

Heraklis Polemarchakis “The Debt of Nations”

Discussion, Yannis M. Ioannides, Tufts University

“The Crisis in the Euro Area”

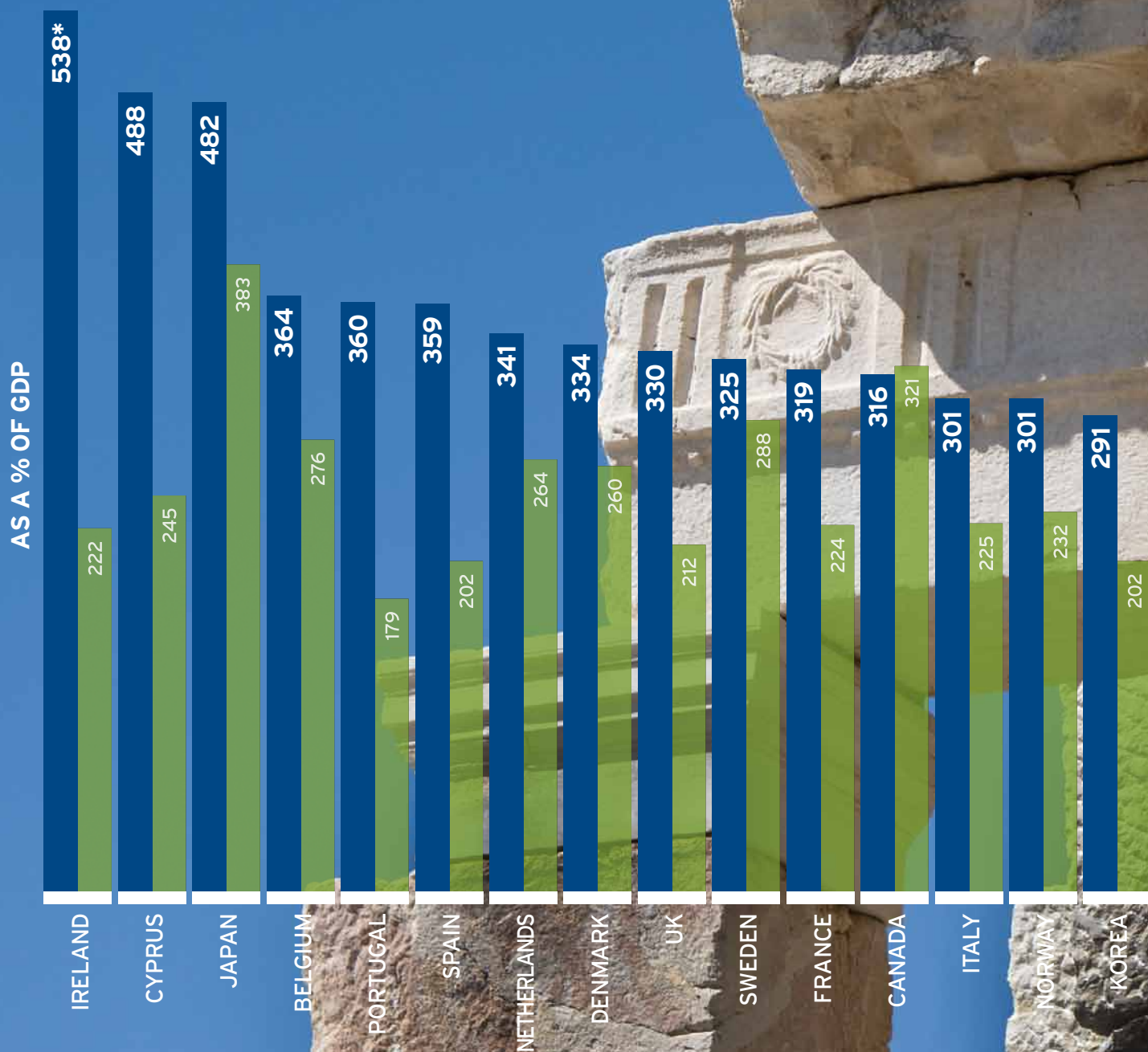
Bank of Greece, Vouliagmeni, May 23–24, 2013

Outline

- An overview of numbers across the world
- Total for advanced economies
- Why Does Debt Matter in General?
- Why Debt Matters Today.

The debt of nations, literally

HOW MUCH DEBT IS THERE NOW?

