

Credit for Growth and Credit for Bubbles

Recognising the Role of Banks and the Policy Implications

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The Link Between Money and the Economy

Conventional theory assumed that all money is used for GDP transactions.

Effective Money = nominal GDP

MV = PY

with constant or stable V

“an identity, a truism” (M. Friedman, 1992)

“valid under any set of circumstances whatever” (Handa, 2000)

Really?

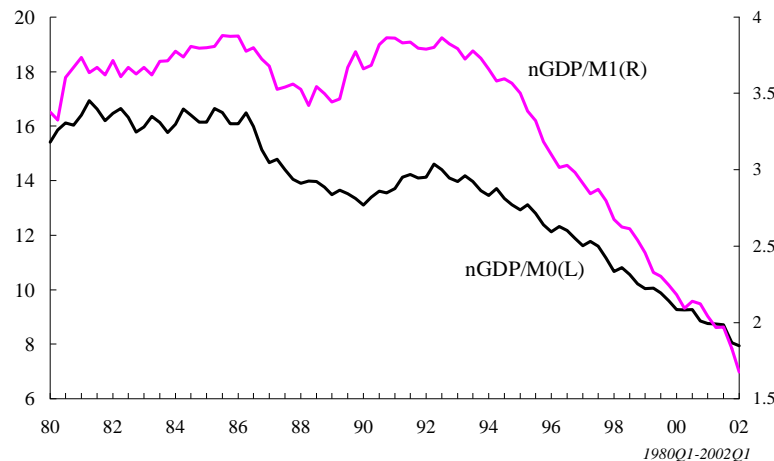
The ‘Anomaly’ of the Velocity Decline

$$MV = PY; \quad M^d = kPY$$

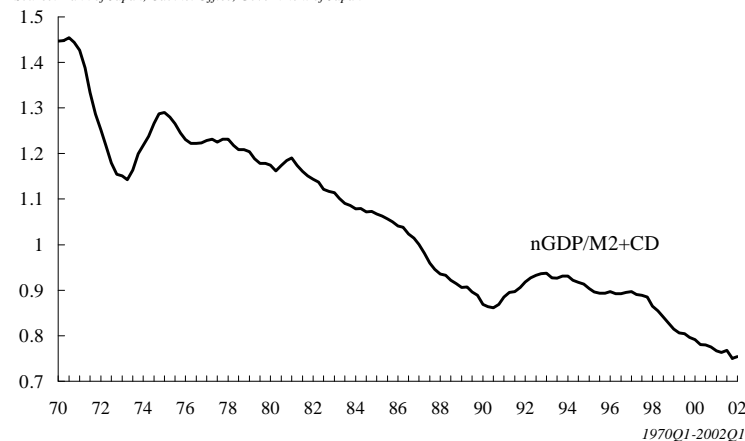
(V const.; k const)

But:

- **Velocity** of ‘M’ deposit aggregates **declined**
- **‘Breakdown of the money demand function’** in Japan, US, UK, Scand., Asia
- **‘Mystery of the missing money’**
- This is a world-wide “puzzling” anomaly
Belongia Chalfant (1990).
- The quantity relationship “came apart at the seams during the course of the 1980s”
Goodhart (1989)
- “Once viewed as a pillar of macroeconomic models”, it “is now ...one of the weakest stones in the foundation” (Boughton, 1991).



Source: Bank of Japan, Cabinet Office, Government of Japan



Source: Bank of Japan, Cabinet Office, Government of Japan

The 'Anomaly' of Money

To solve the velocity puzzle, we need to answer some basic questions:

What is money? Where does it come from? How can we measure it?

- Textbooks say they **do not know**. They admit that deposit aggregates M1, M2, M3 or M4 are not very useful measures of the money supply.
- Monetarists (Friedman etc.) admit that there is no clear cut-off between private sector assets when defining M-aggregates.
- “The existence of more than one monetary aggregate is itself indicative of the problems defining money entails.” (Miller and Van Hoose, 2004:417)

The 'Anomaly' of Money

- Even the **Federal Reserve does not tell us what money is:**

“there is still no definitive answer in terms of all its final uses to the question: What is money?”

