Dette extérieure: analyse et mesure

I

ESC Sfax 2015
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Bibliography

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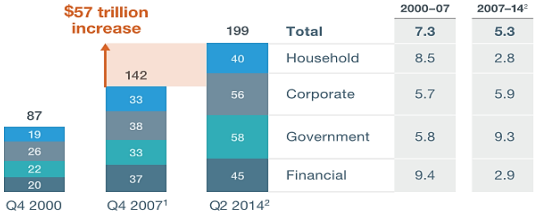
- Bouchet, Guilhon: Intelligence Economique et Gestion des Risques (Paris: Pearson)
- Reinhart C., Rogoff K.: This time it's different (Princeton, 2009)
- Paris Club 2015
- IIF 2015
- IMF, annual report 2014
- BIS reports 2015
- C-Bonds website

La hausse continue du volume de dette globale 2000-2014

Global stock of debt outstanding,
$ trillion, constant 2013 exchange rates

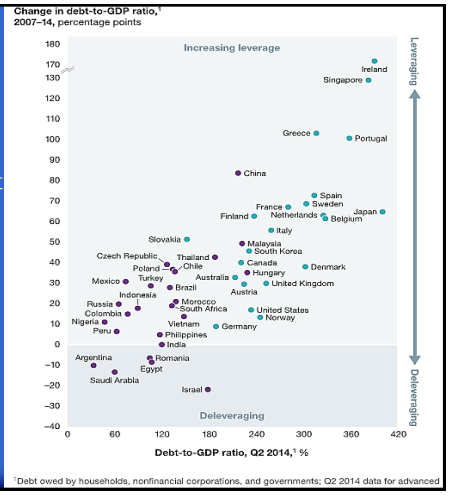


	Compound annual growth rate, %	
	2000–07	2007–14[2]
Total	7.3	5.3
Household	8.5	2.8
Corporate	5.7	5.9
Government	5.8	9.3
Financial	9.4	2.9
Total debt as a share of GDP		

[1]Figures do not sum to total, because of rounding.
[2]Q2 2014 data for advanced economies and China; Q4 2013 data for other developing countries.

Source: Bank for International Settlements; Haver Analytics; International Monetary Fund *World Economic Outlook*; national sources; McKinsey Global Institute analysis

Selon McKinsey (2015) quels sont les pays dont la dette augmente en % du PIB 2007-2014?



Analyse de l'**endettement extérieur**

Points majeurs:

1. Conséquences de la croissance financée par endettement extérieur et pression sur la balance des paiements
2. Structure de la dette: CT/LT, taux de change, maturités, taux d'intérêt, profil d'échéancier, créanciers
3. Ratios de solvabilité et de liquidité
4. Indicateurs avancés de crise financière: chocs extérieurs
5. Restructuration de la dette: rééchelonnement, swaps, refinancement, réduction et programmes de conversion

Conditions d'équilibre financier

Le revenu disponible?

Y = revenu brut - importations & taxes

Y = C + I + G + X – M – T + (Km – K flight)

Epargne = Y – C

(S – I) + (T – G) = (X – M) + (Km – K F)

Epargne nette | Balance fiscale | Balance commerciale | Flux de K nets

Stimuler l'épargne pour financer l'investissement sans déficit?

