Data Sources Tutorial

This tutorial explains how to utilize several public IMF and World Bank databases to find and retrieve various data series necessary to perform your own Debt Sustainability Analysis.¹ To access these tools, simply visit <u>www.imf.org</u>, and click on the "Data" tab.

Contents

I. World Economic Outlook (WEO)	
II. The Fiscal Monitor (FM).	7
III. Public Finances in Modern History (PFMH)	
A. Country Comparison via the PFMH Dataset	14
IV. World Bank Data	16
V. Quarterly External Debt Statistics (QEDS)	

¹ This should complement other sources of data, like those published by national authorities or other agencies.

I. WORLD ECONOMIC OUTLOOK (WEO)

Access

On the IMF's Data page <u>http://www.imf.org/external/data.htm</u>, select the most recently available WEO.

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INTERNATIO	ONAL	Search IMF Q
MONETARY	FUND	
HOME ABOUT THE IMF RESEARCH	COUNTRIES CAPACITY DEVELOPMENT NEWS VIDE	
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What's Now	Popular Data	
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The IMF has released results of the 2016 Coordinated Direct Investment	World Economic Outlook October 2016	Manth Lowyanis Dufficial Addison (MDD) Mill anathen- Kanari addis layosantay Milliona
Survey (CDIS), the worldwide survey	Global Financial Stability Report October 2016	An owner and
positions, with 107 economies	Fiscal Monitor October 2016	what you're looking for?
reporting 2015 data, compared to 100 economies last year. Sixty-eight	IMF Data Mapper®	A Guide to IMF Data selected IMF online data sources
percent of the total inward direct investment position is concentrated in	IMF Finances	
10 economies.	SDRs ner Currency Unit	

Then click on the icon on the side bar to access the WEO database.

Video Summary	WORLD ECONOMIC OUTLOOK (WEO) Subdued Demand: Symptoms and Remedies October 2016 The World Economic Outlook (WEO) presents IMF economists'
MF Chief Economist Maurice Obstfeld explains the sublook for the global economy	analyses of global economic developments, issues affecting advanced, emerging, and developing economies, and topics of current interest.
Related Articles	Downloads: English ▼ عربي * Essañol * Prançais * Pycowski * 中文 * 田本語 *
Blog: The World Economy: Moving Sideways ▶	FRONT MATTER V CHAPTER 2 CHAPTER 4 VIDEOS V
IMF Sees Subdued Global Growth, Warns Economic Stagnation Could Fuel Protectionist Calls ►	CHAPTER 1 V CHAPTER 3 V STATISTICAL APPENDIX V
Keeping the Wheels of Trade in Motion »	Summary
Combating Persistent Disinflation: A Challenge for Many Central Banks >	Global growth is projected to slow to 3.1 percent in 2016 before recovering to 3.1 percent in 2017. The forecast, revised down by 0.1 percentage point for 2016 and
Spillovers from China's Transition and Migration ►	2017 relative to April, reflects a more subdued outlook for advanced economies following the June U.K. vote in favor of leaving the European Union (Brexit) and weaker-than-expected growth in the United States. These developments have pu further downward pressure on global interest rates, as monetary policy is now expected to remain accommodative for longer.
Data Tools	PEAD FIRE STRAMADY *
OCTOBER 2016 DATABASE	Click horal

Alternatively, access WEO here:

http://www.imf.org/external/pubs/ft/weo/2016/02/weodata/index.aspx

Description



WEO includes key macroeconomic variables at yearly frequency, starting in 1980, wherever available. It also includes the latest IMF forecasts 5 years ahead. The WEO database's strength is the fact that it is up-to-date and forward-looking.

Using the WEO database, you can download several variables from many different countries and country groups all at once. You also have the option to download the entire set of data.

					World Economic Outlook Database, October 201					
Step 1 of 5	1	≫	2	≫	3	≫	4	≫	5	New Query Help
. Select Country Group										
All countries								NC	nes	
Advanced economies										
Euro area										
Major advanced economies (G	7)									
Emerging market and developing	economie	5								

To retrieve data on several countries, first select a country group.

Next, select one or several countries of interest.