- Willem Buiter (1999): “There is no satisfactory theory of money. It has long been recognised that there is no convincing theory of the emergence and use of a general means of payment and medium of exchange. ...Even more damaging... is the absence of a theory of the numeraire. Conventional economics cannot explain why money rather than oranges are the numeraire.”
- Charles Goodhart (2013): “There is no theory of the money supply.”

Methodology

1. Deductive: Dominant in Economics

Axioms, assumptions, theoretical models

2. Inductive: Dominant in the Natural Sciences

Empirical facts, observation of patterns, postulation of testable hypotheses

‘Solving’ the Money Puzzle Through the Deductive Methodology

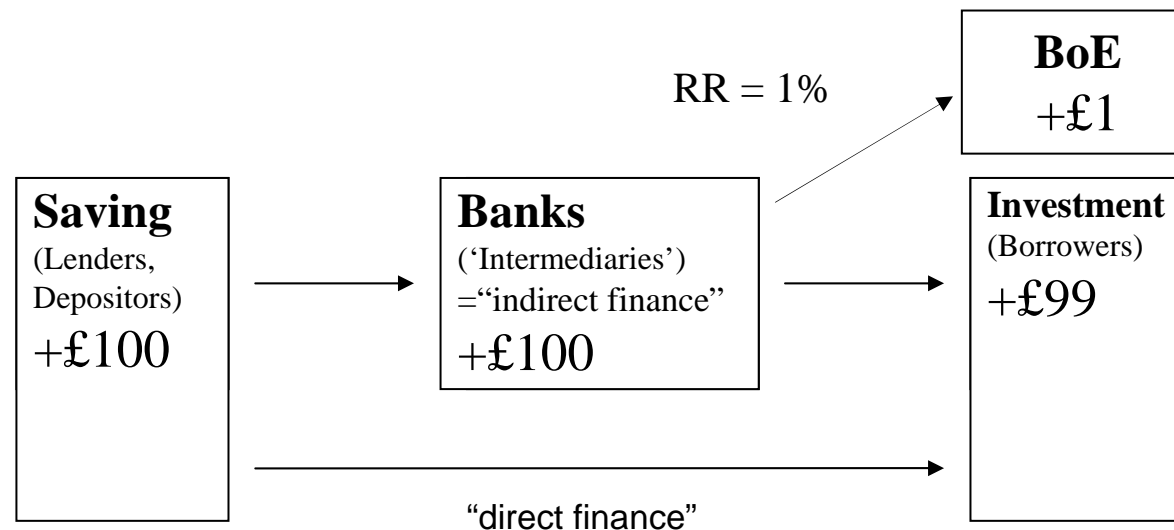
1. Deductive:

<i>Axiom:</i>	rational self-interested profit-maximisation
<i>Assumptions:</i>	perfect information, perfect competition, complete markets, flexible prices, no transaction costs
<i>Result:</i>	Equilibrium, efficient markets, no need for money, no need for banks

Moneyless economic models: Walsh (2003); Woodford (2003), or David Romer (2006), *Advanced Macroeconomics*, 3rd ed.:

“Incorporating money in models of [economic] growth would only obscure the analysis” (p. 3).

Banking in leading theories: Mere financial intermediaries



Thus when the financial crisis hit, the leading economics models and theories **did not include banks** as they were not considered important or special.

There were no banks in mainstream models

The lack of banks in macro models is now lamented:

*“It is fair to say ...that the core macroeconomic modelling framework used at the Federal Reserve and other central banks around the world has included, at best, only **a limited role for ...credit provision, and financial intermediation.**”*

*“...asset price movements and the feedback among those movements, credit supply, and economic activity were **not well captured** by the models used at most central banks. “*

Donald Kohn, Vice-Chairman, Federal Reserve (October 2009)

The Role of Banks in the Economy

2. Inductive:

- Empirical facts:
- over 90% of the value of transactions are booked through the banking system
 - these amount to 70% to 80% of annual GDP, daily
 - banks are 'unique', since they perform a pivotal function in the economy...

