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Country risk and Debt Crisis I

Michel Henry Bouchet



BIBLIOGRAPHY

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- ▶ Bouchet, Clark, Gros Lambert: Country risk management (Wiley, NY)
- ▶ Bouchet, Guilhon: Intelligence Economique et Gestion des Risques (Paris: Pearson)
- ▶ Reinhart C., Rogoff K.: This time it's different (Princeton, 2009)
- ▶ Paris Club 2018
- ▶ IIF 2018
- ▶ IMF yearly report and WEO 2018
- ▶ US Treasury and US FFIEC 2018
- ▶ BIS reports 2018
- ▶ C-Bonds website

EXTERNAL DEBT ANALYSIS

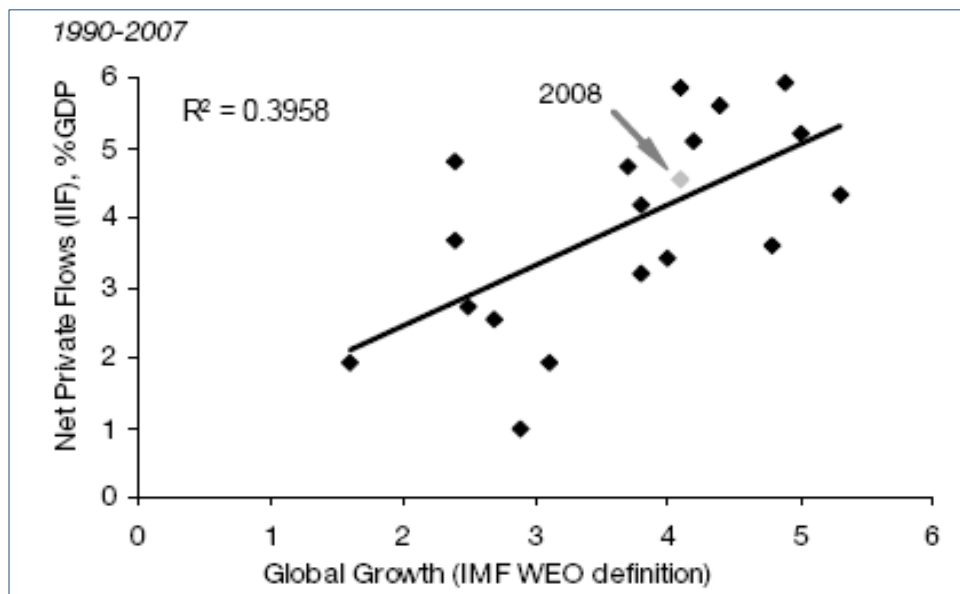
4 Objectives:

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

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EXTERNAL FINANCING HELPS BOOSTING GDP GROWTH



IIF, Washington, D.C.

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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 + Δ reserve requirements
- Fiscal adjustment + cuts in public spending
- Structural measures to stimulate competitiveness



Debt restructuring + return to market access (?) ⁵

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DOMESTIC AND EXTERNAL FINANCIAL EQUILIBRIUM

What is disposable income?

