

# FROM COUNTRY RISK, TO VOLATILITY, TURMOIL AND CRISIS

CIFE SEMINAR NICE MAY 6-8, 2020  
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- ▶ IIF 2020
- ▶ IMF yearly report and WEO 2020
- ▶ US Treasury and US FFIEC 2020
- ▶ BIS reports 2019-20
- ▶ C-Bonds website
- ▶ Lee Buchheit: <https://www.iflr.com/Article/3866554/Q-A-with-sovereign-debt-legend-Lee-Buchheit.html>
- ▶ [file:///C:/Users/bouchetm/Downloads/chapter-8-the-debt-restructuring-process%20\(1\).pdf](file:///C:/Users/bouchetm/Downloads/chapter-8-the-debt-restructuring-process%20(1).pdf)
- ▶ <https://www.youtube.com/watch?v=U1HZik7swFI>

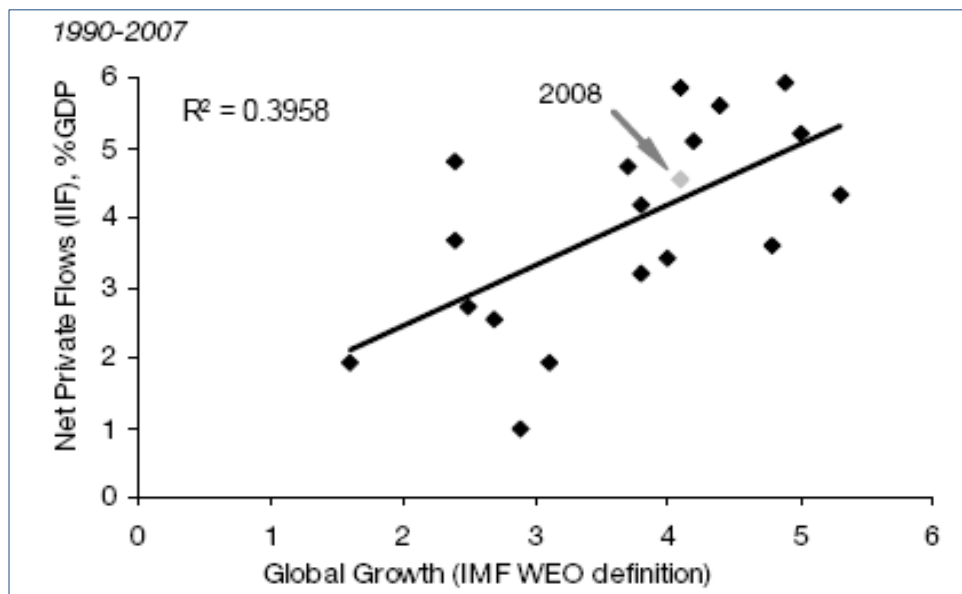
## EXTERNAL DEBT ANALYSIS

### 5 Objectives:

1. Examining the robustness of debt-driven **growth** and the sources of **vulnerability**
2. Tackling the **structure** of the external liabilities
3. Assessing debt servicing **sustainability** , i.e., **liquidity & solvency** prospects
4. Identifying **warning indicators** of upcoming debt crisis?
5. Analyzing **debt restructuring** workouts

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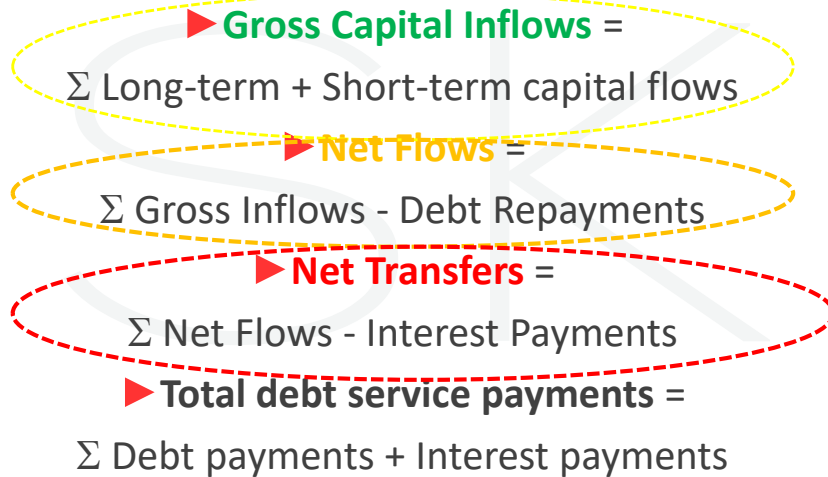
## EXTERNAL FINANCING HELPS BOOSTING GDP GROWTH



IIF, Washington, D.C.

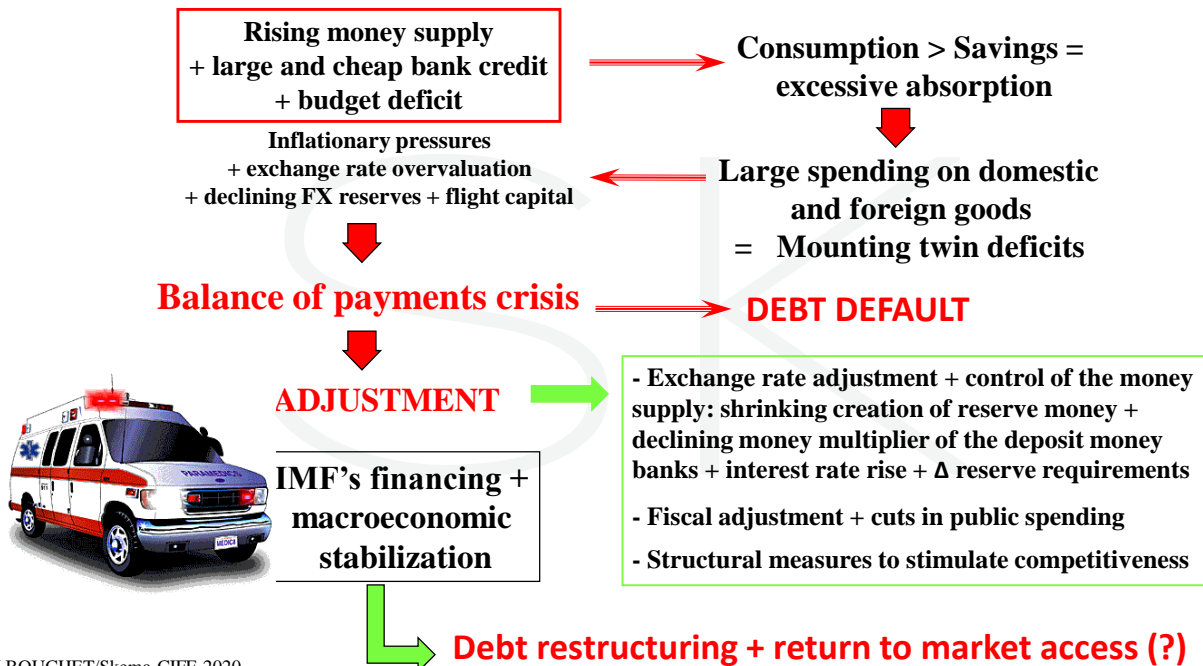
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## WHY/WHEN DOES A FINANCIAL CRISIS ERUPT? GROSS AND NET FLOWS