Step 2 of 5	1	>	2	>	3	>	4	>	5	New Query
			-				1.11			Help

World Economic Outlook Database, October 2016

2. Select Countries

Select All	Clear All			Continue >
All countries (191 countries) Countries		Notes	Countries	Notes
🗹 Afghanistan		11	🗹 Libya	E .
🖉 Albania		13	Lithuania	B
🗹 Algeria		Ш	Luxembourg	в
🖉 Angola		13	Macao SAR	8
🗹 Antigua and Barbuda		11	FYR Macedonia	B
Argentina		13	Madagascar	B

Third, select variables of interest.

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							Wor	ld Eco	nomic	Outloo	k Database	, October 2016
	S	Step 3 of 5	1	≫	2	≫	3	≫	4	≫	5	New Query
Sel	ect Sub	iects									Your se	elections <u>Help</u>
Se	elect All	Clear All										Continue >
Subj	jects										Notes	Availability
Nati	ional Ac	counts										
	Gross d National	lomestic product, cons currency	stant prices								B	[191/191]
2	Gross d Percent d	fomestic product, cons change	stant prices								н	[191/191]
	Gross d National	lomestic product, curr currency	ent prices								ы	[191/191]
	Gross d U.S. dolla	lomestic product, curr ars	ent prices								13	[191/191]
1	Gross d Index	lomestic product, defl	ator								в	[191/191]
	Gross d National	lomestic product per o currency	apita, const	ant pr	ices						в	[190/191]
	Gross domestic product per capita, current prices National currency										B	[190/191]
	Gross d U.S. dolla	lomestic product per o ars	apita, curre	nt pric	es						н	[190/191]
	Output Percent o	gap in percent of pot of potential GDP	ential GDP								в	[27/191]

Variables of interest for the DSA are:

- Real GDP growth rate (annual percent change)
- Real GDP (national currency)
- **GDP deflator**
- > Output gap (in percent of potential GDP)
- > General government revenue (in national currency & as a percent of GDP)
- General government total expenditure (in national currency & as a percent of GDP)
- General government net lending/borrowing (in national currency & as a percent of GDP)
- General government structural balance (in national currency & as a percent of potential GDP)
- General government primary net lending/borrowing (in national currency & as a percent of GDP)
- General government gross debt (in national currency & as a percent of potential GDP)
- General government net debt (in national currency & as a percent of potential GDP)

Definitions for all variables can be found beneath the selection screen. For example:

General government total expenditure (Percent of GDP)

Total expenditure consists of total expense and the net acquisition of nonfinancial assets. Note: Apart from being on an accrual basis, total expenditure differs from the GFSM 1986 definition of total expenditure in the sense that it also takes the disposals of nonfinancial assets into account. Finally, select a time period to examine. As mentioned, WEO includes IMF forecasts 5 years from the present for most countries. Specify advanced settings to format the report to your liking.

									Wo	rld Eco	nomic	Outlook	Datab	ase, October	2016
	5	Step 4 o	f 5		1	>	2	>	3	>	4	»	5	New Q	uery
Sele	ct Date	e Rango	в										<u>¥0</u>	ur selections	Help
														Prepare Re	eport
Date	Range														
Star	rt Year	1980 •						End	Year 2	018 •					
Adva	nced S	ettings	(Optional)											
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Field	s to sh	ow on r	eport												
fe	or Cour	ntry						fo	r Subj	ect					
	WEO	Country	Code						Subje	ct Des	criptor				
	ISO A	Alpha-3 C	Code						WEO	Subjec	t Code	2			
Sort (Order														
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														riepare ne	those .

Click "Prepare Report" and you get a table of time series data sorted by country & variable.

	We	orld Economic Outlook Data	base, O	tober 2016					
Step 5 of	5 1 2 3	» 4 » (5)		New Query					
5. Report for Selecte You will find <u>notes</u> on the d Country	ed Countries and Subjects ata and options to <u>download</u> the table below your Subject Descriptor	results. Units	Scale	Country/Series- specific Notes	1980	1981	1982	1983	1984
Afghanistan	Gross domestic product, constant prices	Percent change		B	n/a	n/a	n/a	n/a	n/a
Afghanistan	Gross domestic product, deflator	Index		11	n/a	n/a	n/a	n/a	n/a
Afghanistan	Output gap in percent of potential GDP	Percent of potential GDP							
Albania	Gross domestic product, constant prices	Percent change		B	2.684	5.700	2.900	1.100	2.000
Albania	Gross domestic product, deflator	Index		н	5.935	5.809	5.814	5.809	5.623
Albania	Output gap in percent of potential GDP	Percent of potential GDP							

In conjunction with the DSA template, you can download the data into Excel using the link below the table.