$Y = \text{gross income} - \text{imports \& taxation}$

$$Y = C + I + G + X - M - T + (KM - K \text{ flight})$$

$$\text{Savings} = Y - C$$

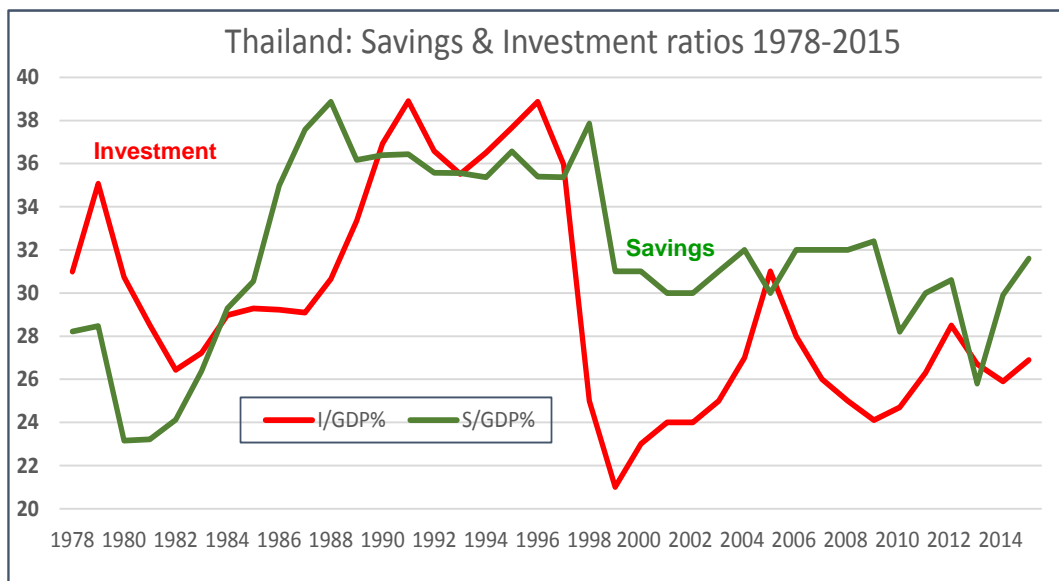
$$(\underbrace{S - I}_{\text{Net savings}}) + (\underbrace{T - G}_{\text{Fiscal balance}}) = (\underbrace{X - M}_{\text{Trade balance}}) + (\underbrace{KM - KX}_{\text{Net capital inflows}})$$

BOOSTING SAVINGS TO FINANCE INVESTMENT WITHOUT EXTERNAL DEFICIT

if $S < I \Rightarrow X < M$

- ▶ a **trade imbalance** is always rooted in low savings and excessive domestic spending (absorption).
- ▶ It requires macroeconomic correction (interest rate hike, devaluation, \uparrow taxation, credit reduction, \uparrow reserve requirements...)

THE LONG-TERM DYNAMICS OF INVESTMENT AND NATIONAL SAVINGS

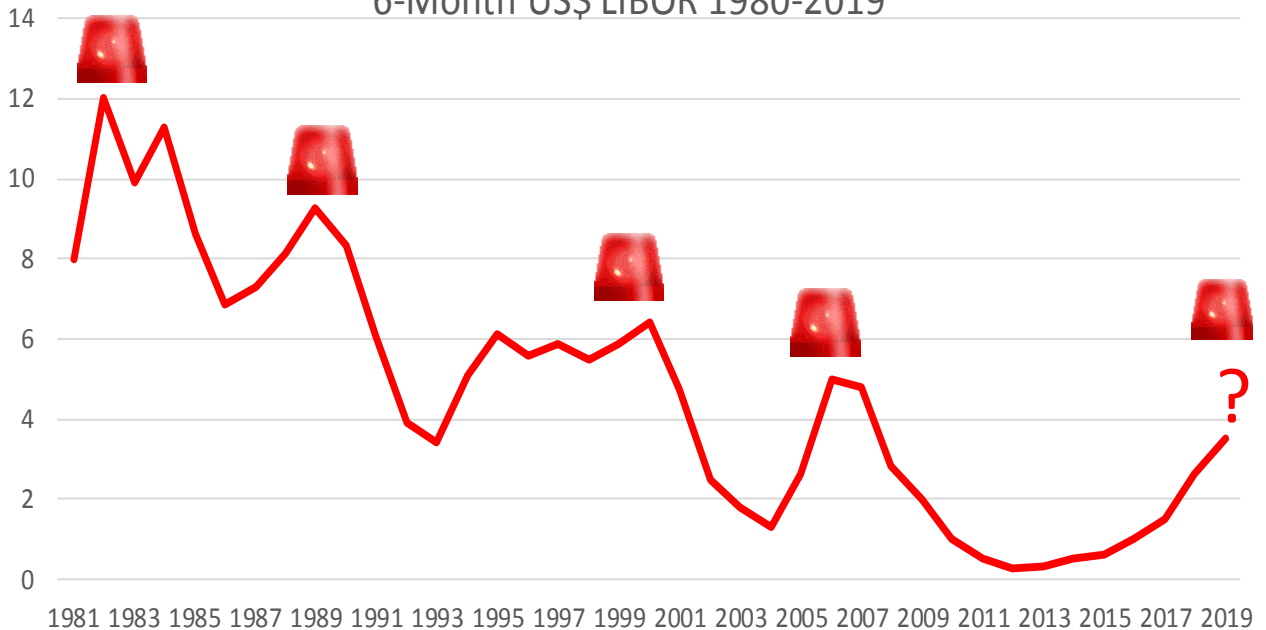


THE CURRENT ACCOUNT OF THE BALANCE OF PAYMENTS

- From less liquid items
toward more liquid items!*
- + 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**



6-Month US\$ LIBOR 1980-2019



From less liquid items to more liquid items!