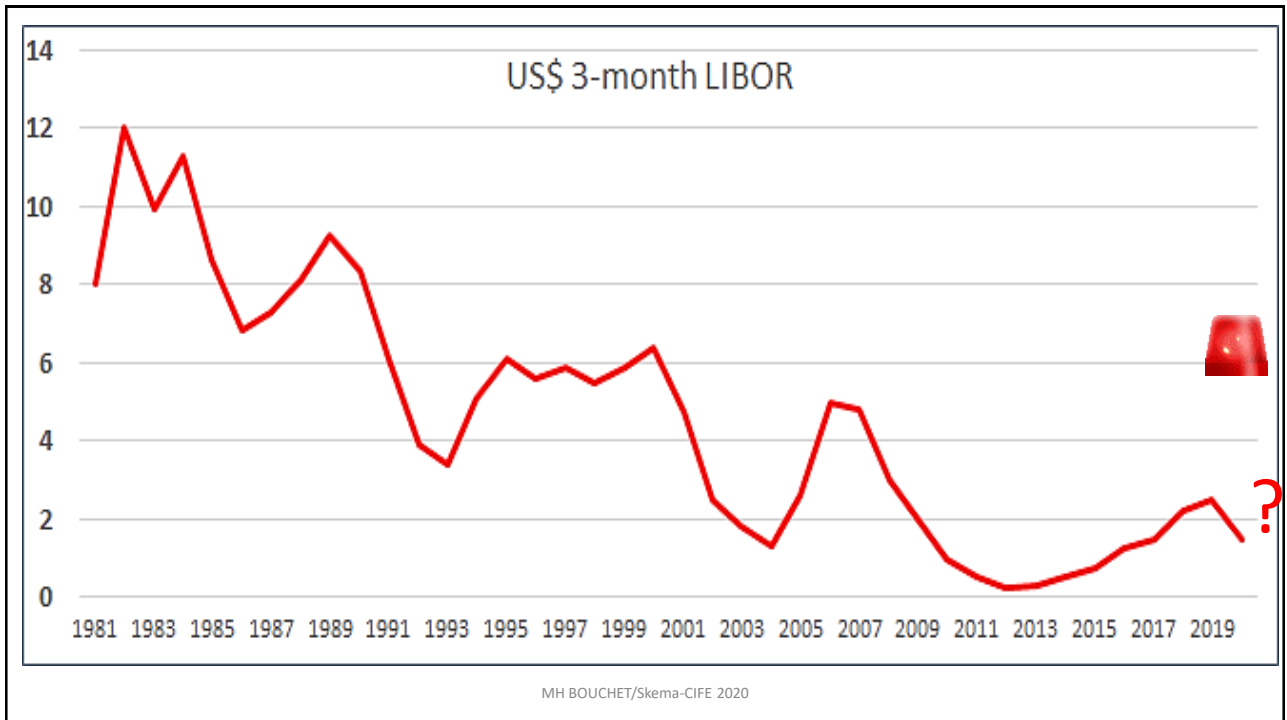


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### Roots of external financial crisis



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## RISK MANAGEMENT AND BOP ANALYSIS

- + Export of goods f.o.b.
- Imports of goods f.o.b.
- = **Trade balance**
- +/- Exports/Imports of non-financial services
- Interest payments
- + Investment income (dividends) credit/debit
- + (-) Private/Official unrequited transfers
- = **Current account balance**
- +/- FDI
- +/- Portfolio capital Flows
- + LT Capital Inflows
- Debt Servicing Payments
- +/- ST Capital Flows
- +/- Reserve Variation

## EXTERNAL DEBT ANALYSIS

**FLOWS:** Balance of payments analysis and capital flight

- ▶ Liquidity
- ▶ Sustainability of debt strategy (refinancing, market access, rescheduling, restructuring)

➡ **Liquidity**

**STOCKS:** Structure of debt by creditors, maturity (ST/LT), currency and interest rates (fixed/floating)

- ▶ Mismatch (interest rate, currency, maturity)
- ▶ Solvency ratios
- ▶ London Club debt : secondary market discounts
- ▶ Spread/margin over US T Bills and CDS

➡ **Solvency**

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## EXTERNAL DEBT ANALYSIS: THE DUAL FACE OF COUNTRY RISK

### *Liquidity Risk*

- ▶ Debt Service Ratio:  $(P+I/X)$
- ▶ Interest Ratio  $(I/X)$
- ▶ Current account/GDP
- ▶ Growth rate of exports/ Average external interest rate

### *Solvency Risk*

- ▶ Debt/Export ratio
- ▶ Debt/GDP ratio
- ▶ Debt/Reserves
- ▶ ST Debt/Total Debt
- ▶ ST Debt/Reserves
- ▶ Reserve/Import ratio

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# LIQUIDITY AND SOLVENCY THRESHOLDS

## Flow variable

► **Liquidity** = Debt Service ratio < 33% of X Interest/X ratio < 25%

## Stock variable

► **Solvency** = Debt/GDP < 66%\*

Debt/Exports < 150%

Reserves/months of Imports > 6 months

\* average debt crisis threshold 1970-2010 Reinhart/Rogoff (Maastricht)

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**Hello CIFE Master  
Students! HELP!**

	2016	2017
Foreign Direct Investment	375	100
Imports of Goods	-4650	-5250
Long-term capital inflows	1225	1300
Portfolio Investment (net)	200	150
Reserve variation		
Short-term capital payments	-465	-1200
Private unrequited transfers	125	100
Net Errors and omissions	-275	-950
Official unrequited transfers	300	125
Long-term capital payments	-985	-1200
Short-term capital inflows	325	1000
Service Income (net)	625	500
Current account balance		
Trade balance	900	-1100
Interest Payments	-1750	-1855
Exports of Goods		

**Note: Country GDP: 15000 (end-2017)**

**Official Reserve Assets ( end-2015): 5500**

**External Debt Stock (end-2015) 17000**

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**Good Job!**  
Now calculate the DSR and the Reserve ratios!

