounts tables provided at the website of PBS³.

The tax buoyancy is an indicator to measure efficiency and responsiveness of revenue mobilization in response to growth in the GDP or national income. A buoyant tax means the tax revenues increase more than proportionately in response to a rise in national income/GDP/base.

Tax buoyancy is the ratio of the percentage change in tax revenues (including changes in tax collection due to changes in tax base or tax rate) to percentage change in tax base or GDP. To calculate tax buoyancy, the ex-post (including changes in tax rate/ base) percentage change in tax revenue is used. The respective tax bases of tax-wise FBR taxes are as follow:

¹ Buoyancy is relationship between changes in actual revenues and changes in proxy tax base from National Accounts data.

² Annex II and Annex III

³ <https://www.pbs.gov.pk/national-accounts-tables>

Table 5. Head-wise FBR taxes and Respective Tax Bases

Head-wise Taxes	Head-wise Tax Base
Direct Tax (D)	GDP
Direct Tax (M)	Import Value
Sales Tax (D)	Large Scale Manufacturing (LSM)
Sales Tax (M)	Import Value
Customs Duties	Dutiable Import Value
Federal Excise Duty (D)	Large Scale Manufacturing (LSM)
Federal Excise Duty (M)	Import Value

The buoyancy estimates of tax-wise FBR taxes are as follow:

$$IT(D) \text{ Buoyancy Estimates} = \frac{\% \text{ Change in Actual Income Tax Revenues}}{\% \text{ Change in GDP}}$$

$$IT(I) \text{ Buoyancy Estimates} = \frac{\% \text{ Change in Actual Income Tax Revenues}}{\% \text{ Change in Import Value}}$$

$$ST(D) \text{ Buoyancy Estimates} = \frac{\% \text{ Change in Actual ST Revenues}}{\% \text{ Change in LSM}}$$

$$ST(I) \text{ Buoyancy Estimates} = \frac{\% \text{ Change in Actual Sales Tax Revenues}}{\% \text{ Change in Import Value}}$$

$$CD \text{ Buoyancy Estimates} = \frac{\% \text{ Change in Actual Customs Duty Revenues}}{\% \text{ Change in Import Value}}$$

$$FED (D) \text{ Buoyancy Estimates} = \frac{\% \text{ Change in Actual Federal Excise Duty Revenues}}{\% \text{ Change in LSM}}$$

$$FED (I) \text{ Buoyancy Estimates} = \frac{\% \text{ Change in Actual Federal Excise Duty Revenues}}{\% \text{ Change in Import Value}}$$

Using these buoyancy estimates autonomous growth for each tax has been estimated by using the macroeconomic indicators forecasts for each tax base.⁴ The parametric forecasts are provided for the GDP Growth, inflation, LSM growth and imports for upcoming year. GDP

⁴ Macroeconomic indicators forecasts are received from Inland Revenue Policy Wing, FBR

value used for this projection of growth is Gross Value Addition of Sectors at Constant Factor Costs. Using the inflation forecasts, these GDP growth estimates are converted into GDP growth estimates at Current Factor Cost. Furthermore, GDP-Gross value addition at Current Factor Cost at market prices (inclusive of Taxes less subsidies) are used for measuring the Buoyancy estimates to be used for revenue forecasts. Table 6 provides buoyancy estimates of each tax.⁵

Table 6: Buoyancy Estimates

DT (D)	DT (M)	ST (D)	ST (M)	FED (D)	FED (M)	CD
1.16	1.11	1.12	1.10	0.90	0.74	1.10

The estimate of growth of relevant macroeconomic indicator is multiplied with specific tax buoyancy estimate to arrive at the autonomous growth rate for that specific tax.

Calculating Autonomous Growth

In the second step autonomous growth has been estimated by multiplying buoyancy estimates with projected growths of respective bases (Table 7)⁶

Table 7: Growth Projections for FY2022-23

Macroeconomic Indicators	Projected Growth (%)
GDP (Nominal)	16.8
LSM (Nominal)	20.2
Imports	7.8
Inflation	12.8
GDP (Real)	4.0
LSM (Real)	7.4

⁵ Source: See Annex II and Annex III

⁶ Autonomous growth depends on macroeconomic indicators and assumption of tax structure being able to capture revenue from these as per past performance. A higher growth in base will lead towards higher independent growth in respective taxes and thus higher projected collection.