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)**



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WHY/WHEN DOES A FINANCIAL CRISIS ERUPT?

GROSS AND NET FLOWS

▶ **Gross Capital Inflows** =

Σ Long-term + Short-term capital flows

▶ **Net Flows** =

Σ Gross Inflows - Debt Repayments

▶ **Net Transfers** =

Σ Net Flows - Interest Payments

▶ **Total debt service payments** =

Σ Debt payments + Interest payments

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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TABLE OF USES AND SOURCES

USES (outflows)

1. Imports of goods
2. Imports of services
3. Interest payments
4. Principal debt payments
5. ST capital outflows
6. E&Os

SOURCES (inflows)

1. Exports of goods
2. Exports of services
3. Transfers & Remittances
4. Dividends
5. FDI
6. ST and LT K inflows
7. Debt cancellation
8. Arrears

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**Hello SKEMA FMI!
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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**Hello SKEMA FMI!
HELP!**

	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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**Hello SKEMA FMI!
HELP!**



	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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EXTERNAL DEBT ANALYSIS

FLOWS: Balance of payments analysis and capital flight

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

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

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

EXTERNAL DEBT ANALYSIS

FLOWS: Balance of payments analysis and capital flight

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- ▶ 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)
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➔ Solvency

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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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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)

TWO COUNTRIES = TWO DEBT TRAJECTORIES

Solvencia

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
1. Real Economy					
"+, -, 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
2. External Finance					
"+, -, 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
3. Spill-over					
only > 0	13	Trade openness ratio - %	performance	quarterly	WB
only > 0	14	Capital Flight / Reserves - %	capital flight	quarterly	BIS
4. Risk Ratings					
in bp	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 Develop Index	governance	annual	UNDP
only > 0	19	Doing Business index	performance	annual	WB

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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

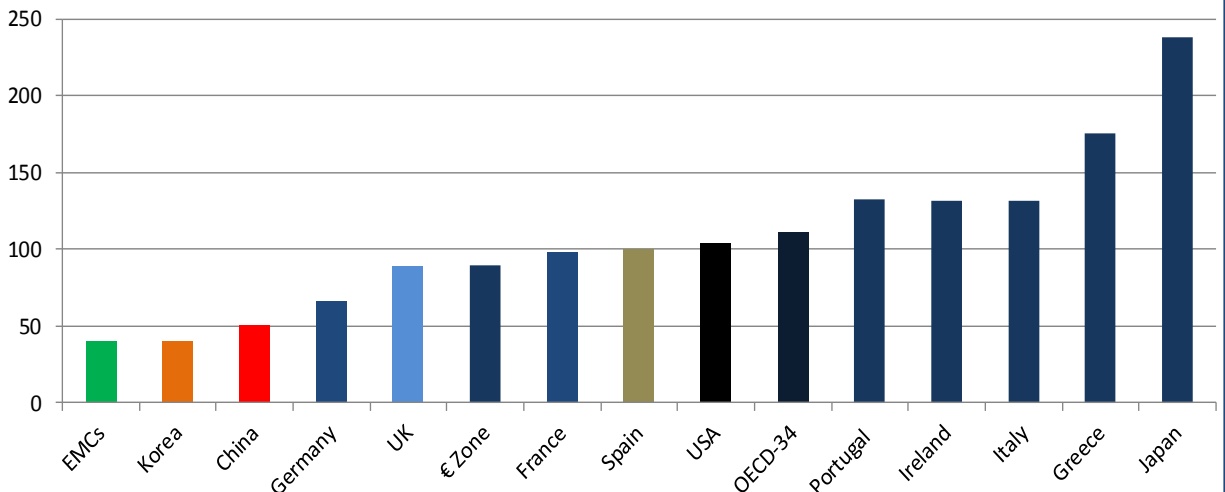
Sources: National Authorities; World Bank; International Monetary Fund; Haver Analytics

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PUBLIC DEBT IN 2018-19: STILL UNDER CONTROL?