	2016	2017
Exports of Goods	5550	4150
Imports of Goods	-4650	-5250
Trade balance	900	-1100
Service Income (net)	625	500
Interest Payments	-1750	-1855
Official unrequited transfers	300	125
Private unrequited transfers	125	100
Current account	200	-2230
Portfolio Investment (net)	200	150
Foreign Direct Investment	375	100
Long-term capital inflows	1225	1300
Long-term capital payments	-985	-1200
Short-term capital inflows	325	1000
Short-term capital payments	-465	-1200
Net Errors and omissions	-275	-950
Reserve variation	-600	3030
	0	0

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**Very good job!**

	2017
DSR (P+I) / XGS	92%
Liquidity Int/Exports of GS	40%
SOLVENCY	113%
Reserves 2016	6100
Reserves 2017	3070
Gross inflows	1050
Net inflows	-1350
Net transfers	-3205
R/M in months	7,02
Trade Ratio end-2017	66%
DSR end-2017	92%
Current account/GDP end-2017	-15%
Reserve level end-2017	3070
Reserve ratio	7
Average rate	-11%
External debt 2017	17000

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## SOURCES OF EXTERNAL FINANCING

### Official (bilateral + multilateral)

- Paris Club (government to government credits)
- Export insurance credit
- IFIs
- RDBs
- Debt cancellation

### Private

- FDI
- Portfolio Investment
- London Club (International bank loans)
- Working capital lines
- ST Trade credits
- Bonds & International debt securities
- Arrears and rescheduling

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## TWO COUNTRIES = TWO DEBT TRAJECTORIES

### Solvençia

Public Debt/GDP= 100%

- ▶ Diversified export base
  - ▶ Diversified markets
  - ▶ Mainly official creditors
  - ▶ Long-term maturities= 12 years
  - ▶ Fixed rate for 80% of debt
  - ▶ Similar currency structure X revenues/liabilities
- = no mismatch!

### Liquidia

Public Debt/GDP= 100%

- ▶ Main export: hydrocarbons
- ▶ One main export destination: EU
- ▶ X revenues in €/debt payments in \$
- ▶ Average debt maturity: 3 years
- ▶ 66% of debt on floating rates
- ▶ Large and growing private debt (corporate, bank and households)
- ▶ Large reliance on private capital markets

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## NORTH SEA GLOBAL EQUITY MANAGEMENT

Risk Categories	I no.	Indicators	Risk Assessment	Data Frequency	Source
<b>1. Real Economy</b>					
"+, -, 0	1	GDP growth rate - %	performance	quarterly	WB
"+, -, 0	2	Budget Deficit/GDP - %	overheating	quarterly	WB/IMF
only > 0	3	REER 2005=100	competitiveness	quarterly	BIS
"+, -, 0	4	Credit growth %	overheating	quarterly	WB/IMF
"+, -, 0	5	CPI%	overheating	quarterly	IMF & CB
<b>2. External Finance</b>					
"+, -, 0	6	current account/GDP - %	competitiveness	quarterly	IMF&IIF
only > 0	7	DSR - % XGS	liquidity	quarterly	IMF&IIF
only > 0	8	Ext. Debt/Exports %	liquidity	quarterly	IMF&IIF
only > 0	9	Ext. Debt/GDP - %	solvency	quarterly	IMF&IIF
"+, -, 0	10	Reserves coverage - months	liquidity	quarterly	IMF&IIF
only > 0	11	Net Ext Liabilities/GDP%	sustainability	quarterly	BIS/IMF
only > 0	12	Reserves/ST DEBT - %	liquidity	quarterly	IMF
<b>3. Spill-over</b>					
only > 0	13	Trade openness ratio - %	performance	quarterly	WB
only > 0	14	Capital Flight / Reserves - %	capital flight	quarterly	BIS
<b>4. Risk Ratings in bp</b>					
only > 0	15	5-year CDS	default	weekly	Bloomberg
only > 0	16	Corruption Index	governance	annual	TI
only > 0	17	Credit Rating	risk assessment	randomly	S&P
only > 0	18	Human Development Index	governance	annual	UNDP
only > 0	19	Doing Business index	performance	annual	WB