Table 8 provides autonomous growth parameters for each tax. These are based on buoyancy estimates and the macroeconomic proxy bases growth rates are provided by Pakistan Bureau of Statistics and Inland Revenue Policy Wing, FBR.

Table 8: Autonomous Growth Rates

	%
DT (D) (GDP Nominal Growth* DT (D) Buoyancy)	19.4
DT (M) (Imports Growth* DT (M) Buoyancy)	8.7
ST(D) (LSM Nominal Growth* ST(D) Buoyancy)	22.6
ST (M) (Import Growth * ST (M) Buoyancy)	8.6
FED (D) (LSM Nominal Growth * FED (D) Buoyancy)	18.2
FED (M) (Imports Growth * FED (M) Buoyancy)	5.8
CD (Imports Growth * CD Buoyancy)	8.6

These autonomous growths have been used to project the autonomous growth estimates of respective tax revenues (Table 9). For imports although negative growth in quantity of imports can be experienced due to restrictive import policy, however, overall import value is expected to increase due to depreciation of rupee in the coming year. According to state bank of Pakistan, Exchange rate will further depreciate by 14 percent until June 2023⁷.

To be sure of the result's robustness, a small exercise was also done by using reduced and increased nominal growths by 10 percent (Annex IV). The resulting change was insignificant.

⁷ <https://www.sbp.org.pk/ecodata/rates/m2m/M2M-Current.asp>

Table 9: Revenue Projections for FY2022-23

Revenue Projections for FY 2022-23

(Rs. Billion)

Base Growth Assumptions		Buoyancy Estimates		Autonomous growth							
Macroeconomic Indicators (*)	%		%	Heads	%						
GDP (Nominal)	16.8	DT (D)	1.16	DT Domestic (GDP Nominal * DT Domestic Buoyancy)	19.4						
LSM(Nominal)	20.2	DT (M)	1.11	DT Imports (Imports* DT imports Buoyancy)	8.7						
Total Imports	7.8	ST (D)	1.12	ST(D) (LSM Nominal * STD Buoyancy)	22.6						
Inflation	12.8	ST (M)	1.10	ST(M) (Import * ST Imports Buoyancy)	8.6						
LSM(Nominal)	20.2	Customs	1.10	FED Domestic (LSM Nominal * FED Domestic Buoyancy)	18.2						
GDP (real)	4	FED (D)	0.90	FED Imports (Imports * FED Imports Buoyancy)	5.8						
LSM (real)	7.4	FED (M)	0.74	CD (Imports * CD Buoyancy)	8.6						
DT (D)		DT (M)	DT	ST (D)	ST (M)	ST	CD	FED (D)	FED (M)	FED	Total
Expected Base Figures FY 2021-22	1915	288	2204	678	1775	2453	817	318	26	344	5818
Tax-wise Autonomous Growth	19.5	8.7	18.0	22.6	8.6	12.5	8.6	18.2	5.8	17.2	14.3
Revenue forecast without Measures FY 2022-23	2288.2	312.9	2600	831.4	1927.3	2758.7	887.1	375.8	27.5	403.3	6649
Additional Measures											355.0
Revenue forecast with Measures FY 2022-23											7004

