

# THE BALANCE OF PAYMENTS IV

## EXTERNAL DEBT ASSESSMENT

### "HOW MUCH GETS TOO MUCH?"



CIFE SEMINAR NICE APRIL 2021  
MICHEL-HENRY BOUCHET

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### Roots of external financial crisis

**Rising money supply**  
+ large and cheap bank credit  
+ budget deficit

**Inflationary pressures**  
+ exchange rate overvaluation  
+ declining FX reserves + flight capital

**Consumption > Savings =**  
excessive absorption

**Large spending on domestic**  
**and foreign goods**  
= **Mounting twin deficits**

**Balance of payments crisis**

**DEBT DEFAULT**

**ADJUSTMENT**

**IMF's financing +**  
**macroeconomic**  
**stabilization**

- Exchange rate adjustment + control of the money supply: shrinking creation of reserve money + declining money multiplier of the deposit money banks + interest rate rise +  $\Delta$  reserve requirements
- Fiscal adjustment + cuts in public spending
- Structural measures to stimulate competitiveness



**Debt restructuring + return to market access (?)** <sup>2</sup>

## THE CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS

- + Export of goods f.o.b.
- Imports of goods f.o.b.
- = **Trade balance**
- + Exports of non-financial services
- Imports of non-financial services
- + Investment income (credit)
- **Interest payments**
- + Private unrequited transfers
- + Official unrequited transfers
- = **Current account balance**

From less liquid items  
toward more liquid items!



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## The capital account of the balance of payments

### Capital account

- + (-) Direct investment (non debt creating flows)
- + (-) Portfolio investment (NDCF)
- + **LT capital inflows (private + official)**
- **LT debt repayments (bonds/loans)**
- + **ST capital inflows (private + official)**
- **ST debt repayments**
- + (-) Net errors and omissions
- + (-) Counterpart items
- + (-) Change in reserves
- = **Capital account balance**
- + **Exceptional Financing (or arrears)**

From less liquid items  
to more liquid items!



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Exports	5000
Portfolio	150
LT K	1200
Transfers	285
Debt repayments	-1650
ST K	350
Current account	
FDI	325
Imports	-6500
Trade	
Services revenues	1200
Interest payments	-750
E&Os	-455
Counterpart items	100
Change in reserves	
CA/GDP%	
GDP	12500
R/M ratio (months)	
Reserve level 12/2017	4500

 A photograph of Michel Henry Bouchet, the same man as in the first image, but smiling. He is wearing a dark suit, white shirt, and a patterned tie. A light blue speech bubble with a pink border points to him, containing the text "Let's go CIFE!".
 

**Let's go  
CIFE!**

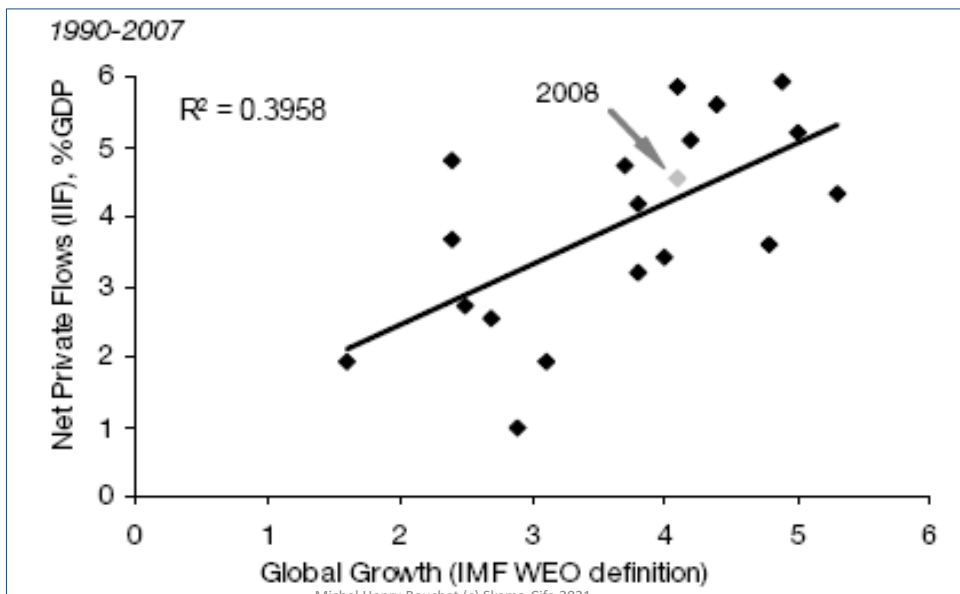
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Exports	5000
Imports	-6500
Trade	-1500
Services revenues	1200
Interest payments	-750
Transfers	285
Current account	-765
FDI	325
Portfolio	150
LT K	1200
Debt repayments	-1650
ST K	350
E&Os	-455
Counterpart items	100
Change in reserves	745
CA/GDP%	-6,12%
GDP	12500
R/M ratio (months)	6,9
Reserve level 12/2017	4500

## EXTERNAL FINANCING HELPS BOOSTING GDP GROWTH



IIF, Washington, D.C.