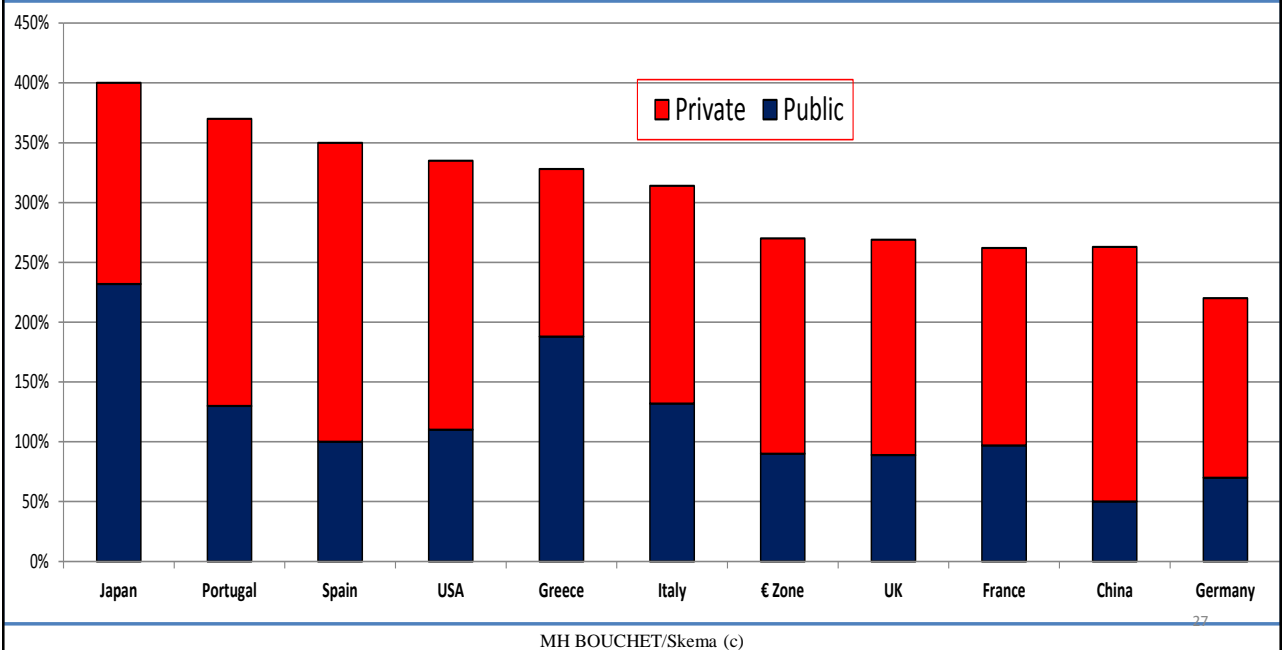
Public debt to GDP % 2018



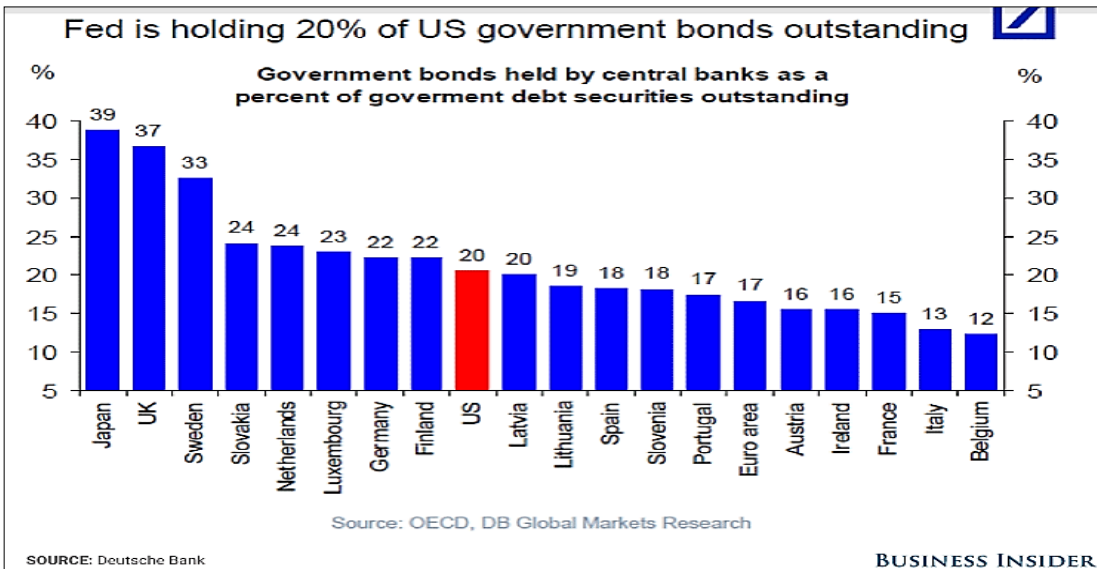
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OVERALL NATIONAL DEBT BURDENS