## FX RESERVES AS BUFFER OF LIQUIDITY CRISIS

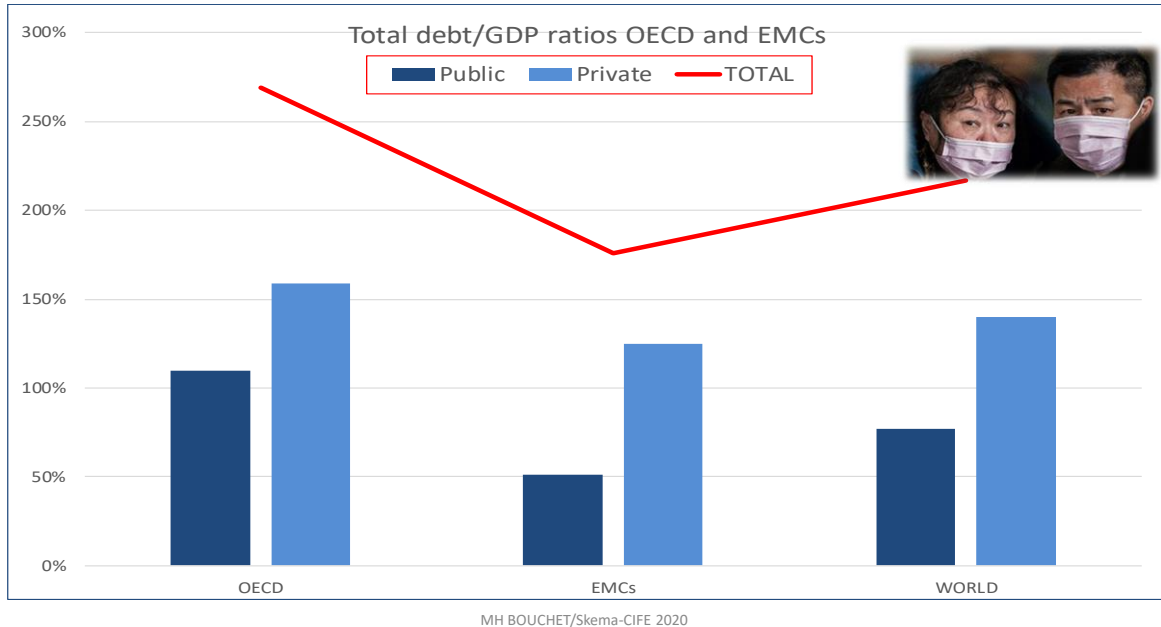
	FX Reserves as % of short term debt	FX reserves as % of GDP
India	427%	15%
China	399%	27%
Mexico	334%	16%
Korea	330%	26%
Taiwan	277%	82%
Switzerland	63%	96%
Japan	45%	23%
Canada	13%	5%
Italy	5%	2%
UK	2%	4%
Germany	2%	1%
France	2%	2%

*Reserves and GDP for 2016, short-term debt as of 2016Q3*

*Sources: National Authorities; World Bank; International Monetary Fund; Haver Analytics*

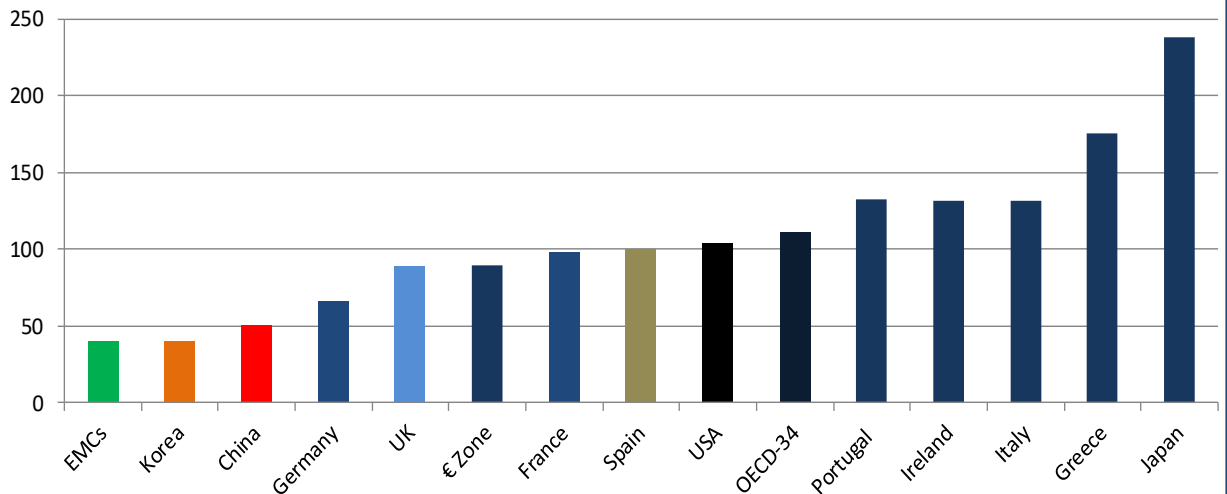
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## WORLD INDEBTEDNESS IN 2020