si S < I ⇒ X < M

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

Les fondamentaux de la crise extérieure

Rising money supply
Large and cheap bank credit
Budget deficit

→ **Consumption > Savings = excessive absorption**

↓

High rates of spending on domestic and foreign goods
Shrinking net income

← **Inflationary pressures + Exchange rate overvaluation**

↓

Balance of payments crisis

↓

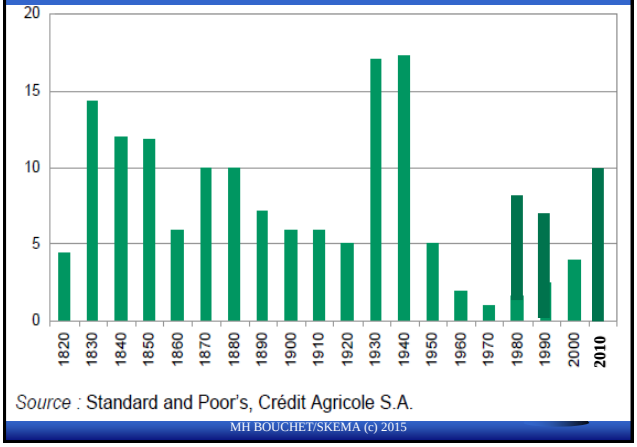
ADJUSTMENT → **IMF's financing + macroeconomic stabilization**

- *** Exchange rate adjustment + control of the money supply: decrease in creation of reserve money + decline on money multiplier of the deposit money banks + interest rate rise + increase in reserve requirements**
- *** Fiscal adjustment + cuts in public spending**
- *** Structural measures to stimulate competitiveness**

↓

Debt Restructuring + return to market access

1. Nombre de pays débiteurs en défaut /an



Source : Standard and Poor's, Crédit Agricole S.A.

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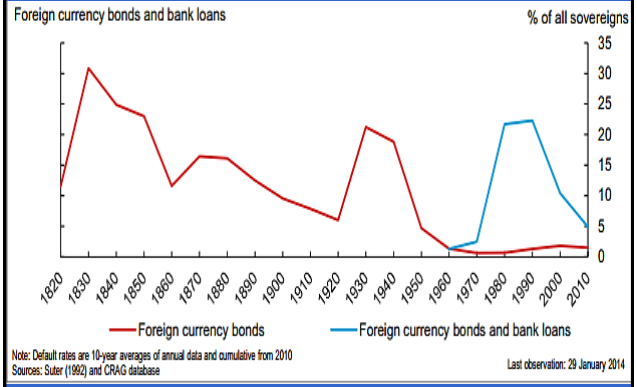
2. Proportion de défaut souverain sur prêts bancaires et obligations



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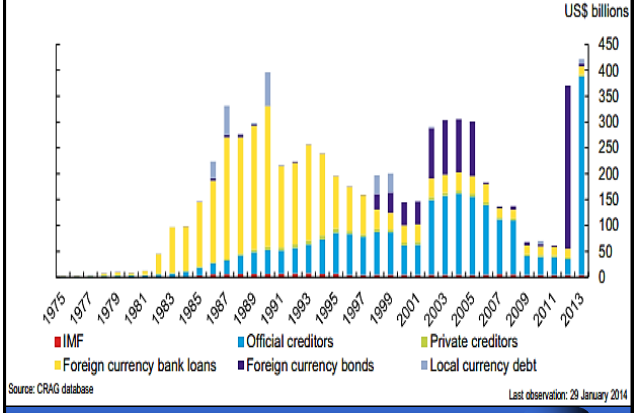
3. Volume de dette en défaut par type de créancier



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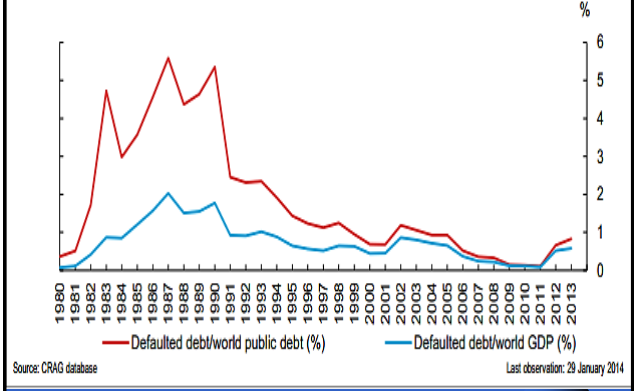
4. Pourcentage de dette en défaut selon le PIB mondial et la dette publique totale