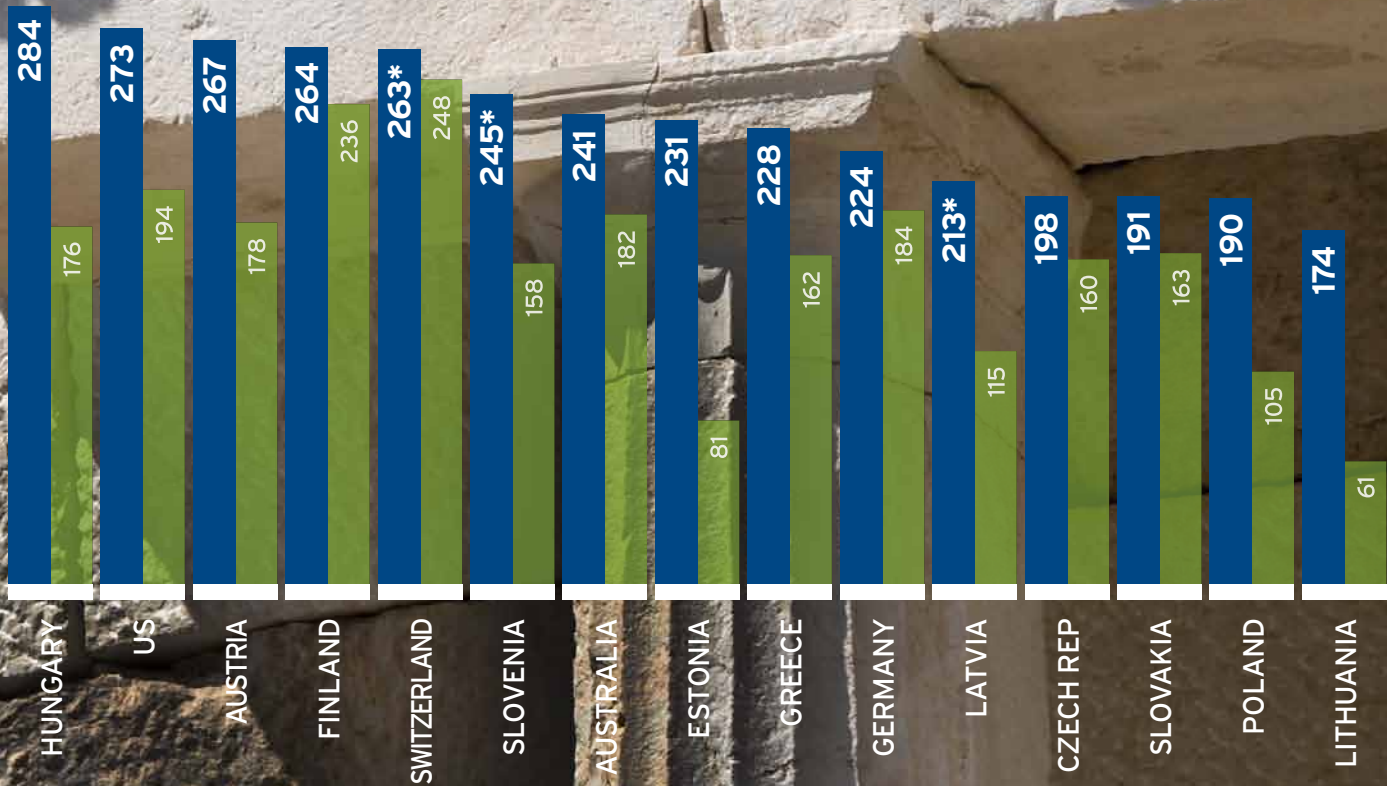


NON-FINANCIAL SECTOR DEBT AS A % OF GDP

■ MOST RECENT DATA
■ DATA FROM 1995

* DATA FROM 2001

Sources: National sources, OECD, Eurostat and Citi Research



Estimating Macroeconomics responses

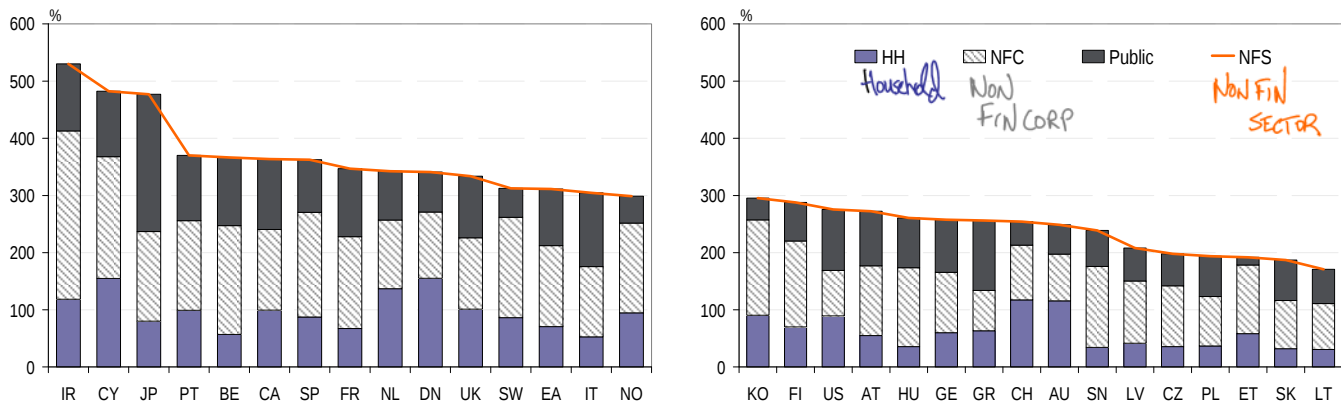
We estimate responses in macroeconomic variables following a deleveraging episode for real GDP, private consumption, gross capital formation, net exports, the stock of domestic credit to the private sector (from IMF, see above), and public debt.

Responses were approximated by estimating deviations from the pre-recession (pre-deleveraging) trend after the episode, following IMF (2009). This approach consists of comparing the medium-term level of the variable to the level it would have reached following the pre-crisis (pre-deleveraging) trend, with the medium term defined as seven years after the crisis.

First, we estimate a linear trend through the actual (output) series during a seven-year pre-crisis period that ends three years before the onset of the crisis (e.g. between $t-10$ and $t-3$, t being the year of the crisis). This trend is then applied to values from t onwards to construct a (output) series trend (e.g. $GDP_t = GDP_{t-1} * (1 + \text{trend})$, with $GDP_t = \text{GDP trend at } t$). The (output) series is then subtracted from the (output) series trend.