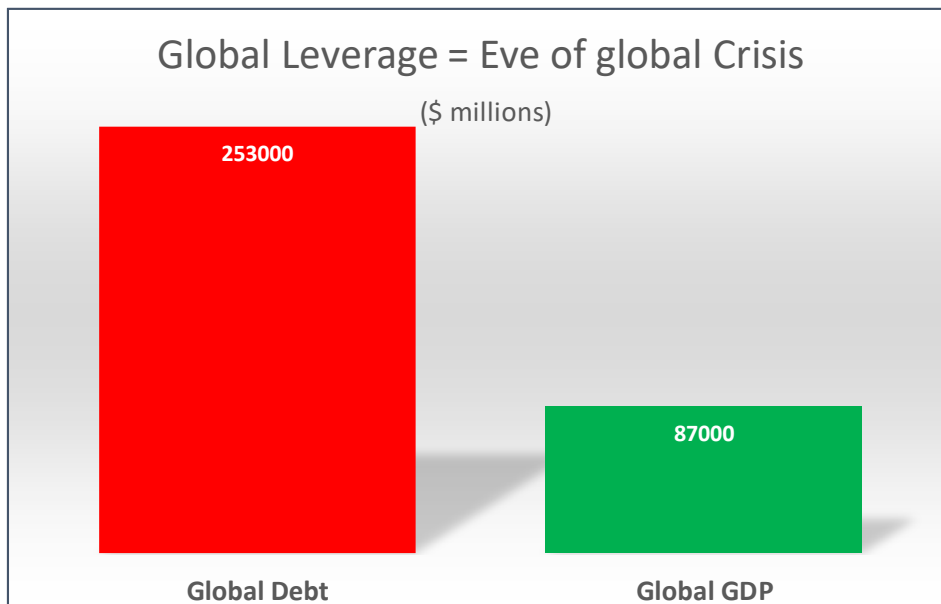
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## US FEDERAL FUNDS RATES 1950-2021



## HOW MUCH IS TOO MUCH? >300%

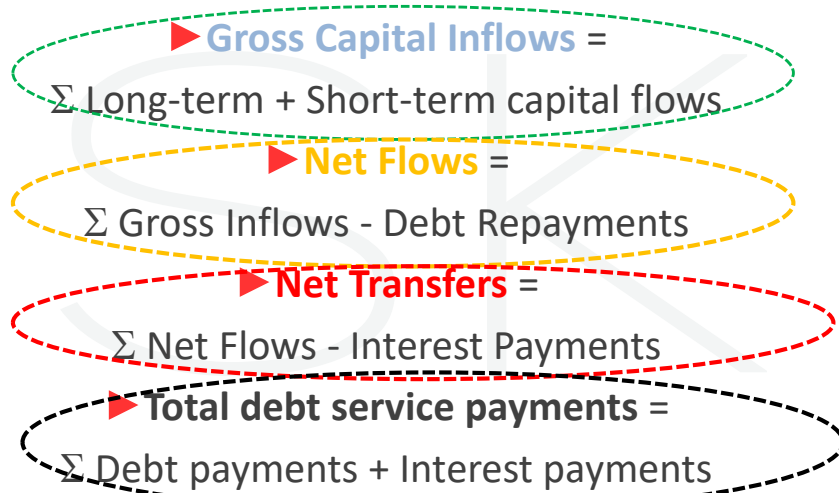


Source: IMF &amp; IIF 2020

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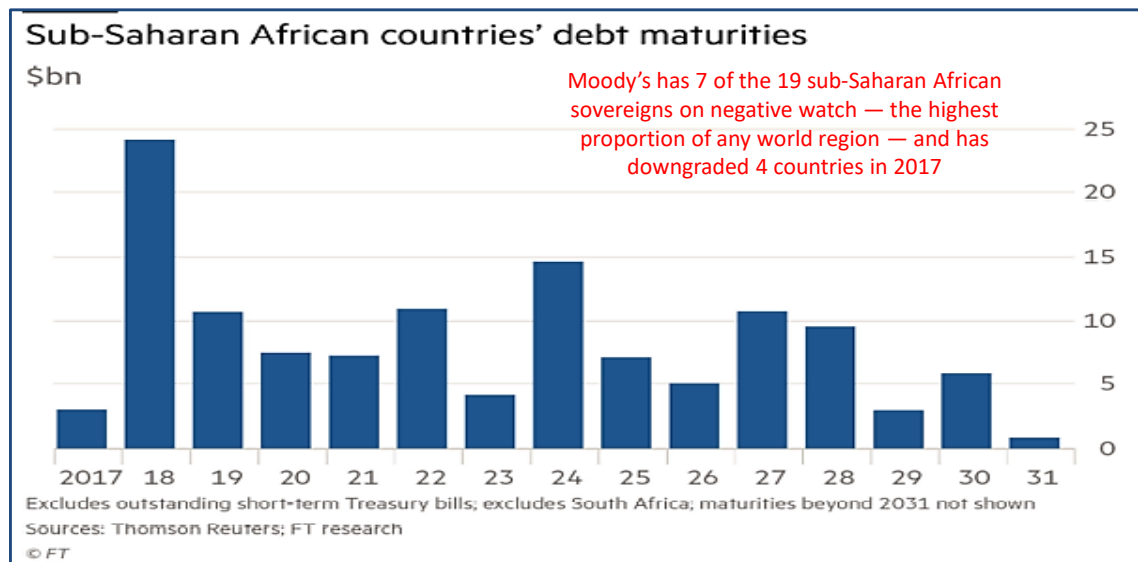
## WHY/WHEN DOES A FINANCIAL CRISIS ERUPT? GROSS AND NET FLOWS



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## SUB-SAHARAN AFRICA: CONCERNS OVER HIGH DEBT LEVELS AND CREDIT RISK RESONATE FOR 2018 AND BEYOND!