CENTRAL BANKS' ACCOMODATIVE MONETARY POLICY AND SOVEREIGN DEBT



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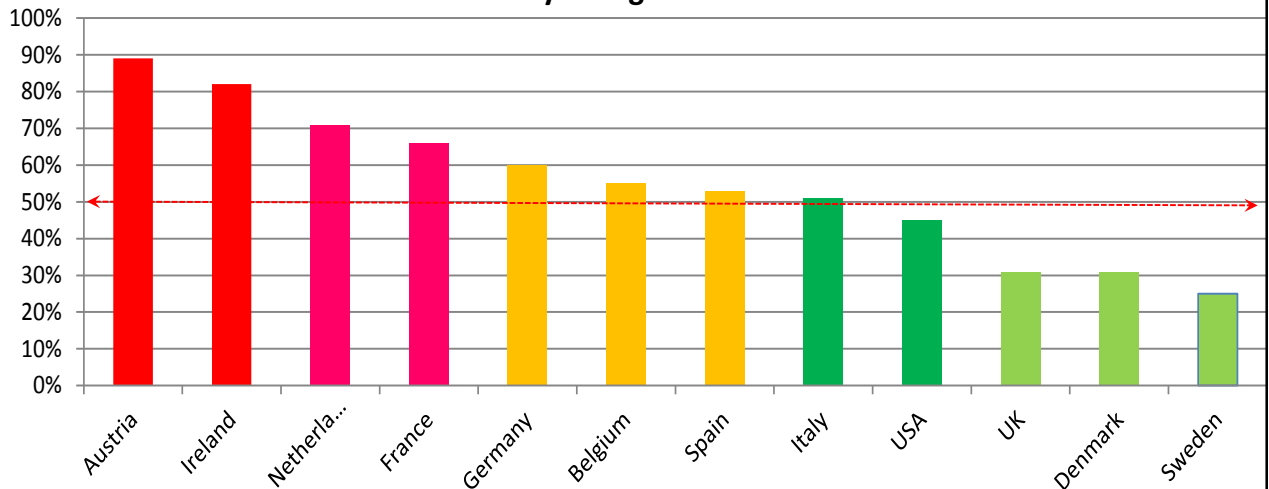
GLOBAL PRIVATE SECTOR DEBT IN % OF GLOBAL GDP (COMPANIES AND HOUSEHOLDS)