Levels of debt

Figure 71. Selected Countries – Gross Debt (% of GDP), 2012 Q2



Note: Values for Italy, Ireland and the Netherlands correspond to Mar-12, while for Cyprus and the EA it correspond to Dec-11

Source: OCED, Eurostat, National Sources and Citi Research

The debt of nations: change 1995–2012

- Larger countries, on average, smaller increases in gross NFS debt

More of total debt increase due to increase in public debt.

Average (not GDP-weighted) gross NFS debt-to-GDP ratio, 26 countries, 1995–H1 2012: 94 ppts of GDP, 5.7 ppts of GDP per year.

GDP-weighted average increase 5.3 ppts.

- Smaller countries larger increases.

Smaller countries had larger increases in (gross) debt and the private sector accounted for a larger share of it in many of them

Figure 6. Country Labels

Country	Abbreviation
Australia	AU
Austria	AT
Belgium	BE
Canada	CA
Cyprus	CY
Czech Republic	CZ
Denmark	DN
Estonia	ET
Finland	FI
France	FR
Germany	GE
Greece	GR
Hungary	HU
Ireland	IR
Italy	IT
Japan	JP
Korea	KO
Latvia	LV
Lithuania	LT
Netherlands	NL
Norway	NO
Poland	PL
Portugal	PT
Slovakia	SK
Slovenia	SN
Spain	SP
Sweden	SW
Switzerland	CH
UK	UK
US	US
Euro Area	EA