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## 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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<b>Emerging Market Economies: Capital Flows</b>				
<i>\$ billion</i>				
	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Capital Inflows</b>				
<u>Total Inflows, Net:</u>	<u>1269</u>	<u>1188</u>	<u>1079</u>	<u>1164</u>
<b>Private Inflows, Net</b>	1232	1156	1032	1112
Equity Investment, Net	668	626	657	675
Direct Investment, Net	545	548	540	560
Portfolio Investment, Net	124	78	117	114
Private Creditors, Net	564	530	375	437
Commercial Banks, Net	118	193	124	151
Nonbanks, Net	446	338	251	287
Official Inflows, Net	37	32	47	53
International Financial Institutions	5	-3	19	27
Bilateral Creditors	31	35	28	25
<b>Capital Outflows</b>				
<u>Total Outflows, Net</u>	<u>-1299</u>	<u>-1360</u>	<u>-1348</u>	<u>-1339</u>
Private Outflows, Net	-946	-825	-981	-950
Equity Investment Abroad, Net	-332	-403	-368	-381
Resident Lending/Other, Net	-614	-422	-613	-570
Reserves (- = Increase)	-352	-534	-367	-388
<b>Memo:</b>				
<u>Net Errors and Omissions</u>	<u>-246</u>	<u>-65</u>	<u>0</u>	<u>0</u>
<u>Current Account Balance</u>	<u>276</u>	<u>236</u>	<u>269</u>	<u>174</u>

Source: IIF

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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
- 

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## Solvencia - case study

BALANCE of PAYMENTS (\$ million)	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Trade Balance	-1 130	-411	-1 577	-2 494	-4 000	-1 050	1 040	1 270	300	-500	-1 500	-4 000	-3 850	750
Merchandise exports	4 882	6 151	7 910	8 061	9 000	10 500	11 000	12 000	13 800	14 000	13 500	12 000	13 650	15 000
Merchandise imports	-6 012	-6 562	-9 487	-10 555	-13 000	-11 550	-9 960	-10 730	-13 500	-14 500	-15 000	-16 000	-17 500	-14 250
Balance on Services, Income & Transfers	-699	-529	-1 044	-2 201	-3 281	-2 107	-75	629	403	465	-184	-1 967	-3 010	-1 263
Services & income receipts	824	1 008	1 464	1 652	1 447	1 629	2 251	2 594	2 730	2 590	2 769	2 244	2 150	2 750
Exports of services	697	879	1 130	1 152	1 286	1 500	1 571	1 714	1 800	1 750	1 929	1 714	1 500	1 850
Interest receipts	124	120	317	486	146	70	650	850	900	800	800	500	600	850
Other services & income receipts	2	9	17	15	15	59	30	30	30	40	40	30	50	50
Services & income payments	-1 737	-1 832	-3 133	-4 448	-5 197	-4 352	-3 077	-2 796	-3 207	-2 825	-3 452	-4 611	-5 385	-4 913
Imports of services	-902	-984	-1 423	-1 583	-1 950	-1 733	-1 494	-1 610	-2 025	-2 175	-2 250	-2 400	-2 625	-2 138
Interest payments	-831	-835	-1 681	-2 831	-3 197	-2 460	-1 433	-1 006	-992	-450	-802	-1 711	-2 235	-2 224
Other services & income payments	-4	-12	-29	-33	-50	-160	-150	-180	-190	-200	-400	-500	-525	-551
Transfers, net	214	295	625	594	469	616	750	830	880	700	500	400	225	900
Private transfers, net	103	182	320	394	269	565	600	630	630	450	400	300	125	650
Official transfers, net	111	113	305	200	200	51	150	200	250	250	100	100	100	250
Current Account	-1 829	-940	-2 621	-4 695	-7 281	-3 157	965	1 899	703	-35	-1 684	-5 967	-6 860	-513

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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

### Stock variables

- **Solvency** =
  - ✓ Debt/GDP < 100% (66% = EMCs)
  - ✓ Debt/Exports < 150%
  - ✓ Reserves/months of Imports > 6 months

### Flow variables

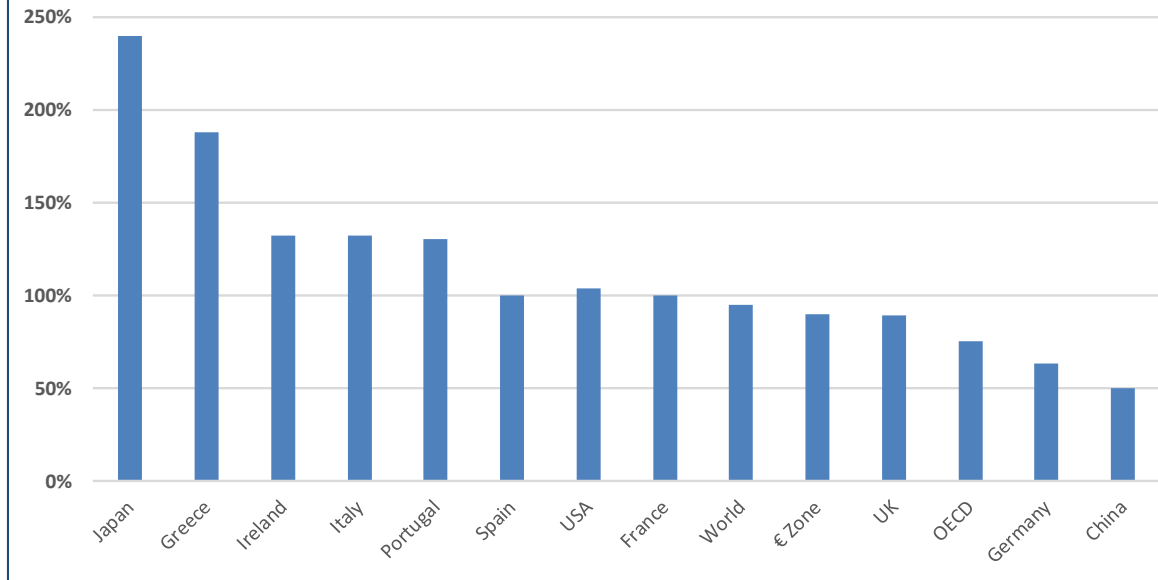
- **Liquidity** =
  - ✓ Debt Service ratio < 33% of X
  - ✓ Interest/X ratio < 25%
  - ✓ Average int. rate/Growth rate of exports