The 'Anomaly' of Banking

- Fama (1985) :
 - research on CD and CP markets and their pricing
 - concl.: banks must have some kind of monopoly power compared to other financial institutions and market participants; banks are 'special'.

- Ashcraft (2005):
 - research on how FDIC intervention to close healthy subsidiary banks had an impact on local economy.
 - concl.: banks are 'special'

- Peek & Rosengren (2000): Japanese banks in the US

- Blanchard, Fisher (1989): "The notion that there is something about banks that makes them 'special' is a recurrent theme."

- Werner (1997, 2005):
 - credit crunch in Japan had significant negative impact on economic activity;
 - why could foreign banks, non-banks or capital markets not substitute?

The 'Anomaly' of Banking

- Allen, Santomero (*JBF*, 21, 1998): Traditional theories of **financial intermediation** based on transaction costs and asymmetric information... are designed to account for institutions which take deposits or issue insurance policies and channel funds to firms. **Although transaction costs and asymmetric information have declined, intermediation has increased.** New markets for financial futures and options are mainly markets for intermediaries rather than individuals or firms. **These changes are difficult to reconcile with the traditional theories.**

- Mishkin, Eakins (2009) ask:
 - What makes banks so important in the financing of businesses?
 - What are the reasons for the lower importance of the stock markets in comparison to other external sources?
 - Why are financial intermediaries more important than securities markets for getting funds from savers to investors?

- “These empirical facts (or puzzles) need to be understood in order to appreciate why financial intermediaries exist and how financial intermediation works.”

The 'Anomaly' of Banking

- **The 'Anomaly' of the recurring banking crises:** Well over 100 in the past 50 years, increasing in frequency and amplitude.

These are not supposed to exist according to traditional theories.

- Are banks really just neutral accountants (agents) or financial intermediaries that collect funds and pay them out to others as loans?

Some crucial facts about banking that textbooks neglect

- A loan is when the use of something is handed over to someone else.
- If I lend you my car, I can't also use it myself.
- **There is no such thing as a 'bank loan'.**
- Banks never lend money. They never lend out their 'deposits'. They cannot lend on their reserves at the central bank to the non-bank public
- What banks do is more important

What is money?

- Where does it come from?
- Only about 3% of the money supply comes from the central bank.
- Who creates the remaining 97% of our money supply and who allocates this money?

A: The commercial banks

- This explains why banks are special: They are not (just) financial intermediaries. They have a license to 'print money' by **creating credit**.
- Banks do not lend money, they **create** it.

What makes banks unique The case of a £1000 loan

Balance Sheet of Bank A

Step 1 New deposit of £100 with Bank A, in the form of a bank transfer: transferred by Bank B from its reserve account at the central bank into that of Bank A

Assets	Liabilities
£ 100	£ 100

Step 2 With a reserve requirement of 1%, Bank A can now extend £ 9,900 in credits. Where do the £ 9,900 come from? From nowhere.

Assets	Liabilities
£ 100	£ 100
+	+
£ 9,900	£ 9,900

NB: No money is transferred from elsewhere

Banks create money – out of nothing

➤ **Does the reserve requirement limit banks' money creation?**

Certainly not when it is zero, such as in the UK.

But even when it is positive, central banks that smooth interest rates are forced to inject whatever reserves are needed to keep interest rates in check (Goodhart, 1989).

➤ **Does the Basel capital adequacy requirement limit banks' money creation?**

Not necessarily: Higher capital requirements can be met during boom times by banks issuing more capital, which is paid for by the increased money created by banks.

An example of direct capital bootstrapping: In 2008, Barclays created credit out of nothing, for the benefit of Qatar, so that this investor could purchase Barclays preference shares with the money, boosting Barclays' capital.

This makes banks special: They create the money supply

➤ Schumpeter (1954):

“...it proved extraordinarily difficult for economists to recognise that bank loans and bank investments do create deposits. In fact, throughout the period under survey they refused with practical unanimity to do so”.