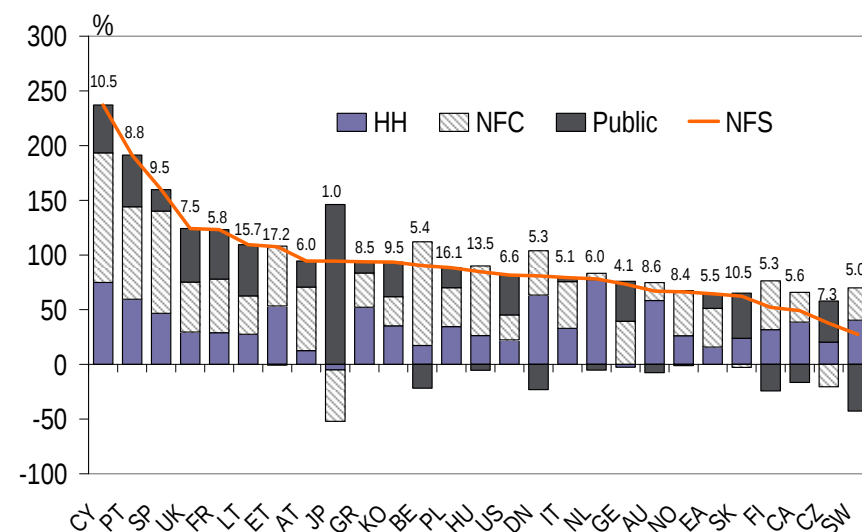
Source: Citi Research

Cyprus, Portugal, and Spain had the largest increases in NFS gross debt-/GDP in our sample – more than 150ppts of GDP

The aggregate picture conceals much diversity.

There is a difference between smaller and larger countries: in our sample, larger countries on average had smaller increases in gross NFS debt and more of the total debt increase was accounted for by increases in public debt. Thus, the simple average (not GDP-weighted) increase in the gross NFS debt-to-GDP ratio across the sample of 26 countries between 1995 and H1 2012, was 94ppts of GDP (5.7ppts of GDP per year) compared to the GDP-weighted average increase of 5.3 percentage points and 89ppts for the 17 countries with longer data series which were on average still larger.⁶ These data do not even include some of the small countries with the largest increases in debt, as data for the earlier period for these are not available. For example, for Ireland and Latvia, the data are only available from 2001 and 1998, respectively, but between these dates and today, their total non-financial debt increased by 307ppts of GDP (19ppts per year) and 93ppts (5.6ppts), respectively.

Figure 7. Selected Countries – Non-Financial Sector Debt/GDP ratio, Change 1995-Latest



Note: Public is the general government. For the EA change corresponds to 1999-2011. Latest values are for Jun-12, except for Italy, the Netherlands, Ireland (all Mar-12), and Cyprus (Dec-11). Numbers above the columns are average growth rates of the nominal stock of gross debt in local currency between 1995 and the latest observation. All values are expressed on a non-consolidated basis except for Australia and Portugal. See Figure 6 for a list of country labels. Source: National sources, Eurostat, OECD, and Citi Research

Cyprus, Portugal, and Spain were the countries in our sample that had the largest increases in NFS gross debt to GDP ratios, with NFS gross debt-to-GDP rising by at least 150ppts (or almost 10ppts/year). Ireland and Latvia would likely also have been in this category, if the data had been available for the entire period. The countries which saw the largest increase in debt often shared certain characteristics, including being an emerging European country (the Baltic countries, Hungary), being a financial centre (Cyprus, UK, Ireland) or having had a housing boom (Baltics, Ireland, Spain). Despite similarities in economic development and structure, some regional differences exist. For example, the Czech Republic and Slovakia had among the smallest increases in gross NFS debt (while Hungary did not), and gross NFS debt in Finland and Sweden grew only modestly, while the debt increase in Norway was larger.⁷

⁶ The GDP weighted average increase in real GDP (measured in constant USD) was 39% (2.4% pa), and nominal GDP grew on average by 100.4% (6.3% pa) since 1995.

⁷ In Norway public gross debt remained relatively stable over this period, while it fell sharply in Sweden, Finland and Denmark. The differential between the CEE countries was mostly driven by differential increases in NFC gross debt.

Totals for advanced economies

- Non-financial sector gross debt
JP, IT, UK, PT, ES, BE, GR, FR, FI, ND, US, KO, AU, AS,
SW, GE, CA

Total:	1980: 12.3 US\$trn	2011: 128.5 US\$trn
US GDP:	1980: 2.5 US\$trn	2011: 15 US\$trn

Why Does Debt Matter in General?

- How evaluate statements like “There is too much debt and too little equity in developed markets today.”
- Recall in the Modigliani-Miller world, capital structure does not matter.
- In the real world, distortionary taxes, asymmetric information, limited liability, and costs of default imply that debt and leverage do matter.
- When is debt “excessive” in equilibrium?
- What sort of debt? private HH, private sector, public?