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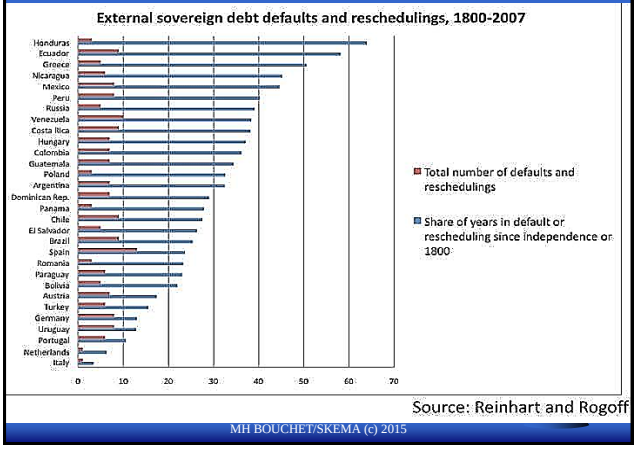
5. Nombre de défauts et de rééchelonnements 1800-2007



Source: Reinhart and Rogoff

Fitch-Rated Sovereign IDR Defaults (1995–2011)

Argentina: Defaulted on more than USD80 billion of sovereign foreign currency bonds in December 2001, most of which were held by non-residents. Debt default partially cured in 2005, but some holdout investors remained, constraining the rating to 'RD' until July 2010.

Dominican Republic: Distressed debt exchange in 2005 affected more than USD1.1 billion of eligible foreign currency-denominated bond debt.

Ecuador: Missed coupon payment on its 2012 global bonds followed by an announcement that the government would selectively default on all global bonds. The rating was lowered to 'RD' in December 2008.

Indonesia: Paris and London Club rescheduling operations in June 1998; further rescheduling in 2000 and 2002. Indonesia maintained payments on the single Fitch-rated sovereign bond outstanding at the time.

Moldova: USD75 million eurobond restructured in 2002, followed by a Paris Club deal.

Russian Federation: Exceptionally, Fitch dates sovereign default to August 1998. Although this was when the Russian Federation defaulted on its local currency debt, it began to incur arrears on foreign currency debt owed to the Paris Club official bilateral creditors very quickly afterwards. Defaults on foreign currency debt instruments held by private creditors occurred in 1999, although payments on Russian Federation eurobonds were maintained and honored.

Uruguay: Distressed debt exchange in March 2003 affecting more than USD5 billion of sovereign foreign currency debt, mostly held by non-residents.

Jamaica: A coercive debt exchange in February 2010 affected the country's domestic debt, which included foreign currency denominated instruments to which Fitch's foreign currency rating applied.

RD – Restricted default.

Analyse de la dette extérieure

FLUX: Balance of payments analysis and capital flight

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

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

- Solvency ratios
- London Club debt : secondary market discounts
- Spread/margin over US T Bills and CDS

Flux bruts et flux nets

- **Gross Capital Inflows =**

Σ Long-term + Short-term capital flows

- **Net Flows=**

Σ Gross Inflows - Principal Repayments

- **Net Transfers=**

Σ Net Flows - Interest Payments

- **Total debt service payments=**

Σ Principal payments + Interest payments

IIF's analysis of Capital Flows 2011-2014

Emerging Market Economies: Capital Flows
$ billion

	2011	2012e	2013f	2014f
Capital Inflows				
Total Inflows, Net:	*1207*	*1212*	*1187*	*1167*
Private Inflows, Net	**1146**	**1181**	**1145**	**1112**
Equity Investment, Net	598	670	631	633
Direct Investment, Net	593	545	541	523
Portfolio Investment, Net	5	125	89	110
Private Creditors, Net	548	511	514	479
Commercial Banks, Net	195	121	144	154
Nonbanks, Net	353	390	369	325
Official Inflows, Net	61	31	43	55
International Financial Institutions	17	4	6	21
Bilateral Creditors	44	27	37	35
Capital Outflows				
Total Outflows, Net	*-1481*	*-1269*	*-1396*	*-1396*
Private Outflows, Net	-811	-932	-1000	-1000
Equity Investment Abroad, Net	-262	-320	-375	-357
Resident Lending/Other, Net	-549	-612	-624	-643
Reserves (- = Increase)	-670	-357	-397	-396
Memo:				
Net Errors and Omissions	*17*	*-211*	*0*	*0*
Current Account Balance	*257*	*288*	*209*	*229*