Annex II: Tax Collection Data

(Rs. Million)								
FY	DT (M)	DT(D)	ST (M)	ST (D)	FED (M)	FED (D)	Customs	Total
2001-02	19,231	123,274	92,779	73,782	44,917	2,270	47,818	404,070
2002-03	20,787	131,111	105,605	89,534	43,097	1,657	68,836	460,627
2003-04	22,829	142,250	125,875	93,292	43,894	1,659	91,045	520,843
2004-05	24,484	158,888	144,845	93,692	49,855	3,249	115,374	590,387
2005-06	26,878	198,110	171,445	123,353	51,419	3,852	138,384	713,442
2006-07	25,790	307,947	175,909	133,487	66,957	4,847	132,299	847,236
2007-08	27,675	360,186	196,034	181,396	77,785	14,352	150,663	1,008,091
2008-09	30,102	413,447	203,715	248,029	103,078	14,377	148,403	1,161,150
2009-10	50,253	475,724	247,246	269,102	111,227	13,557	160,273	1,327,382
2010-11	66,399	536,052	308,648	324,709	117,833	19,521	184,853	1,558,014
2011-12	85,334	653,090	430,399	374,500	113,607	8,857	216,906	1,882,693
2012-13	103,236	640,173	429,831	412,697	113,811	7,153	239,459	1,946,360
2013-14	123,808	753,447	495,330	501,052	128,493	9,591	242,811	2,254,532
2014-15	147,352	886,368	553,028	534,762	149,030	13,217	306,220	2,589,978
2015-16	179,728	1,037,746	678,313	624,058	177,269	10,785	404,572	3,112,472
2016-17	197,041	1,147,185	702,565	626,400	186,089	11,822	496,772	3,367,874
2017-18	218,691	1,317,892	824,219	661,087	203,637	9,856	608,373	3,843,755
2018-19	221,833	1,223,675	810,357	648,856	225,519	12,667	685,575	3,828,482
2019-20	199,691	1,323,754	876,345	720,532	240,956	9,518	626,612	3,997,408
2020-21	218,499	1,512,755	1,115,912	872,396	257,412	19,633	748,390	4,744,998

Source: FBR Yearbooks

Annex III: Tax Base Data

(Rs. Million)				
S.No	FY	GDP* (Gross Value Addition +Taxes - Subsidies)	LSM	Imports
1	2001-02	5,599,529	463,805	634,630
2	2002-03	6,116,024	518,279	714,372
3	2003-04	7,059,769	652,097	897,825
4	2004-05	8,109,529	820,629	1,223,079
5	2005-06	9,349,898	974,870	1,711,158
6	2006-07	10,514,773	1,125,730	1,851,806
7	2007-08	12,105,665	1,471,028	2,512,072
8	2008-09	15,021,118	1,540,254	2,723,570
9	2009-10	16,918,474	1,774,338	2,910,975
10	2010-11	20,798,383	2,314,710	3,455,287
11	2011-12	22,812,691	2,549,522	4,009,093
12	2012-13	25,474,626	2,718,555	4,349,880
13	2013-14	28,641,817	3,048,172	4,630,521
14	2014-15	31,229,850	3,079,209	4,644,152
15	2015-16	32,725,049	2,841,709	4,658,749
16	2016-17	35,552,819	3,083,146	5,539,721
17	2017-18	39,189,810	3,499,175	6,694,897
18	2018-19	43,798,401	4,266,145	7,443,253
19	2019-20	47,521,525	4,026,165	7,029,819
20	2020-21	55,488,010	4,914,827	8,982,441

Source: Pakistan Bureau of Statistics

* GDP after adjustments of taxes and subsidies or GDP at market value

Annex IV Verifying Robustness of Results

Robustness check

10% Reduction in autonomous growth

	DT (D)	DT (M)	DT	ST (D)	ST (M)	ST	CD	FED (D)	FED (M)	FED	Total
Expected Base Figures FY 2021-22	1915	288	2204	678	1775	2453	817	318	26	344	5818
Tax-wise Autonomous Growth	17.5	7.8	16.3	20.4	7.7	11.0	7.7	16.4	5.2	24.5	12.9
Revenue forecast without Measures FY 2022-23	2249.7	313.6	2563.3	816.1	1906.9	2722.9	850.8	370.0	27.3	428.3	6565

10% Increase in autonomous growth

	DT (D)	DT (M)	DT	ST (D)	ST (M)	ST	CD	FED (D)	FED (M)	FED	Total
Expected Base Figures FY 2021-22	1915	288	2204	678	1775	2453	817	318	26	344	5818
Tax-wise Autonomous Growth	21.4	9.5	19.9	24.9	9.4	13.5	9.4	20.0	6.3	19.0	15.7
Revenue forecast without Measures FY 2022-23	2324.1	318.6	2642.6	846.7	1937.3	2784.1	864.8	381.6	27.6	440.1	6732