Why Does Debt Matters today

- Excessive debt can cause systemic crises
- The process of bringing down debt can be long-lasting and painful
- High indebtedness can expose agents to economic shocks and create systematic fragility
- High debt was at the heart of the 2008 financial crisis and the European sovereign debt and banking crisis
- Private savings tend to increase in the aftermath of financial crises
- The incompleteness of markets is a major obstacle to the efficient allocation of resources over time and across states of nature.
- One's wages can be attached, but human capital cannot be collateralised nor, when a household declared insolvent, can its human capital be attached in full.
- In the US, debt-to-income ratios have gone up more for the medium- and high-income Households than the low income households.
- In the UK lower income HHs are more leveraged compared to higher income HHs

Market Incompleteness

- Samuelson–Diamond Model: Golden Rule allocation of physical capital. The best that a planner can do so as to maximize utility of the typical generation:

$$f_k = 1 + R \cdot \text{Pop. Growth.}$$

With arbitrary preferences, Savings/investment, $f_k = 1 + \text{ROI}$, in laissez faire need not produce this.

Markets are profoundly incomplete; infinity of markets are not operating.

- If it is possible to bring about an improvement, like when the economy saves too much and maintains too high a capital labor ratio, i.e., economy *dynamically inefficient*, then: *real* public debt allows for individuals to place their savings at the equilibrium rate of interest, while not interfering with individuals' savings behavior. By making investment less than savings, it brings it down to its socially optimal level, economy becomes dynamically efficient

Market Incompleteness: Samuelson–Diamond

Welfare improvement when 2nd-period labor endowment is subject to idiosyncratic risk:

- dynamic inefficiency ($ROI < R.Pop. Growth$)? too much capital, reducing investment improves welfare.
- dynamic efficiency ($ROI > R.Pop. Growth$)? Not possible to make a change and make some better off without making anyone worse off;
BUT with idiosyncratic risk: reducing savings improve welfare!
Why?
- Depends on the sign of

$$\frac{ROI - R.Pop. Growth}{1 + R.Pop. Growth} \bar{l} + COV (L.M., \text{endowment shock})$$

It can be negative even if $ROI > R.Pop. Growth$.

Why Overlapping Generations Model Matters

- *Two*-overlapping generations does *not look* very realistic, but can have *arbitrary* number of overlapping generations, arbitrary *demography* and life expectancy patterns.
- Life cycle savings and investment in productive activity can coexist public debt.

Debt can be a *bubble*, bringing in expectations.

And saddlepoint stability, *good news* for economists to help manage the economy.

While we do need to demonstrate the practical importance: why does composition of debt varies. See Figure.

Estimating Macroeconomics responses

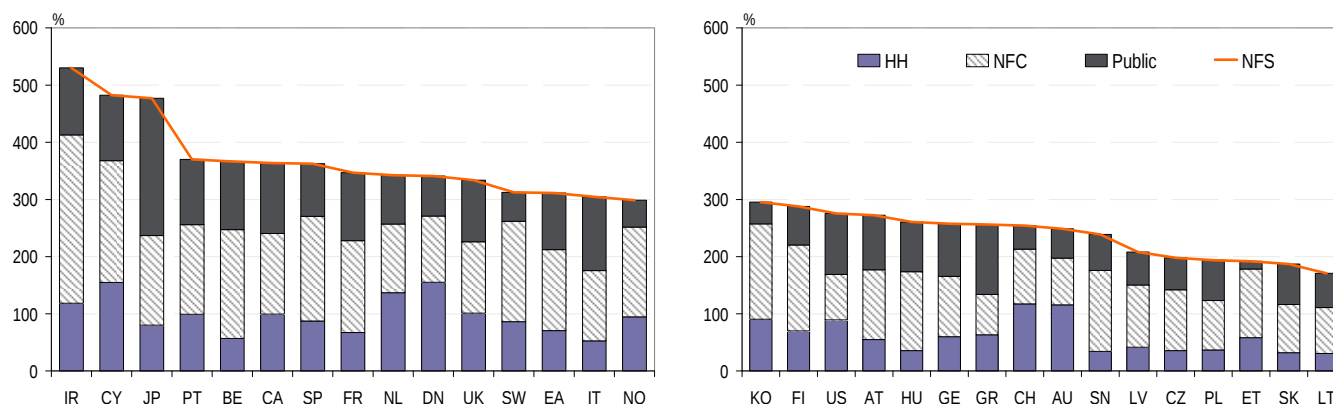
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Why Overlapping Generations Model Matters

- It is *not* a theoretical nicety, but fundamental to understanding the actual economy!