Download The downloads are presented in Tab Delimited Values format which is compatible with most statistical packages and Excel. Note: Statistical packages and Excel. Your WEO Report

To perform a DSA for a MAC will require information on several of the variables that WEO has to offer. Make good use of it!

II. THE FISCAL MONITOR (FM)

Access

On the IMF's Data page <u>http://www.imf.org/external/data.htm</u>, select the most recently available Fiscal Monitor.

	NAL FUND	Search IMF Q			
HOME ABOUT THE IMF RESEARCH C	OUNTRIES CAPACITY DEVELOPMENT NEWS VIDEOS				
What's New The IMF has released results of the 2016 Coordinated Direct Investment	Popular Data World Economic Outlook October 2016	Can be found in these online sources Besalated means that (55% - refloy dat Barry Homes Tables) (50% - exiting dat Dense of the barry (50% - exiting dat Dense of the barry (50% - exiting data) Dense of the			
Survey (CDIS), the worldwide survey of bilateral direct investment positions, with 107 economies reporting 2015 data, compared to 100	Global Financial Stability Report October 2016 Fiscal Monitor October 2016	Not sure where to find what you're looking for? A Guide to JME Data			
economies last year. Sixty-eight percent of the total inward direct investment position is concentrated in 10 economies.	IMF Data Mapper®	SELECTED IMP ONLINE DATA SOURCES			
in 10 contonics.	SDRs per Currency Unit				

Description

The Fiscal Monitor offers public finance data for all IMF member countries dating back several years, as well as projections 5-years ahead.

Click on the icon on the side bar to access the FM database through DataMapper.



IMF Data Mapper is a tool to quickly retrieve variables from several IMF datasets. Data Mapper is useful to visualize data over time and perform cross-country comparisons of a few key DSA variables. The default dataset pulled through DataMapper is the WEO database, so be sure to select the FM dataset by clicking the "Datasets"

IMF DataMapper	r 2016) > Gross Domestic Product (GDP) > Real GDP growth	
Re	al GDP growth ⁱ Annual percent change	
	country region analy	ical group
	Afghanistan	3.4
	Albania	3.7
mar Marken	Algeria	2.9
	American Samoa	no data
	Andorra	no data
A ANTAL AND A ANALY AND A ANALY	Angola	1.2
	Antguina	10 0ata
	Arcentina	2.4
10% or more	Armenia	3.4
646-10% 3 3% - 6%	Aruba	no data
0% - 3% Iess than 04		
III ns data	1047	

Select Fiscal Monitor from the available dataset options

IMF DataMapper	Datasets			7			Q					
Datasets												
TT (his version Click on a D	of the IMF DataMapp Dataset tile below to e	er publishes a wide se xplore more indicators grou	lection of the key economi s and their coverages on co ups.	c indicators from 1 ountry, region, and	2 <u>Datasets</u> . analytical						
World Economic Outlook (October	Fiscal Monitor (Octo	ber 2016)	International Financial S	tatistics	Balance of Payments Statistics							
Indicators Time range 1980	- 2021	Indicators Time range	8 2007 - 2021	Indicators Time range	15 1980 - 2050	Indicators Time range	11 2005 - 2016					
Countries Regions and analytical	237 34	Countries	237	Countries Regions and analytical	237 10	Countries Regions and analytical	235 10					
AFR Regional Economic Outlook		Capital Flows in Dev	eloping Economie	Capital Account Openne	ss Index (April	Assessing Reserve Adequacy - ARA (Jul						



From there, select the indicators you are interested in.

You can choose between Advanced Economies, Emerging Markets, and Low-Income Countries, or specify countries by their name.



Additional variables of interest for the DSA are:

- > Cyclically adjusted balance (percent of potential GDP) incl fcst
- > Cyclically adjusted primary balance (percent of potential GDP) incl fcst

Download

You can download all of the Fiscal Monitor data in excel format, by clicking on the "Fiscal Monitor Database"

Example 1: Examine net debt in the Advanced economies countries in 2012.

- 1. Select the Fiscal Monitor as the dataset in DataMapper.
- 2. Select Net debt as the fiscal indicator.
- 3. Specify "Advanced economies" by removing the other options.
- 4. Use the time bar on the graph to select 2012.