- Fed Board Governor Jeremy C. Stein (2014): “The creation of private money — that is, safe claims that are useful for transactions purposes — is obviously central to what banks do.”
- **The creation of the money supply has been in private, commercial hands for a long time.**

Bank Credit Creation: Not in Economics Textbooks, but Recognised by Central Banks:

“The actual process of money creation takes place primarily in banks.”
(Federal Reserve Bank of Chicago, 1961, p. 3);

“By far the largest role in creating broad money is played by the banking sector ... When banks make loans they create additional deposits for those that have borrowed.” Bank of England (2007)

“Over time... Banknotes and commercial bank money became fully interchangeable payment media that customers could use according to their needs” (ECB, 2000).

“Contemporary monetary systems are based on the mutually reinforcing roles of central bank money and commercial bank monies.” (BIS, 2003).

“The commercial banks can also create money themselves... in the eurosystem, money is primarily created by the extension of credit...” (Bundesbank, 2009)

Two Problems with the Quantity Equation $MV=PY$

1. How to measure money 'M'? Deposit aggregates are not suitable

- deposit aggregates measure money not used for transactions, i.e. **money out of circulation**

- the equation of exchange says that

the money used for transactions must be equal to the value of these transactions.

- the majority of transactions takes place without cash, as book-entries in the banking system

- for growth, i.e. **an increase in transactions, more purchasing power/money must have been created.**

- in our financial system this is possible only via bank **credit creation.**

- thus the right measure of 'money' in the equation of exchange is credit/ credit creation (Werner, 1992).

2. Asset transactions are missing

The standard 'equation of exchange'

$$(1) \quad PY = MV$$

is a **special case** of

$$(2) \quad PQ = MV \quad (\text{Fisher, 1911})$$

Implicit assumption:

$$(3) \quad PY = PQ \quad (\text{i.e. all transactions are part of GDP})$$

But: asset transactions are not part of GDP.

Problem of traditional approach: it ignores financial transactions, which are often larger than real economy transactions
(Werner, 1992, 1997)

Explanation of the ‘anomalies’: The Quantity Theory of Credit (Werner, 1992, 1997)

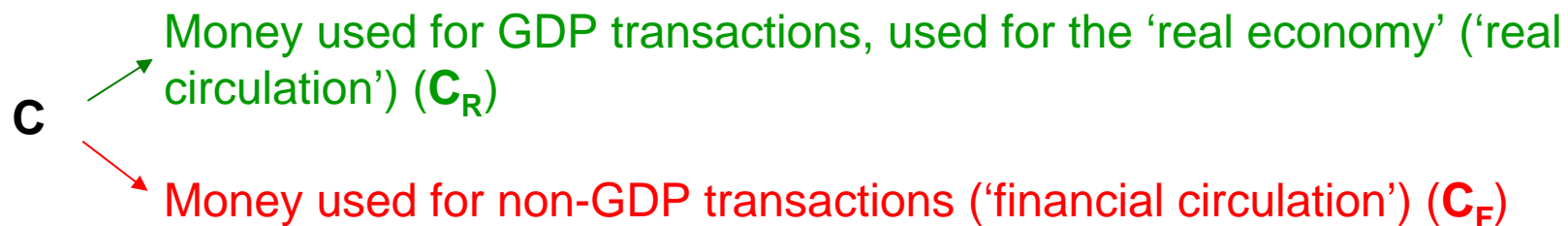
The link between money and the economy

What is true:

$$\begin{array}{rcl} \text{money used} & = & \text{value of all transactions} \\ \mathbf{CV} & = & \mathbf{PQ} \end{array}$$

Since a substantial proportion of money is used for **transactions that are not part of GDP**, we need to divide money into two streams:

$$\mathbf{C} = \mathbf{C}_R + \mathbf{C}_F$$



The Quantity Theory of Credit (Werner, 1992, 1997)