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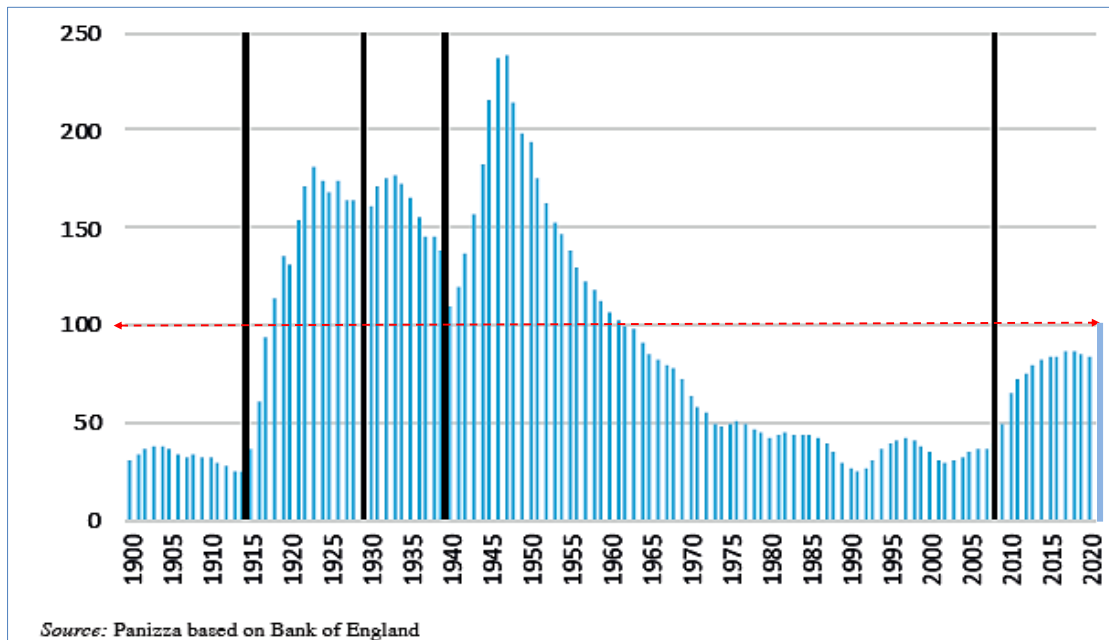
### Public Debt/GDP 2019



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### UK PUBLIC DEBT/GDP RATIO 1900-2020 (WARS AND CRISES)