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

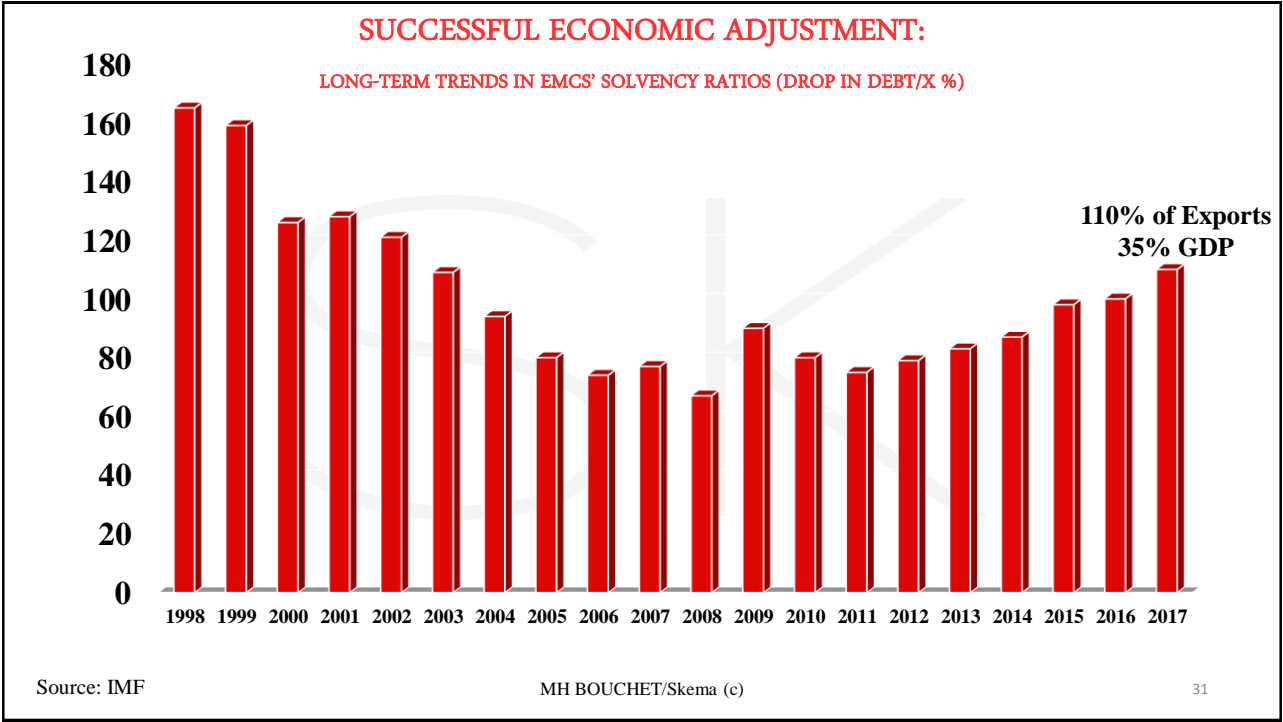
Share of Public Debt held by foreign investors in 2017 %

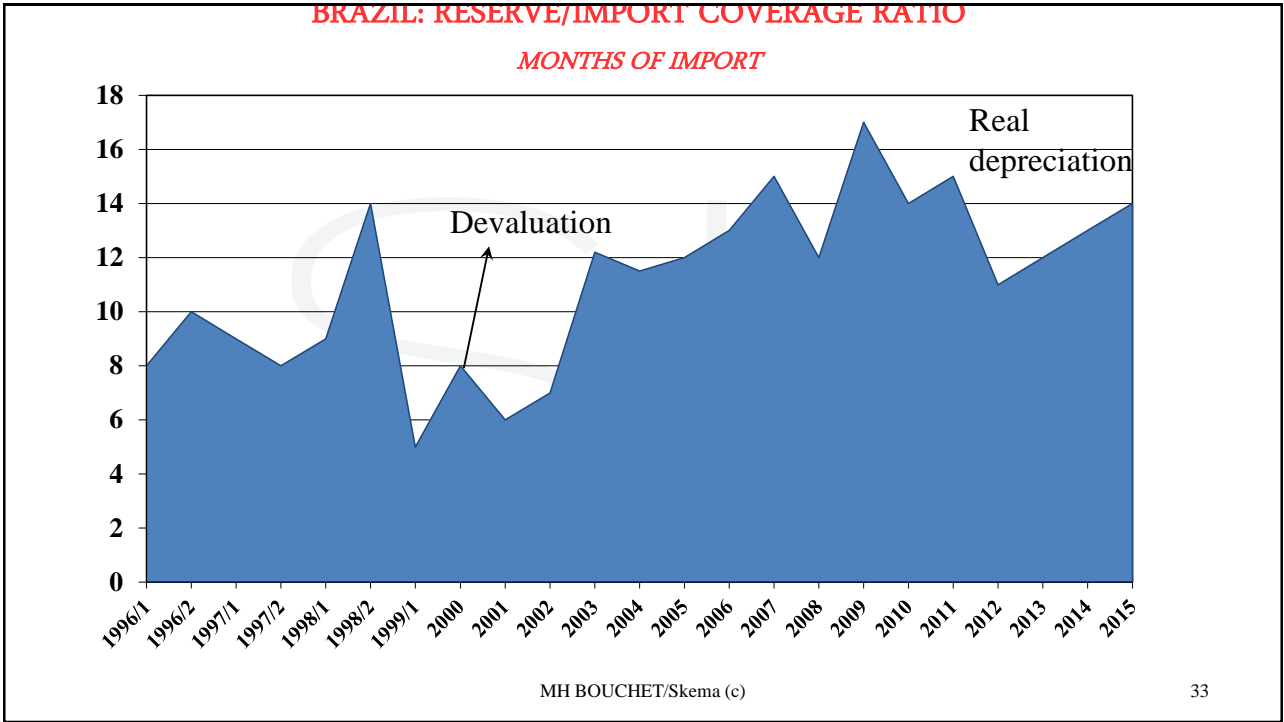


Source: FT, IMF, Natixis, US Treasury 2017

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EXTERNAL FINANCING PROFILES IN 2017-18