Disaggregated Equation of Exchange:

$$(4) \quad C_R V_R = P_R Q_R = P_R Y \quad \text{'real circulation'}$$

$$(5) \quad C_F V_F = P_F Q_F \quad \text{'financial circulation'}$$

Growth:

$$(6) \quad \Delta(P_R Y) = V_R \Delta C_R \quad \text{determination of nom. GDP}$$

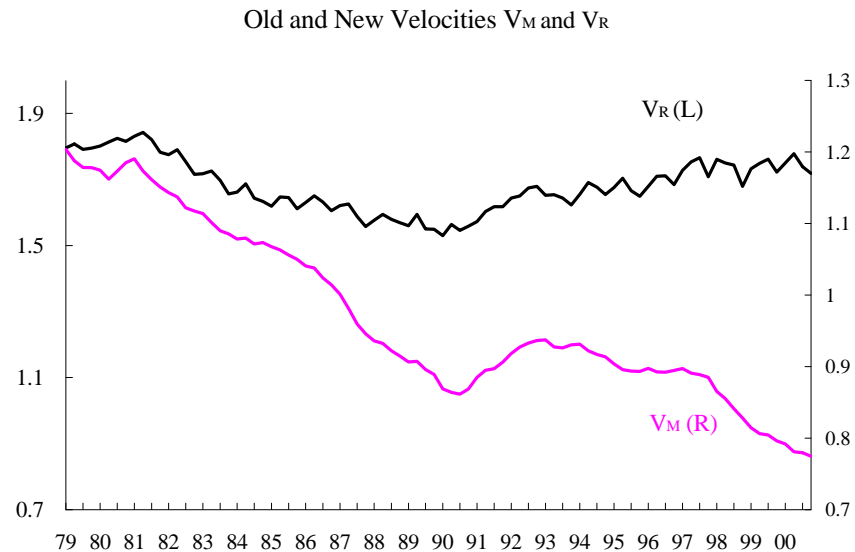
$$(7) \quad \Delta(P_F Q_F) = V_F \Delta C_F \quad \text{det. of asset markets}$$

This Explains Major 'Puzzles' in Macroeconomics

1. Why are interest rates often not effective in moving the economy?
2. Why do we have recurring banking crises?
3. Why are banks special?
4. What is money and how can we measure it accurately?
5. The anomaly of the velocity decline
6. What determines bank lending?
7. What determines asset prices?
8. Why is fiscal policy often not very effective even in the short-run?

Explaining the ‘Velocity Decline’

- If credit for financial transactions rises, the traditional definition of velocity will give the illusion of a velocity decline.
- The correctly defined velocity of real circulation remains constant.



source: Cabinet Office, Government of Japan, Bank of Japan

1979Q1-2000Q4

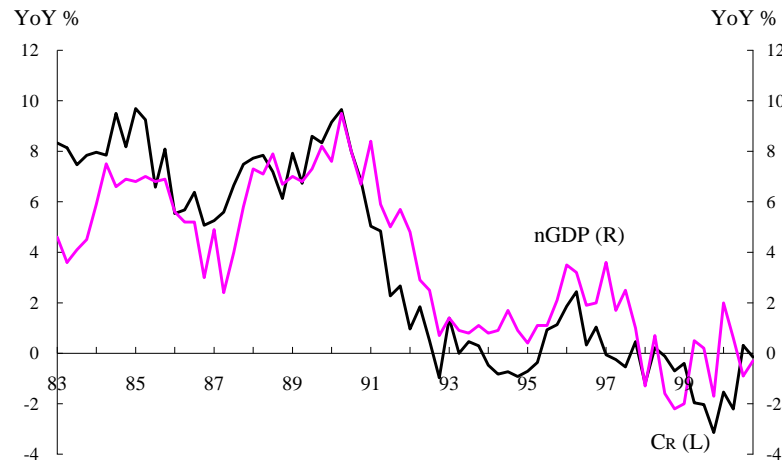
The Quantity Theory of Credit (Werner, 1992, 1997)