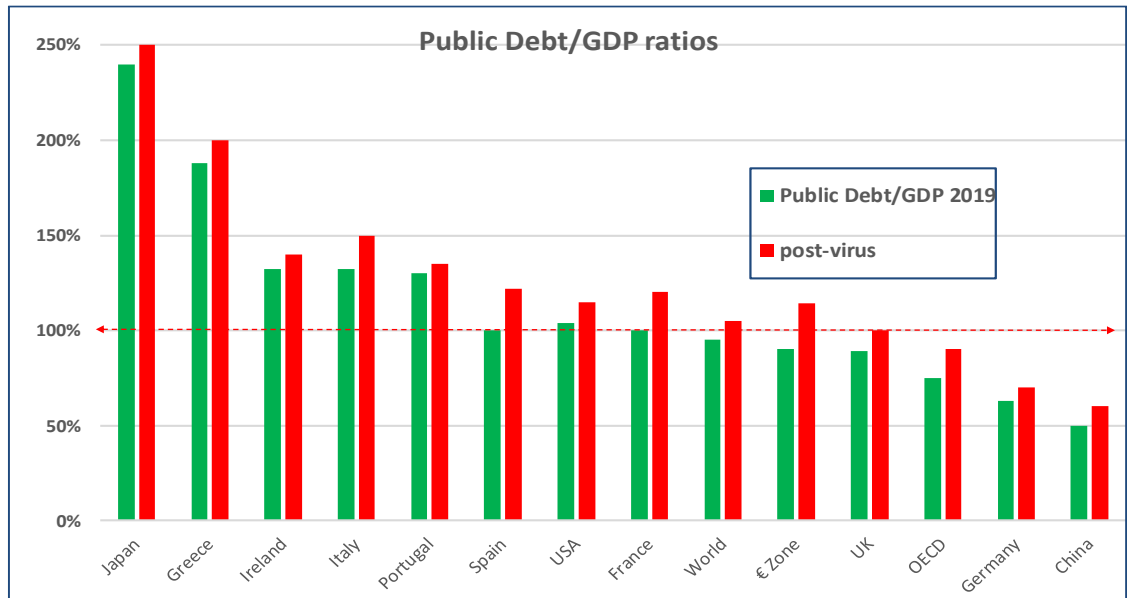


Source: Panizza based on Bank of England

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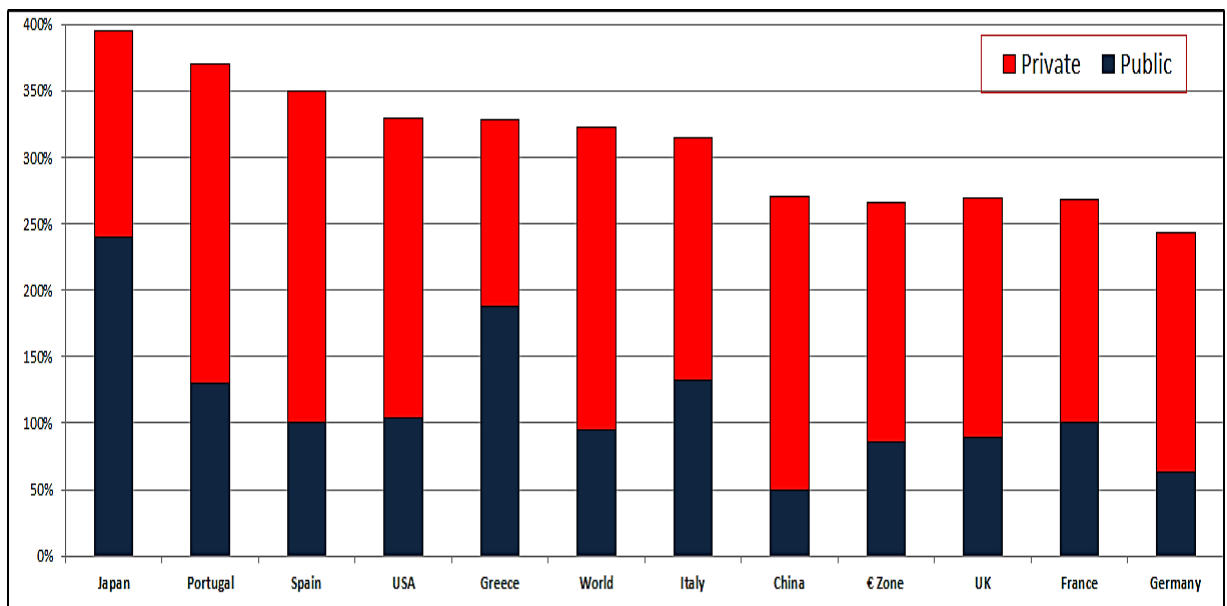
## THE BUDGETARY AND DEBT IMPACT OF THE CORONA VIRUS CRISIS



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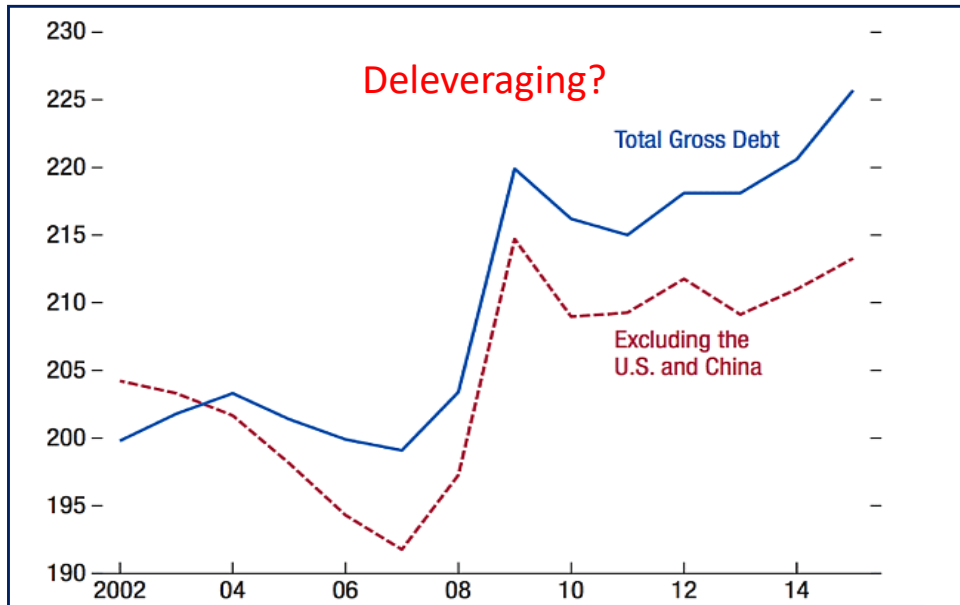
## HOW MUCH IS TOO MUCH?



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



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## US debt burden was even higher after World War II

US government debt (as a % of GDP)



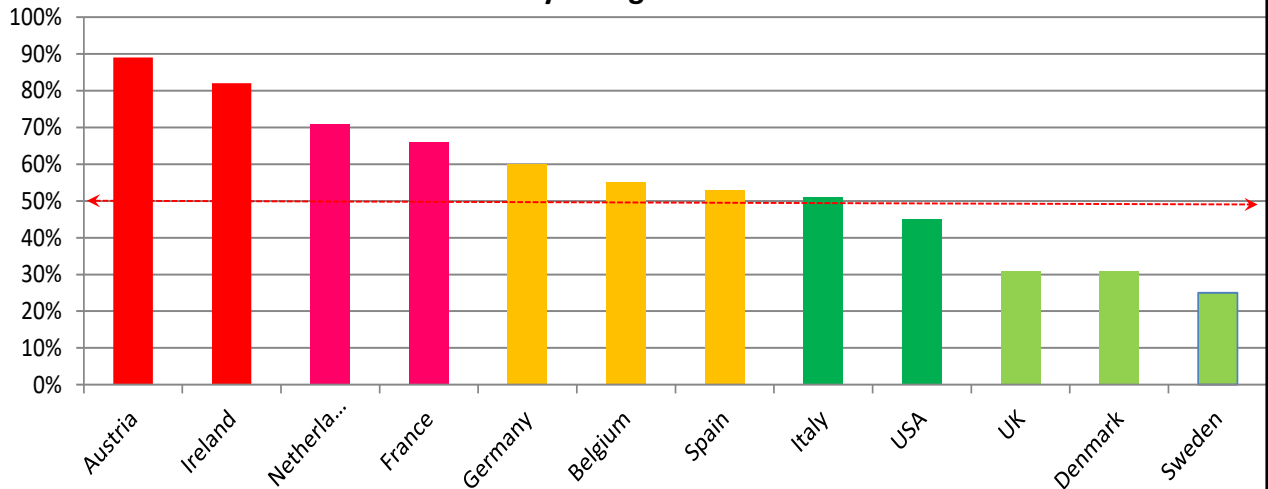
Sources: Reinhart & Rogoff; Federal Reserve  
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## CAPITAL MARKET GLOBALIZATION = INVESTMENT FUNDS AND RATING AGENCIES IN THE DRIVING SEAT