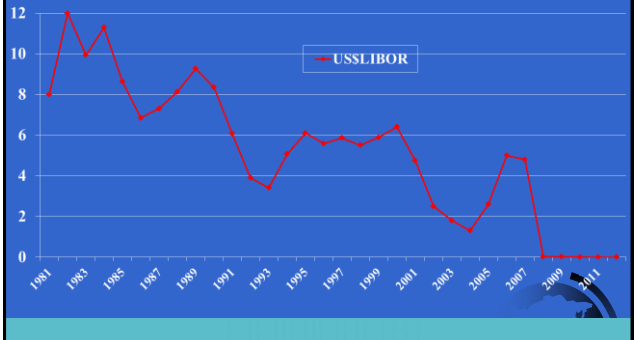
e=IIF estimate, f=IIF forecast

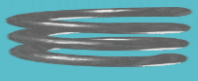
COMPTE COURANT

Des éléments moins liquides aux plus liquides!

Exportations de marchandises f.o.b.
\- Importations f.o.b.
= **Balance commerciale**
\+ Exportations de services non financiers (tourisme)
\- Importations de services (transport)
\+ Revenus d'investissement (crédit)
\- Paiements d'intérêts (débit)
\+ (-) Transfers privès
\+ (-) Transfers publics
= **Balance courante**