RATIOS	VIETNAM	GABON	ECUADOR
1. CA/GDP	+2%	-9%	-3%
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://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
A1. Loans and other credits (Debt of)					
01_Cross-border loans, by BIS reporting banks	8,289	8,768	8,882	9,126	8,614
02___o/w to nonbanks	6,868	6,040	6,236	6,068	6,344
03_Official bilateral loans, total	--	--	--	--	--
04___o/w aid loans	--	--	--	--	--
05___o/w other	--	--	--	--	--
06_Multilateral loans, total	8,798	7,113	7,286	--	--
07___o/w IMF	0	0	0	--	--
08___o/w other institutions	8,798	7,113	7,286	7,621	7,726
09_Insured export credit, Berne Union	7,807	7,721	7,650	7,144	7,173
10___o/w short term	4,613	4,684	4,690	4,421	4,484
11_SDR allocations	774	790	788	778	781
A2. Loans and other credits (Debt due within a year)					
12_Liabilities to BIS banks (cons.), short term	2,874	2,901	2,429	2,379	2,617
13_Multilateral loans, IMF, short term	--	--	--	--	--
B1. Debt securities (All maturities)					
14_Debt securities held by nonresidents	--	6,442	--	--	--
B2. Debt securities (short term, original maturity)					
15_Debt securities held by nonresidents	--	132	--	--	--
C. Supplementary information on debt (liabilities)					
16_International debt securities, all maturities	8,864	7,863	8,120	8,007	8,102
17___o/w issued by nonbanks	8,664	7,662	7,820	7,738	7,802
18_International debt securities, short term	84	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	12,929	12,632	12,676	12,784	13,237
23_Liabilities to BIS banks, consolidated, total	10,894	10,909	10,668	10,783	11,184
D. Memorandum items: selected foreign assets					
24_International reserves (excluding gold)	17,864	18,762	21,680	22,264	24,327
25___o/w SDR holdings	770	786	773	783	778
26_Portfolio investment assets	--	--	--	--	--
27_Cross-border deposits with BIS rep. banks	4,888	6,767	6,071	5,372	6,787
28___o/w deposits from nonbanks	2,804	2,688	2,472	2,333	2,484

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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



EXTERNAL DEBT ANALYSIS II

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

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

▶ $GDP_t = GDP_{t-1} * (1 + g)$

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

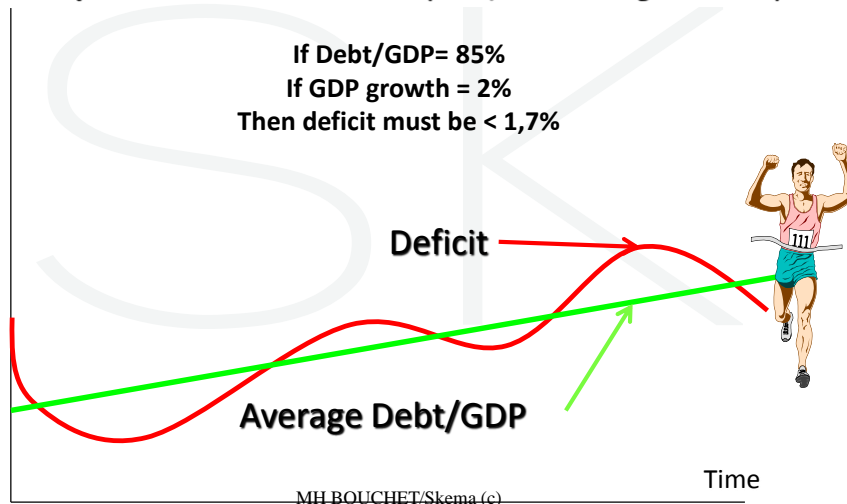
$\frac{DEBT}{GDP_t} = \frac{DEBT}{GDP_{t-1}} * \frac{1+r}{1+g} - \frac{\text{Primary Budget Balance}}{GDP}$

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 < (Debt/GDP * GDP growth rate)



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