### Share of Public Debt held by foreign investors in 2017 %



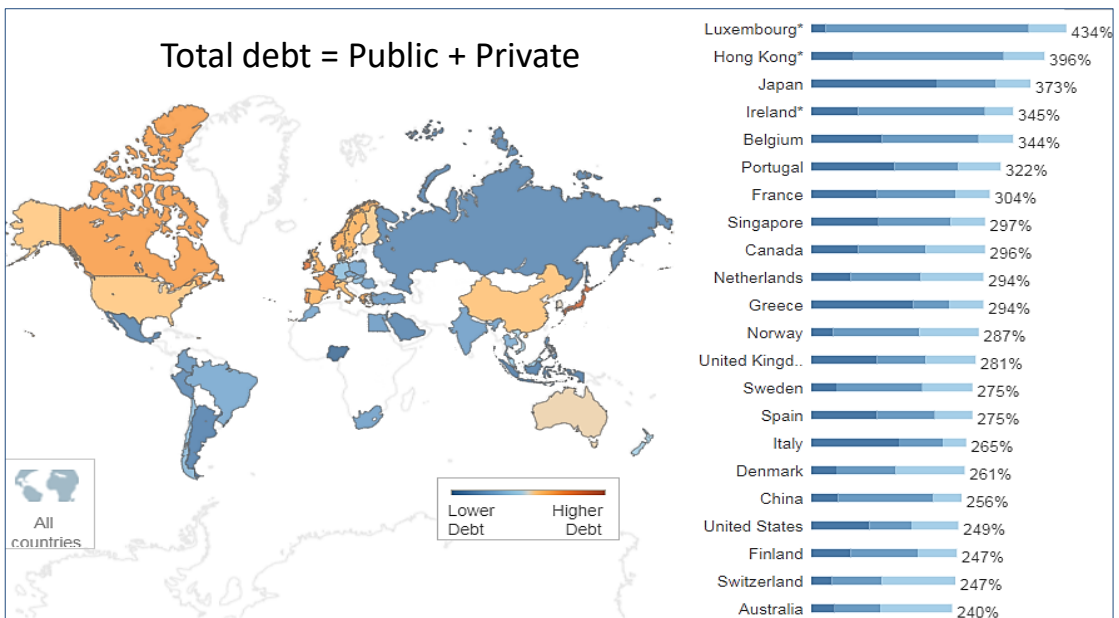
Source: FT, IMF, Natixis, US Treasury 2017

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## SOVEREIGN DEBT 2008-2019: NOT MUCH DELEVERAGING!

### Total debt = Public + Private



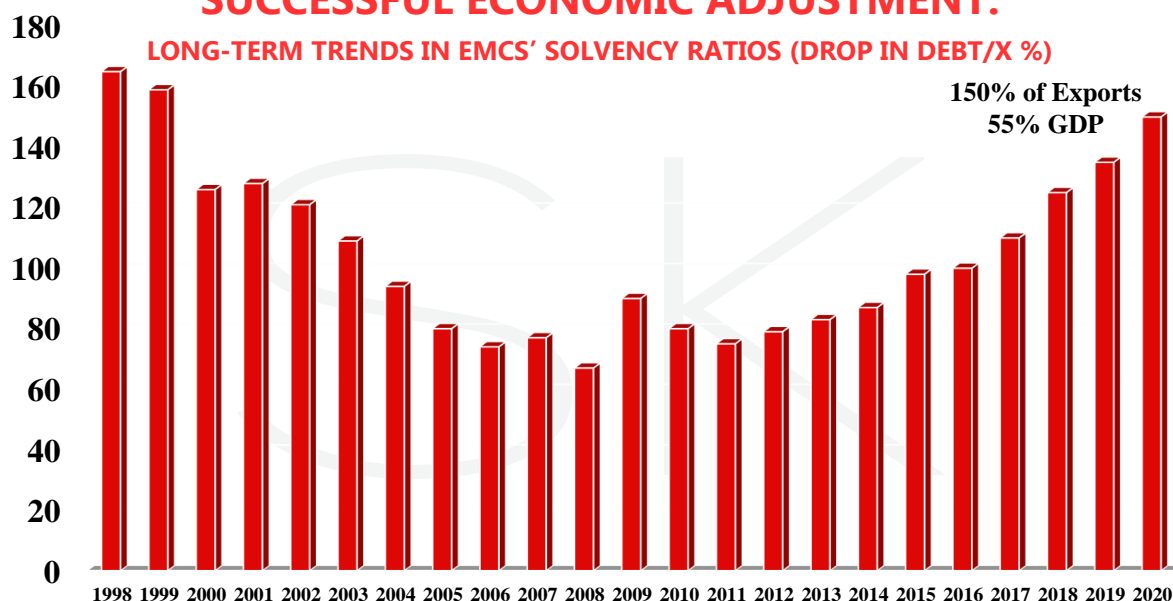
Source: McKinsey Global Institute

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## SUCCESSFUL ECONOMIC ADJUSTMENT:

LONG-TERM TRENDS IN EMCS' SOLVENCY RATIOS (DROP IN DEBT/X %)



Source: IMF

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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>
- ▶ IMF balance of payments  
<https://www.imf.org/en/Publications/CR/Issues/2019/03/21/Ecuador-2016-Article-IV-Consultation-Press-Release-and-Staff-Report-46689>

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

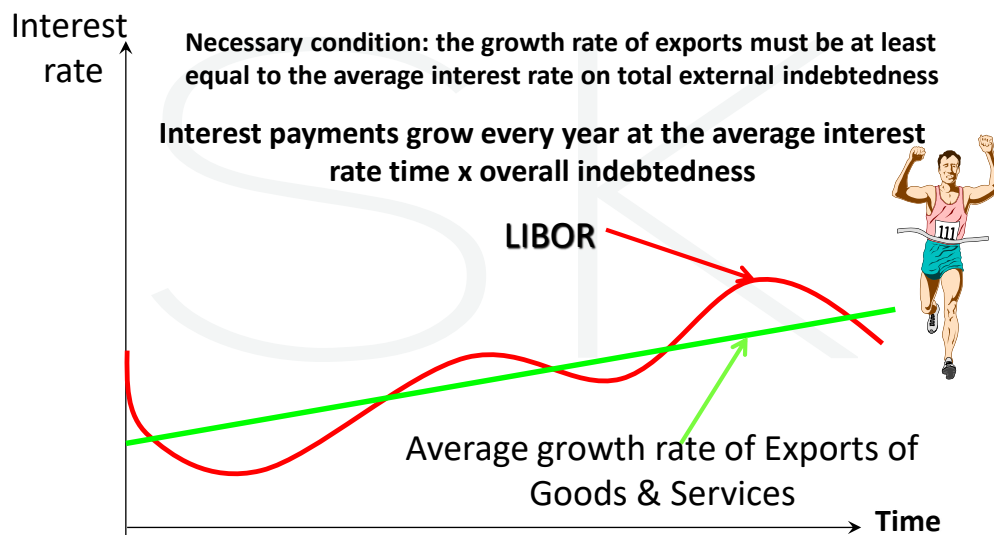
Data are in millions	2019Q3	2019Q4	2020Q1	2020Q2	2020Q3
<b>A1. Loans and other credits (Debt of)</b>					
01_Cross-border loans, by BIS reporting banks	70,449	73,366	76,174	71,249	73,299
02_o/w to nonbanks	38,794	41,710	41,585	41,813	42,298
03_Official bilateral loans, total	..	..	..	..	..
04_o/w aid loans	..	..	..	..	..
05_o/w other	..	..	..	..	..
06_Multilateral loans, total	0	0	0	0	0
07_o/w IMF	0	0	0	0	0
08_o/w other institutions	..	..	..	..	..
09_Insured export credit, Berne Union	22,274	28,791	28,791	27,090	27,090
10_o/w short term	21,951	28,361	28,361	26,802	26,802
11_SDR allocations	2,367	2,401	2,370	2,389	2,444
<b>A2. Loans and other credits (Debt due within a year)</b>					
12_Liabilities to BIS banks (cons.), short term	35,817	36,735	41,965	37,068	39,398
13_Multilateral loans, IMF, short term	..	..	..	..	..
<b>B1. Debt securities (All maturities)</b>					
14_Debt securities held by nonresidents	..	313,785	..	..	..
<b>B2. Debt securities (short term, original maturity)</b>					
15_Debt securities held by nonresidents	..	9,814	..	..	..
<b>C. Supplementary information on debt (liabilities)</b>					
16_International debt securities, all maturities	255,535	261,175	262,493	290,099	300,183
17_o/w issued by nonbanks	167,131	165,863	165,188	185,390	189,710
18_International debt securities, short term	37,086	36,915	34,806	42,084	39,166
19_o/w issued by nonbanks	23,959	20,890	18,772	27,530	24,081
20_Paris Club claims (ODA)	..	..	..	..	..
21_Paris Club claims (non ODA)	..	..	..	..	..
22_Liabilities to BIS banks, locational, total	169,279	172,021	179,653	177,752	184,568
23_Liabilities to BIS banks, consolidated, total	132,168	133,991	140,901	137,858	142,224