Taux LIBOR du US$ 6-mois

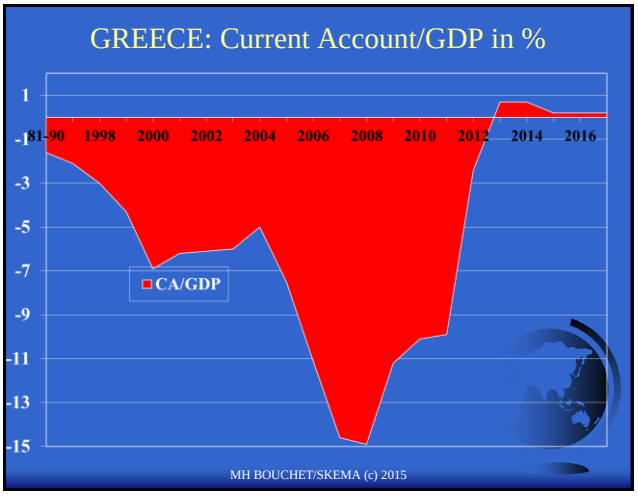


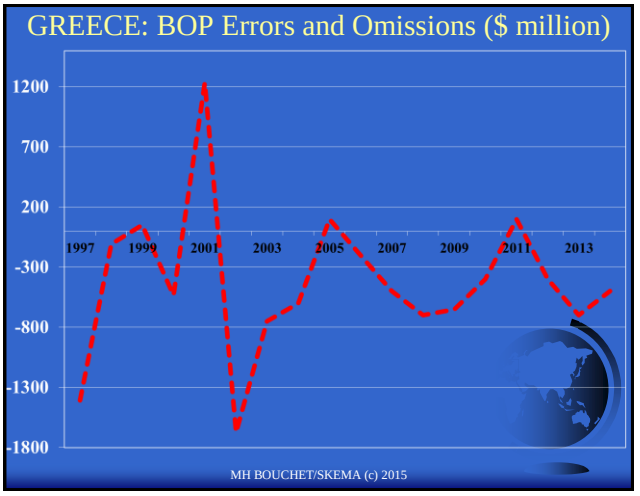


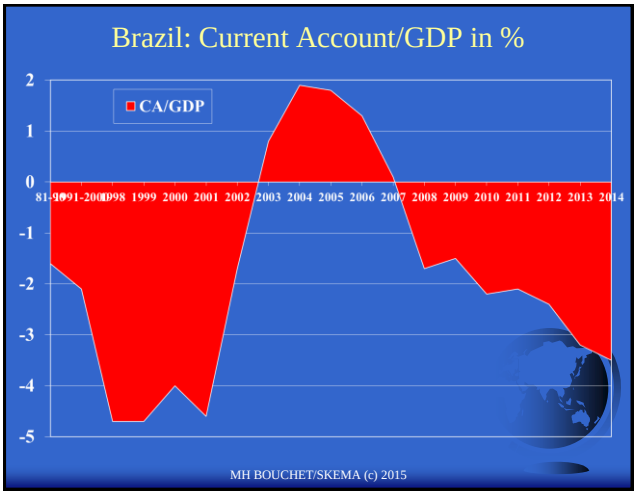
Le Compte de capital

des flux moins liquides vers les flux plus liquides!

Compte de Capital (flux nets)
\+ (-) Investissement direct
\+ (-) Investissement de Portefeuille
\+ (-) Autres flux de capitaux à long-terme
\+ (-) Autres flux de capitaux à court-terme
\+ (-) Erreurs et Omissions (net)
\+ (-) Contreparties (réévaluation de l'or…)
\+ (-) Variation des Réserves
= **Balance des Capitaux**
+ Financement Exceptionnel







BALANCE of PAYMENTS ($ million)	2003	2004	2005	2006	2007
Trade Balance	-1 130	-411	-1 577	-2 494	-5 100
Merchandise exports	4 882	6 151	7 910	8 061	8 500
Merchandise imports	-6 012	-6 562	-9 487	-10 555	-13 600
Balance on Services, Income & Transfers	42	178	114	-385	-1 331
Services & income receipts	849	1 013	1 262	1 277	1 404
Exports of services	697	879	1 130	1 152	1 214
Interest receipts	150	125	115	110	175
Other services & income receipts	2	9	17	15	15
Services & income payments	-1 022	-1 130	-1 773	-2 255	-3 155
Imports of services	-902	-984	-1 423	-1 683	-2 040
Interest payments	-116	-134	-321	-639	-1 066
Other services & income payments	-4	-12	-29	-33	-50
Transfers, net	214	295	625	693	419
Private transfers, net	103	182	320	394	269
Official transfers, net	111	113	305	199	150
Current Account	-1 088	-233	-1 463	-2 879	-6 431
Foreign investment, net	14	416	396	600	642
Foreign Direct Investment (disbursed, net)	87	341	417	600	500
Portfolio equity investment, net	-73	75	-21	0	142
International financial institutions	137	434	-7	-236	550
IMF	0	216	-315	-356	500
World Bank Group	0	100	100	0	0
Other multilateral creditors	137	118	208	120	50
Paris Club and other bilateral creditors	85	69	348	132	-128
London Club	95	651	277	726	1 639
Credit flows	70	601	222	641	139
Interest arrears	0	0	0	0	0
Short-term credits	25	50	55	85	1 500
Other private creditors (bond markets)	-4	10	1 000	1 500	200
Resident lending abroad, net	541	-683	430	-19	481
Errors and omissions, net	162	93	-150	-250	-350
Gold reserve variation	50	86	38	47	-91
Reserves excluding gold (- = increase)	-7	-893	-924	294	1 988

Balance des paiements et gestion des risques

+ Exportations de biens f.o.b.
- Importations f.o.b.
= **Balance commerciale**
+/- Exportations de services non-financiers
+ /- Paiements d'intérêt
+ (-) Transfers privès et publics
= **Balance courante**
+/- **IDE**
+/- **Flux de portefeuille**
+ **Flux de capitaux LT**
- **Remboursements d'échéances de principal**
+/- **Flux de capitaux CT**
+/- **Variation des réserves de change**

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Double analyse des ratios de dette extérieure