If you've performed the steps correctly, the value next to the "Advanced economies" should be 71.03

III. PUBLIC FINANCES IN MODERN HISTORY (PFMH)

Access

From the DataMapper, you also have access to an additional database of public finances. Simply select "Public Finances in Modern History" from the available datasets as shown below.

	IMF DataMapp	Per Datasets						Q
				Data	asets			
		This version Click on a	n of the IMF DataMapper pu Dataset tile below to explo	ublishes a wide se re more indicator: gro	lection of the key economic s and their coverages on cou ups.	indicators from 1 untry, region, and	2 <u>Datasets</u> . analytical	
World Economic Outlook (October 20		Fiscal Monitor (October 2016)		International Financial Statistics		Balance of Payments Statistics		
	Indicators	15	Indicators	8	Indicators	15	Indicators	11
	Time range	1980 - 2021	Time range	2007 - 2021	Time range	1980 - 2050	Time range	2005 - 2016
	Countries	237	Countries	237	Countries	237	Countries	235
	Regions and analytical	34			Regions and analytical	10	Regions and analytical	10
AFR Regional Economic Outlook		Capital Flows in Developing Economie		Capital Account Openness Index (April		Assessing Reserve Adequacy - ARA (Jul		
	Indicators	26	Indicators	18	Indicators	18	Indicators	4
	Time range	2004 - 2017	Time range	1995 - 2014	Time range	2000 - 2013	Time range	2000 - 2017
	Countries	45	Countries	174	Countries	174	Countries	79
	Regions and analytical	24	Regions and analytical	3	Regions and analytical	4	Regions and analytical	1
1. Gender Budgeting and 2. Gender E		Historical Public Debt Database		Public Finances in Modern History		Export Diversification and Quality (Spr		
	Indicators	3	Indicators	Ż	Indicators	8	Indicators	14
	Time range	1980 - 2015	Time range	1880 - 2012	Time range	1800 - 2012	Time range	1960 - 2010
	Countries	222	Countries	235	Countries	235	Countries	237
	Regions and analytical	13	Regions and analytical	19	Regions and analytical	1	Regions and analytical	34

You can also open here: <u>http://www.imf.org/external/datamapper/datasets/FPP</u>

Description

The Public Finances in Modern History database covers the public finances of 55 different advanced and emerging countries from as far back as 1800. This dataset is described in detail in the IMF working paper "A Modern History of Fiscal Prudence and Profligacy"² (which you can access in the Course Materials folder). The strength of this database is the richness of the historical data, useful when conducting, for example, cross-country comparison of fiscal consolidation episodes. However, the data ends in 2011 as of now, so you might need to get the latest data from a different source.



Download

Simply select "Data" to download the entire dataset into Microsoft Excel. You can also take a look at the Chartbook to see some nice figures for select countries.

Paolo Mauro & Rafael Romeu & Ariel J Binder & Asad Zaman, 2013. "A Modern History of Fiscal Prudence and Profligacy," IMF Working Papers 13/5, International Monetary Fund.

Variables of interest for the DSA are:

- Government revenue (as a percent of GDP)
- Government expenditure, primary and total (as a percent of GDP)
- Government primary balance (as a percent of GDP)
- Interest paid on public debt (as a percent of GDP)
- Real long term interest rate on gov't debt (percent)
- Gross public debt (as a percent of GDP)
- Real GDP growth rate (percent)
- > Real long term government bond yield (percent)

A. Country Comparison via the PFMH Dataset

Download

Example: Compare gross public debt in AUS and USA.

- 1. Open DataMapper.
- 2. Select the Public Finances dataset.
- 3. Specify subject as "gross public debt."
- 4. Remove default countries by unchecking boxes.
- 5. Click "add an item to the chart." Select United States and Australia.
- 6. Select 2011 as year using scroll bar.
- 7. Select the "Map" under the "Use Our Data" section.

If you've performed the steps correctly, your chart should appear as shown on the next page. Here we see that, as of 2011, Australia's gross public debt was about 24.2% of its GDP, hence its yellow color on the heat map. In contrast, the United States' public debt ratio was significantly higher (102.9%), as shown by its intense dark red color.



IV. WORLD BANK DATA

Access

To find the most comprehensive data on annual exchange rates for DSA, visit our friends over at the World Bank at <u>www.worldbank.org</u> and click on the "Data" tab. The World Bank provides free and open access to data of all sorts.