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Table1 Joint BIS-IMF-OECD-World Bank Statistics on External Debt (mill. US\$)						Table1 Joint BIS-IMF-OECD-World Bank Statistics on External Debt (mill. US\$)					
Data are in millions						Data are in millions					
	2016Q2	2016Q3	2016Q4	2017Q1	2017Q2		2016Q2	2016Q3	2016Q4	2017Q1	2017Q2
<b>A1. Loans and other credits (Debt of)</b>						<b>A1. Loans and other credits (Debt of)</b>					
01_Cross-border loans, by BIS reporting banks	10,063	10,556	10,600	..	..	01_Cross-border loans, by BIS reporting banks	2,726	2,894	2,830	..	..
02_o/w to nonbanks	6,666	7,064	7,144	..	..	02_o/w to nonbanks	1,656	1,862	1,871	..	..
03_Official bilateral loans, total	..	..	..	..	..	03_Official bilateral loans, total	..	..	..	..	..
04_o/w aid loans	..	..	..	..	..	04_o/w aid loans	..	..	..	..	..
05_o/w other	..	..	..	..	..	05_o/w other	..	..	..	..	..
06_Multilateral loans, total	8,299	8,516	8,215	8,335	0	06_Multilateral loans, total	6,772	6,676	6,860	6,839	1,902
07_o/w IMF	0	0	0	0	0	07_o/w IMF	1,721	1,700	1,620	1,619	1,902
08_o/w other institutions	8,299	8,516	8,215	8,335	..	08_o/w other institutions	5,052	4,976	5,240	5,221	..
09_Insured export credit, Berne Union	7,200	7,272	6,599	..	..	09_Insured export credit, Berne Union	2,841	2,686	2,572	..	..
10_o/w short term	4,601	4,775	4,310	..	..	10_o/w short term	2,137	2,004	1,914	..	..
11_SDR allocations	785	784	755	762	781	11_SDR allocations	382	381	367	370	380
<b>A2. Loans and other credits (Debt due within a year)</b>						<b>A2. Loans and other credits (Debt due within a year)</b>					
12_Liabilities to BIS banks (cons.), short term	2,792	2,929	2,948	..	..	12_Liabilities to BIS banks (cons.), short term	528	585	584	..	..
13_Multilateral loans, IMF, short term	..	..	..	..	..	13_Multilateral loans, IMF, short term	149	231	328	448	531
<b>B1. Debt securities (All maturities)</b>						<b>B1. Debt securities (All maturities)</b>					
14_Debt securities held by nonresidents	5,761	..	..	..	..	14_Debt securities held by nonresidents	3,458	..	..	..	..
<b>B2. Debt securities (short term, original maturity)</b>						<b>B2. Debt securities (short term, original maturity)</b>					
15_Debt securities held by nonresidents	97	..	..	..	..	15_Debt securities held by nonresidents	24	..	..	..	..
<b>C. Supplementary information on debt (liabilities)</b>						<b>C. Supplementary information on debt (liabilities)</b>					
16_International debt securities, all maturities	8,029	8,044	8,197	8,234	..	16_International debt securities, all maturities	4,924	5,459	5,182	6,246	..
17_o/w issued by nonbanks	7,728	7,744	7,897	7,935	..	17_o/w issued by nonbanks	4,924	5,459	5,182	6,246	..
18_International debt securities, short term	555	558	527	535	..	18_International debt securities, short term	500	599	586	589	..
19_o/w issued by nonbanks	555	558	527	535	..	19_o/w issued by nonbanks	500	599	586	589	..
20_Paris Club claims (ODA)	..	..	4,479	..	..	20_Paris Club claims (ODA)	..	..	2,608	..	..
21_Paris Club claims (non ODA)	..	..	270	..	..	21_Paris Club claims (non ODA)	..	..	856	29	..
22_Liabilities to BIS banks, locational, total	13,990	14,548	12,089	..	..	22_Liabilities to BIS banks, locational, total	3,661	3,767	3,317	..	..

# EXTERNAL DEBT ANALYSIS I

## How to stabilize the Interest/Export ratio?



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## EXTERNAL DEBT ANALYSIS II

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

$$\begin{aligned}
 &\blacktriangleright \text{DEBT } t = \text{DEBT } t-1 * (1+r) - \text{Primary Budget Balance} \\
 &\blacktriangleright \text{GDP } t = \text{GDP } t-1 * (1 + g) \\
 &\blacktriangleright \frac{\text{DEBT } t}{\text{GDP } t} = \frac{\text{DEBT } t-1 * (1+r) - \text{Primary Budget Balance}}{\text{GDP } t-1 * (1+g)}
 \end{aligned}$$

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

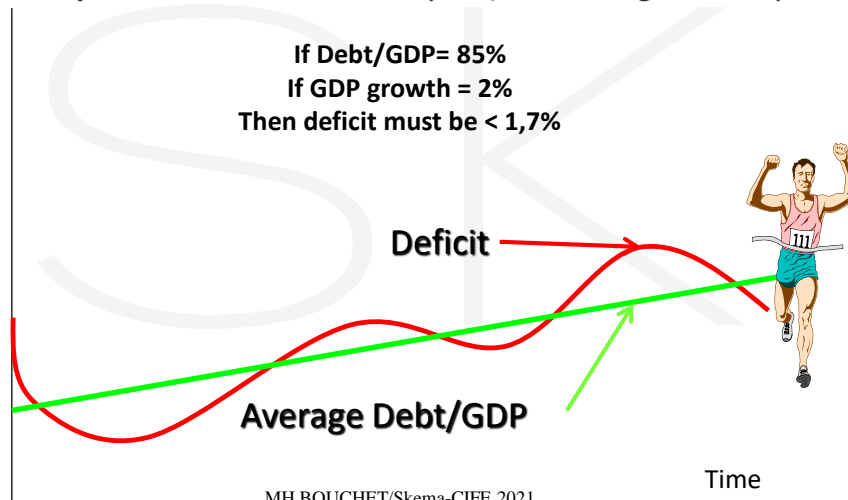
Reducing DEBT= Reducing  $r$ , increasing  $g$ , or boosting primary surplus

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## EXTERNAL DEBT ANALYSIS III

How to stabilize the Debt/GDP ratio?

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



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## External Debt Analysis IV

### How to stabilize the Debt/GDP ratio?

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

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

$$DEBT_t = DEBT_{t-1} + DEF_{t-1} \quad DEF = d * Y_t \quad \Delta Y_t = Y_{t-1} (1+g)$$

$$\frac{DEBT_t}{Y_t} = \frac{DEBT_{t-1}}{Y_t} + \frac{d * Y_{t-1}}{Y_t}$$

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

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