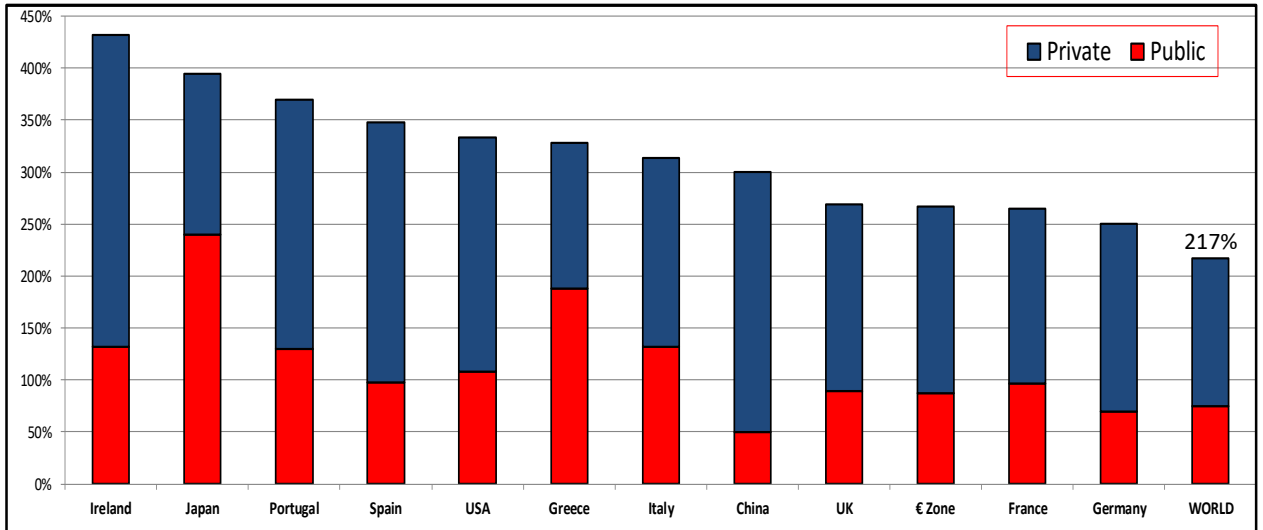


## PUBLIC DEBT : STILL UNDER CONTROL?

### Public debt to GDP % 2018



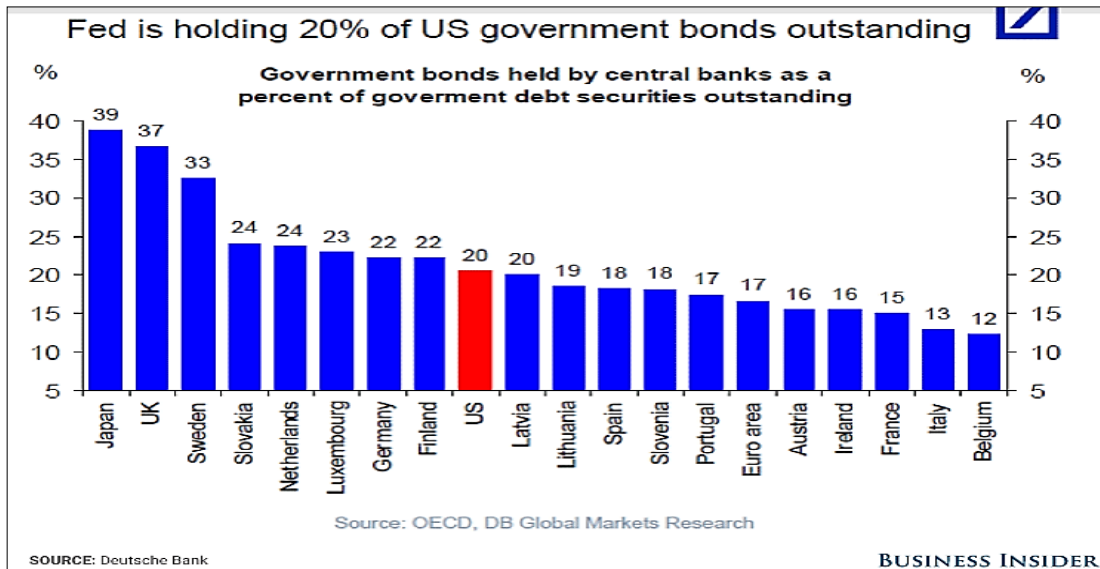
## OVERALL NATIONAL DEBT BURDENS IN 2020 BEFORE VIRUS-RELATED BUDGETARY STIMULUS!



Source: IMF &amp; BIS 2020

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## CENTRAL BANKS' ACCOMODATIVE MONETARY POLICY AND SOVEREIGN DEBT



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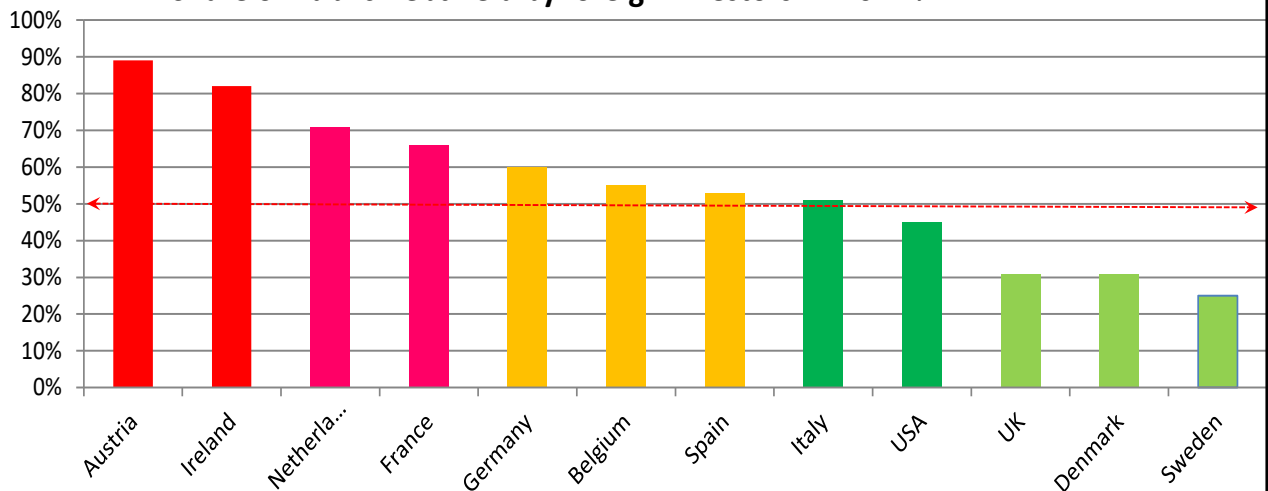
## GLOBAL PRIVATE SECTOR DEBT IN % OF GLOBAL GDP (COMPANIES AND HOUSEHOLDS)



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## CAPITAL MARKET GLOBALIZATION = INVESTMENT FUNDS AND RATING AGENCIES IN THE DRIVING SEAT