Download

As shown below, simply search "exchange rate" in the indicator bar, select "Official exchange rate" and press "Enter" Alternatively, get data directly here: http://data.worldbank.org/indicator/PA.NUS.FCRF



Note that the MAC DSA template uses exchange rates quoted in LCU/USD.

To obtain your own figures to perform a DSA, the easiest method would be simply to download the data into Excel. Click the "Download Data" icon and you obtain annual ER figures as far back as 1960 for some countries. See below.



Variables of interest for the DSA:

> Nominal exchange rate (currency units per U.S. dollar)

V. QUARTERLY EXTERNAL DEBT STATISTICS (QEDS)

Access

Open

http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,m enuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html

To access the SSDS/QEDS and GDDS/QEDS data, simply click to expand the corresponding tabs in the top left corner of the page. The external debt country data is located under "Country Data" in the respective tabs.



Argentina Select country here	
Table 1 - Gross External Debt Position by Sector 2/	
Data are in USD millions	2015Q2
0001_T1_General Government	72,188
0002_T1 Short-term	388
0003_T1 Currency and deposits 3/	0
0004_T1 Debt securities	2
0005_T1 Loans	
0006_T1 Trade credit and advances	
0007_T1 Other debt liabilities 4/ 5/	388
0008_T1 Long-term	71,800
0009_T1 Special drawing rights (allocations) 6/	0
0010_T1 Currency and deposits 3/	0
0011_T1 Debt securities	43,350

In the top right hand corner, you have buttons to share, to download (as Excel, CSV, Tabbed TXT, or PDF), to print, and to obtain additional information about the dataset. At the bottom of the page, there are footnotes about the items in the table.

	< ¥) i
Click to	download data	123
2016Q	1 /2	2016Q2
72,873	100,	971 🔺
391	9,	831
0	Click for information about data	0
122		
391	9,	831
72,482	91,	140
0		0
0		0

Description

The World Bank Quarterly External Debt Statistics contains detailed quarterly external debt data, starting at the earliest from 1998. The information provided varies by country depending on whether the country subscribes to IMF's Special Data Dissemination Standard (SDDS) or the General Data Dissemination Standard (GDDS)³. Generally, more data is available for the SDDS.

Select a table and on the next page, select a country from the drop down menu.

³ Seventy countries currently participate in the SDDS/QEDS database and 48 LIC countries participate in the GDDS/QEDS database.

Variables of interest for the DSA:

- General government external debt (short-term and long-term) 4
- > Public sector external debt (short-term and long-term) 5
- Publicly-guaranteed private sector external debt position (short-term and long-term)⁶
- Gross foreign currency and foreign-currency-linked general government external debt⁷
- > General government debt-service payment schedule[®]
- Short-term general government gross external debt (on an original maturity basis) 9

Download

Example: Obtain foreign currency and domestic currency debt for the most recent quarter to date from Chile and Thailand.

- 1. Open SDDS/QEDS Country data page and click table 2: Gross External Debt Position: Foreign Currency and Domestic Currency Debt (Encouraged component)
- 2. Select a country from the drop down menu.

⁴ Table 1 for SDDS; unavailable for GDDS.

⁵ Supplementary Table 1.3 for SDDS; Table 1 for GDDS.

⁶ Supplementary Table 1.3 for SDDS; Table 1 for GDDS.

⁷ Supplementary Table 2.1 for SDDS; unavailable for GDDS.

⁸ Table 3 for SDDS; Table 2 for GDDS.

⁹ Supplementary Table 3.1 for SDDS; unavailable for GDDS.

- 3. You should now see a table with values for selected country. You can download this data to other programs, to excel by clicking the button in the top right corner of the page.
- 4. If you have performed the steps correctly, you should be able to see a table like the one below.

Table 2 - Gross External Debt Position Foreign Currency and Domestic Currency Denominated Debt 3/ 4/

Table 2 - Gross External Debt Position Foreign Currency and Domestic Currency Den	ominated Debt 3/ 4/
Data are in USD millions	2015Q2
0071_T2_Foreign currency 5/	144,019
0072_T2 Short-term	16,424
0073_T2 Long-term 6/	127,595
0074_T2_Domestic currency 7/	7,033
0075_T2: Short-term	302
0076_T2 Long-term	6,731
0077_T2_Unallocated	D
0078_T2_Gross External Debt Position	151,051