Risque de liquidité = flux

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

Risque de solvabilité= stocks

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

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Seuils de liquidité et de solvabilité

Stock variable

- **Solvency** = Debt/GDP < 66%*
  Debt/Exports < 150%
  Reserves/months of Imports > 6 months

Flow variable

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

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

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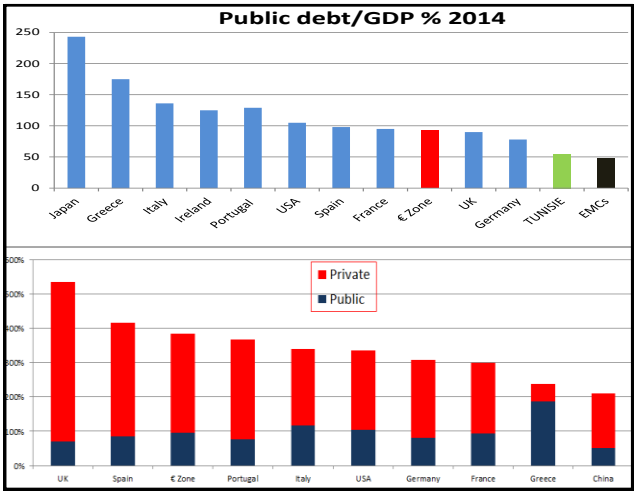