Share of Public Debt held by foreign investors in 2017 %

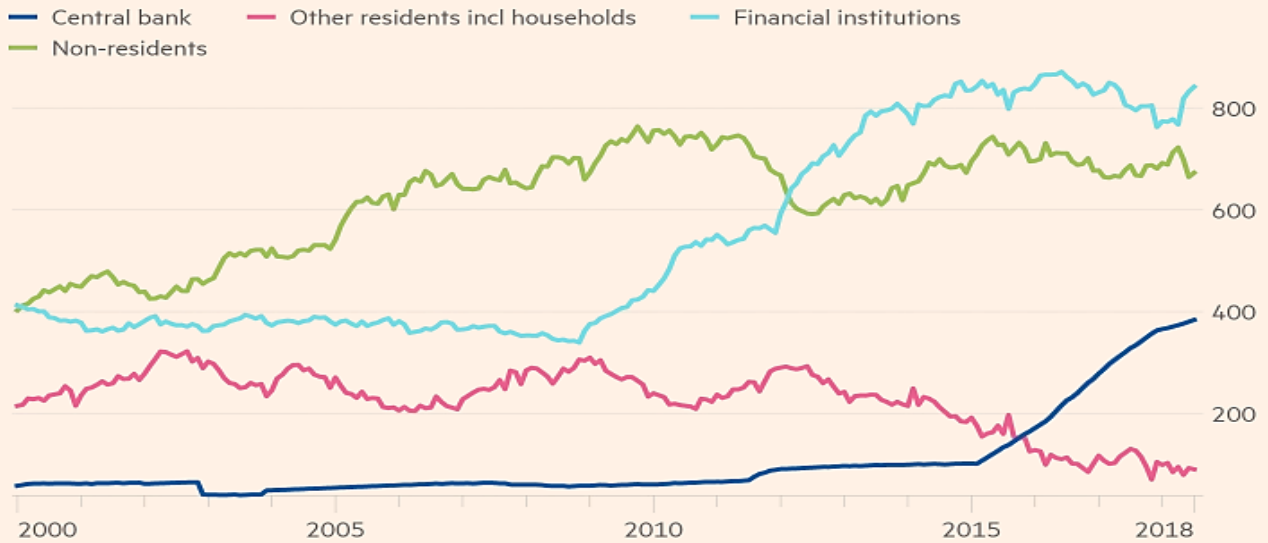


Source: FT, IMF, Natixis, US Treasury 2017

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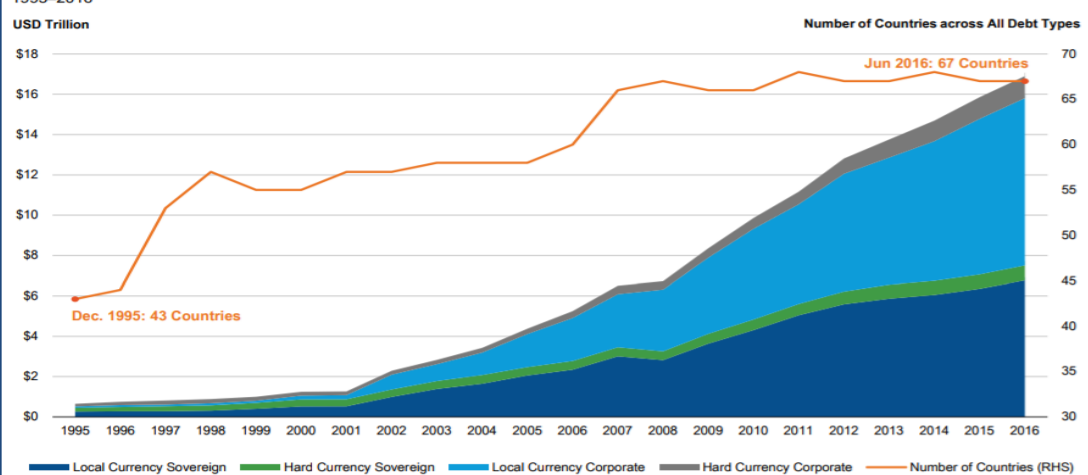
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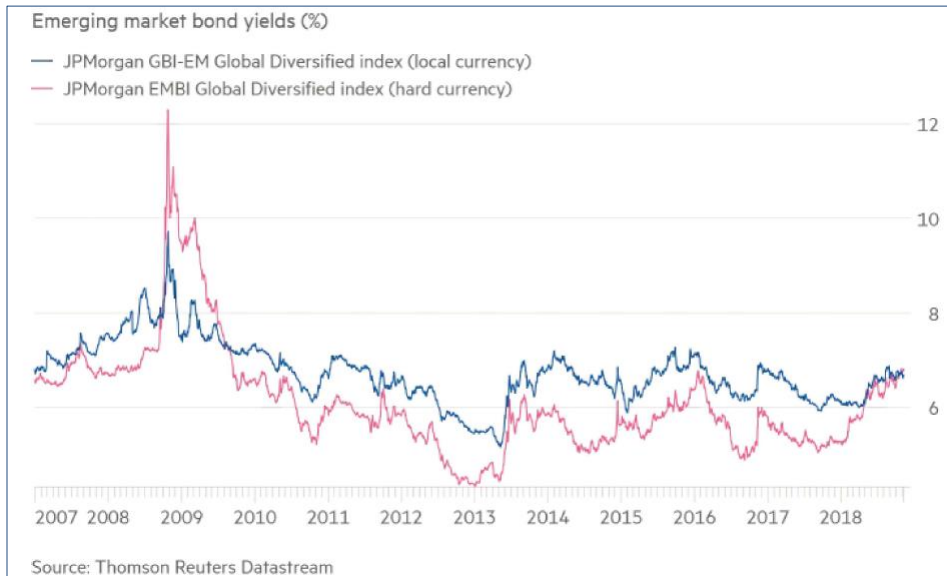
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Emerging-Market Debt Grew from US\$0.6 trn in 1995 to US\$17.1 trn in June 2016

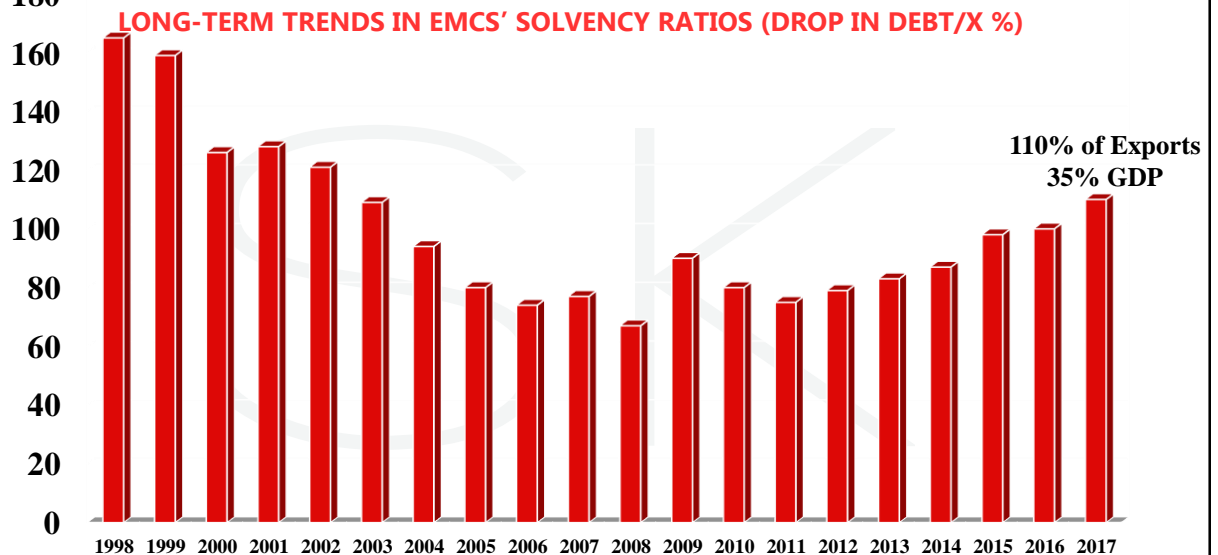


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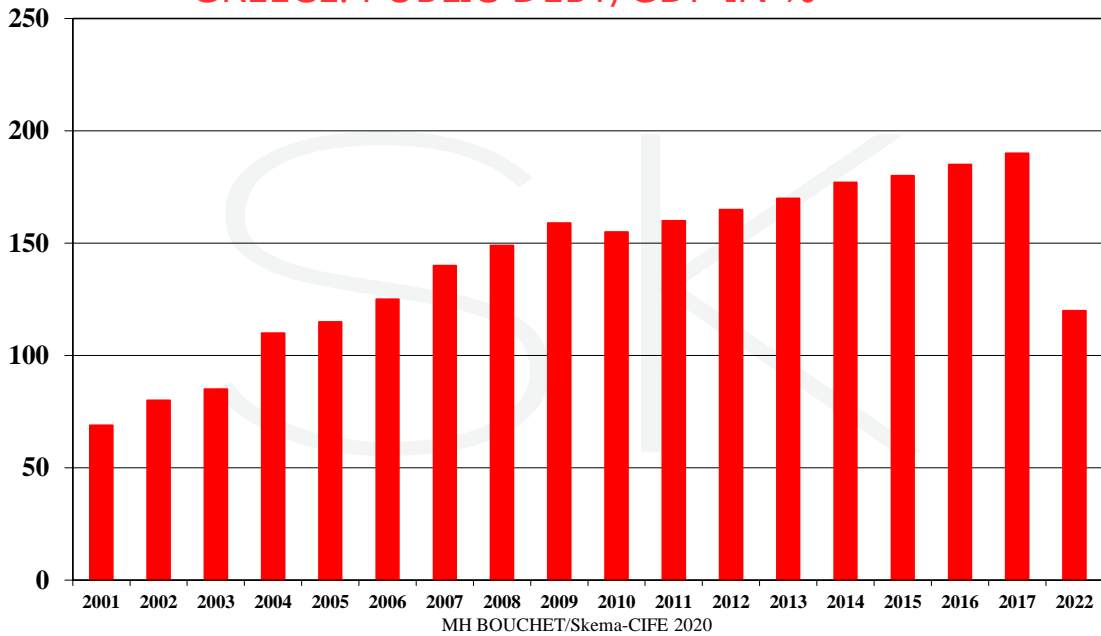
## REVERSAL IN THE HISTORIC GAP BETWEEN EM LOCAL CURRENCY BOND YIELDS AND SUPPOSEDLY SAFER US-DOLLAR BONDS



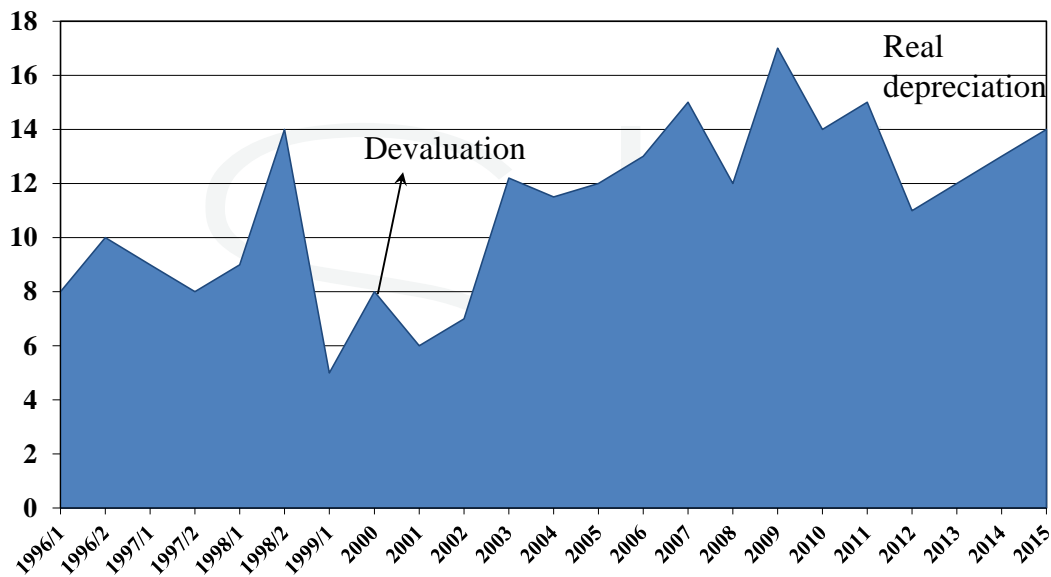
## SUCCESSFUL ECONOMIC ADJUSTMENT:






## GREECE: PUBLIC DEBT/GDP IN %



## BRAZIL: RESERVE/IMPORT COVERAGE RATIO MONTHS OF IMPORT



# EXTERNAL FINANCING PROFILES

RATIOS	 VIETNAM	 GABON	 ECUADOR
1. CA/GDP	+2%	-4%	2%
2. Debt/GDP	50%	45%	35%
3. Coface	B	C	C
4. GDP pc \$	2200	7700	6500
5. R/M	2	5	2
6. FDI/GDP	8%	8%	<1%
7. Doing Bus	82	164	114

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## DEBT DATA?

- [http://www.bis.org/statistics/annex\\_map.htm](http://www.bis.org/statistics/annex_map.htm)
- <http://stats.bis.org/statx/srs/table/A6?c=TN&p=20144>
- <http://www.clubdeparis.org/en/communications/page/as-of-31-december-2015>

Morecco

Table1 Joint BIS-IMF-OECD-World Bank Statistics on External Debt (mill. US\$)