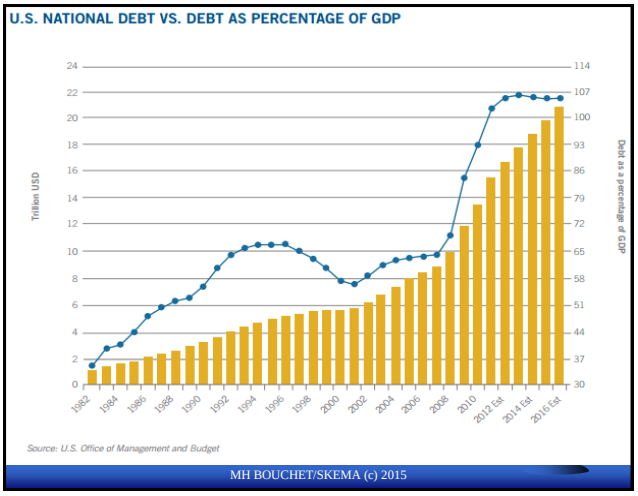
U.S. NATIONAL DEBT VS. DEBT AS PERCENTAGE OF GDP
Trillion USD
Debt as a percentage of GDP
Source: U.S. Office of Management and Budget
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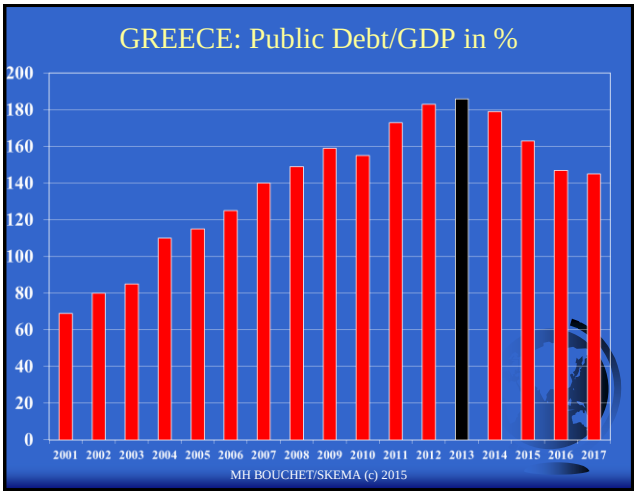
GREECE: Public Debt/GDP in %
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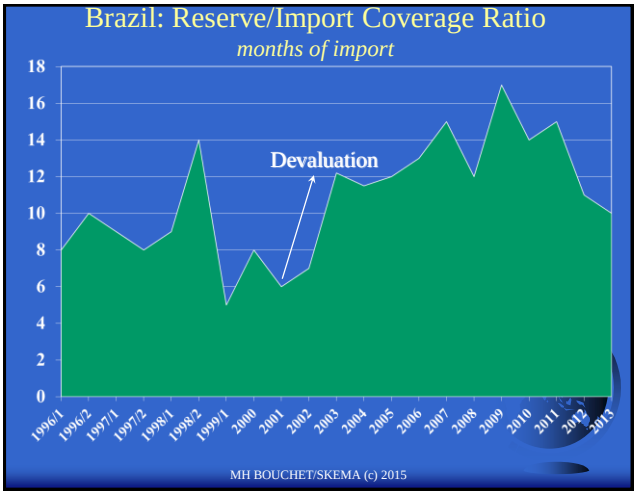
Brazil: Reserve/Import Coverage Ratio
months of import
Devaluation
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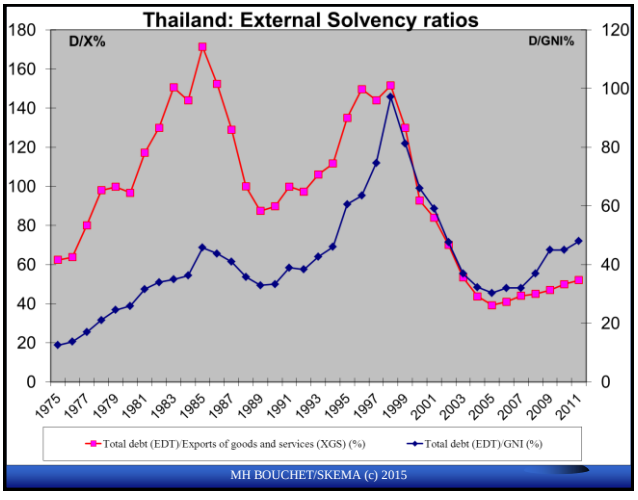
Thailand: External Solvency ratios
D/X%
D/GNI%
Total debt (EDT)/Exports of goods and services (XGS) (%)
Total debt (EDT)/GNI (%)
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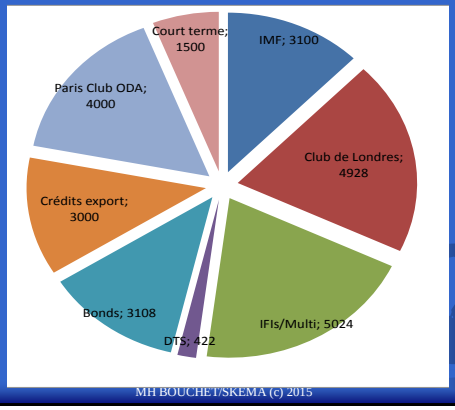
Tunisie: dette externe totale 2014

$28 milliards = 55% PIB 120% dette/Exports



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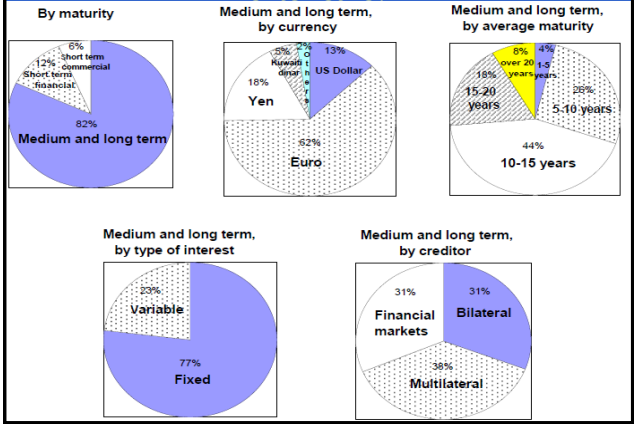
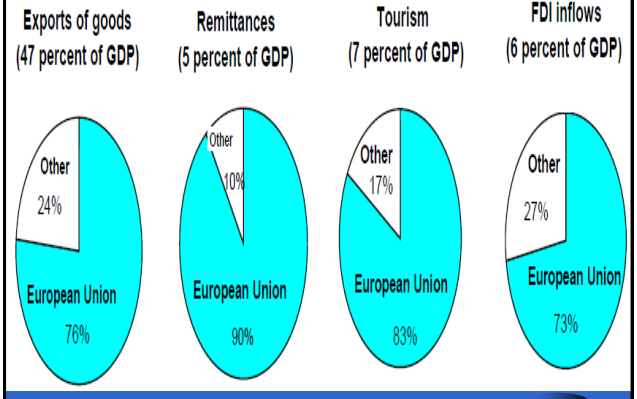
Tunisie: soutenabilité de la structure de dette extérieure?



Tunisie-Structure des échanges internationaux



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Emission obligataire janvier 2015

- Although Tunisia has issued debt over the past few years it has always come with assistance, guaranteed by the US government, through its Agency for International Development, or Japan.
- International investors keen to capitalize on the country's recent presidential elections put in orders > $4bn for the $1bn bond, allowing the country to borrow at a lower than expected rate of 5.875% over 10 years.

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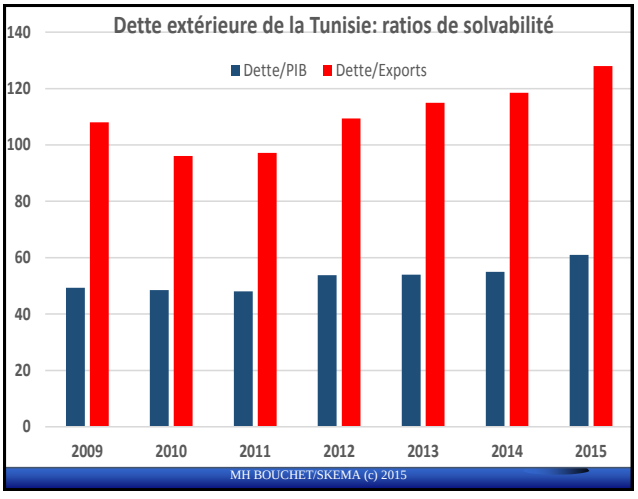

The **debt trap** in a nutshell

« **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

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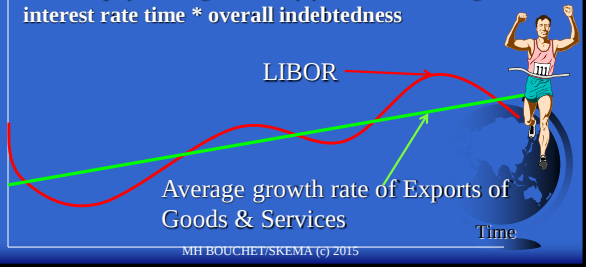
External Debt Analysis I

How to stabilize the Interest/Export ratio?

Necessary condition: the growth rate of exports must be at least equal to the average interest rate on total external indebtedness

Interest payments grow every year at the average interest rate time * overall indebtedness



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External debt Analysis II

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

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

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

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

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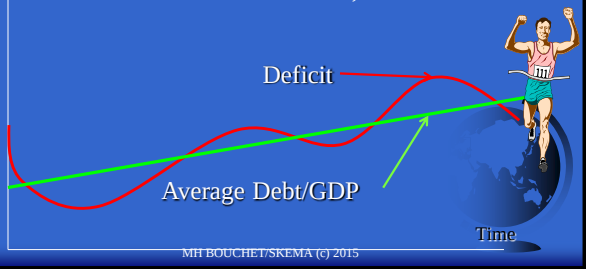
External Debt Analysis III

How to stabilize the Debt/GDP ratio?

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

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



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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

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

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

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

$$= \left(\frac{1}{1+g}\right) * \frac{DEBT_{t-1}}{Y_{t-1}} + \frac{d}{1+g} = \frac{d/1+g}{1-(1/1+g)} = \frac{d}{g}$$

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

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