Data are in millions	2016Q1	2016Q2	2016Q3	2016Q4	2016Q1
<b>A1. Loans and other credits (Debt of)</b>					
01_Cross-border loans, by BIS reporting banks	8,289	8,768	8,882	9,125	9,514
02_o/w to nonbanks	6,868	6,040	6,235	6,059	6,344
03_Official bilateral loans, total	--	--	--	--	--
04_o/w aid loans	--	--	--	--	--
05_o/w other	--	--	--	--	--
06_Multilateral loans, total	6,766	7,113	7,266	--	--
07_o/w IMF	0	0	0	--	--
08_o/w other institutions	6,766	7,113	7,266	7,621	7,726
09_Insured export credit, Berne Union	7,807	7,721	7,660	7,144	7,173
10_o/w short term	4,613	4,634	4,690	4,421	4,484
11_SDR allocations	774	790	788	778	781
<b>A2. Loans and other credits (Debt due within a year)</b>					
12_Liabilities to BIS banks (cons.), short term	2,674	2,301	2,429	2,378	2,617
13_Multilateral loans, IMF, short term	--	--	--	--	--
<b>B1. Debt securities (All maturities)</b>					
14_Debt securities held by nonresidents	--	6,442	--	--	--
<b>B2. Debt securities (short term, original maturity)</b>					
15_Debt securities held by nonresidents	--	132	--	--	--
<b>C. Supplementary information on debt (liabilities)</b>					
16_International debt securities, all maturities	6,864	7,863	8,120	8,037	8,102
17_o/w issued by nonbanks	6,664	7,662	7,820	7,738	7,802
18_International debt securities, short term	64	66	66	64	0
19_o/w issued by nonbanks	64	66	66	64	0
20_Paris Club claims (ODA)	--	--	--	--	--
21_Paris Club claims (non ODA)	--	--	--	--	--
22_Liabilities to BIS banks, locational, total	12,828	12,632	12,676	12,784	13,237
23_Liabilities to BIS banks, consolidated, total	10,834	10,309	10,568	10,783	11,184
<b>D. Memorandum items: selected foreign assets</b>					
24_International reserves (excluding gold)	17,864	19,762	21,680	22,254	24,327
25_o/w SDR holdings	770	786	773	783	778
26_Portfolio investment assets	--	--	--	--	--
27_Cross-border deposits with BIS rep. banks	4,838	6,767	6,071	6,372	6,787
28_o/w deposits from nonbanks	2,604	2,689	2,472	2,333	2,484



## THE DEBT TRAP IN A NUTSHELL

### « Austerity + deficits »

- ▶ Deficit shrinking with spending cuts + wage reduction + tight fiscal and monetary policy = **GDP fall** =
- ▶ solvency ratios worsening = **Rating downgrading** = Higher borrowing costs



### « Deficit-driven stop & go »

- ▶ Large primary fiscal deficit = higher consumption = larger external deficit = larger unfunded financing requirements =
- ▶ GDP rises = « stop & go » =
- ▶ **Rating downgrading!** = Higher borrowing requirements



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## EXTERNAL DEBT ANALYSIS II

$r$  = average rate of interest and  $g$  = average GDP growth rate

▶  $DEBT_t = DEBT_{t-1} * (1+r) - \text{Primary Budget Balance}$

▶  $GDP_t = GDP_{t-1} * (1+g)$

▶  $\frac{DEBT_t}{GDP_t} = \frac{DEBT_{t-1} * (1+r) - \text{Primary Budget Balance}}{GDP_{t-1} * (1+g)}$

$$\frac{DEBT}{GDP}_t = \frac{DEBT}{GDP}_{t-1} * \frac{1+r}{1+g} - \frac{\text{Primary Budget Balance}}{GDP}$$

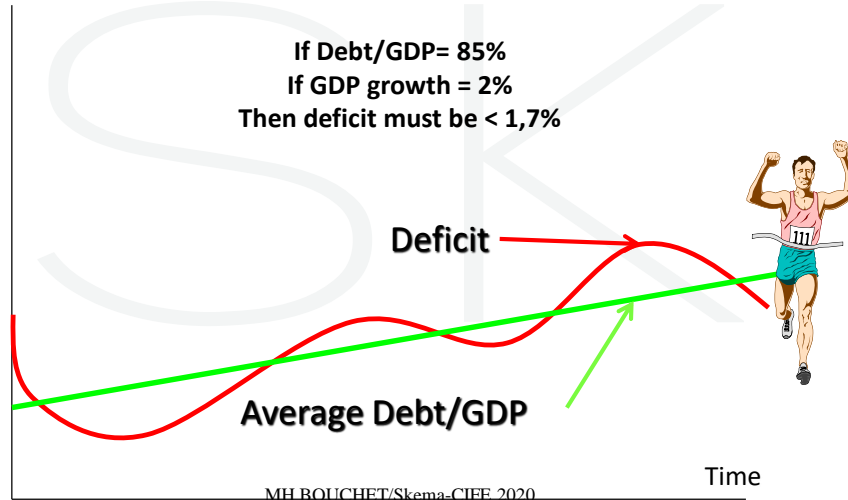
Reducing DEBT= Reducing  $r$ , increasing  $g$ , or boosting primary surplus

## EXTERNAL DEBT ANALYSIS III

How to stabilize the Debt/GDP ratio?

Necessary condition: Deficit must be  $< (\text{Debt/GDP} * \text{GDP growth rate})$

If Debt/GDP = 85%  
If GDP growth = 2%  
Then deficit must be  $< 1,7\%$



## External Debt Analysis IV

How to stabilize the Debt/GDP ratio?

Necessary condition: Deficit must be  $< (\text{Debt/GDP} * \text{GDP growth rate})$

$g$  = growth rate of GDP and  $d$  = deficit/GDP ratio

$$\begin{aligned} \text{DEBT}_t &= \text{DEBT}_{t-1} + \text{DEF}_{t-1} & \text{DEF} &= d * Y_t & \Delta Y_t &= Y_{t-1} (1+g) \\ \frac{\text{DEBT}_t}{Y_t} &= \frac{\text{DEBT}_{t-1} + d * Y_{t-1}}{Y_t} \end{aligned}$$

$$\begin{aligned} \frac{\text{DEBT}_t}{Y_t} &= \frac{\text{DEBT}_{t-1}}{Y_{t-1}} * \frac{Y_{t-1}}{Y_t} + \frac{d}{1+g} \\ &= \left( \frac{1}{1+g} \right) * \frac{\text{DEBT}_{t-1}}{Y_{t-1}} + \frac{d}{1+g} = \frac{d/1+g}{1 - (1/1+g)} = \frac{d}{g} \end{aligned}$$

So, if  $\text{DEBT}/Y < 120\%$ ,  $\text{DEF}$  should be  $< 3\%$  for a  $2,5\%$  GDP growth rate