$$\Delta(P_R Y) = V_R \Delta C_R$$

nominal GDP = real economy credit creation

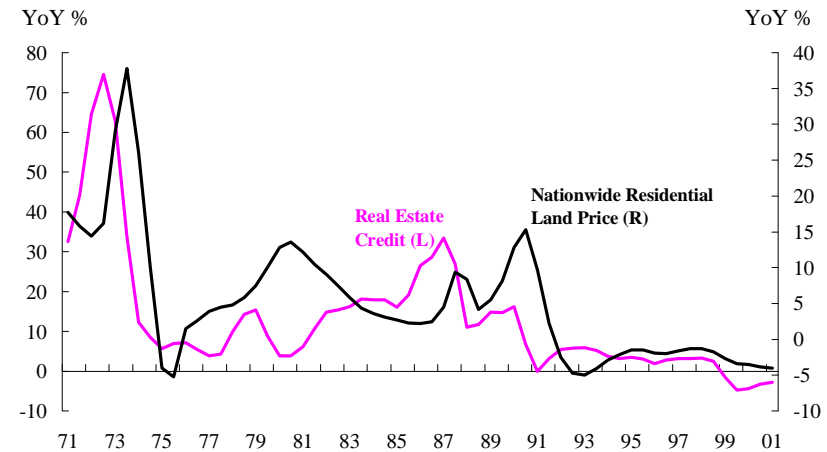
$$\Delta(P_F Q_F) = V_F \Delta C_F$$

asset markets = financial credit creation



Latest: Q4 2000

Real circulation credit determines
nominal GDP growth



Latest: H1 2001

Financial circulation credit determines
asset prices – leads to asset cycles
and banking crises

The Disaggregation of Credit

Credit creation must be divided into 2 streams:

C



Credit used for the 'real economy', determining nominal GDP
(‘real circulation credit’ = C_R)



Credit used for financial (non-GDP) transactions
(‘financial circulation credit’ = C_F)

(The Quantity Theory of Credit, Werner, 1992, 1997)

This is now recognised by the Bank of England in its **Funding for Lending Scheme (FLS)**, introduced 13 July 2012:

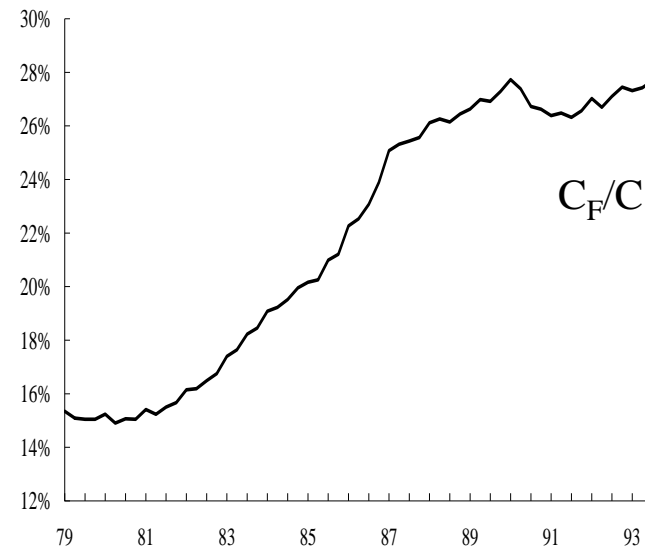
“The FLS is designed to incentivise banks and building societies to boost their lending to UK households and private non-financial corporations (PNFCs) – the ‘real economy’.”

(Bank of England, Quarterly Bulletin 2012 Q4)

Credit explains the boom/bust cycles

- A significant rise in speculative credit creation C_F/C must lead to:
 - increased ‘financialisation’ and lack of support for productive industries
 - asset bubbles and busts
 - banking and economic crises

- Case Study Japan in the 1980s:



Source: Bank of Japan

Loans to the real estate industry,
construction companies and non-
bank financial institutions

**Bank credit creation determines economic growth.
The effect of bank credit allocation depends on
the use money is put to**



Case 1: *Consumption credit*

Result: Inflation without growth

Case 2: *Financial credit*

(= credit for transactions that do not contribute to and are not part of GDP):

Result: Asset inflation, bubbles and banking crises

= unproductive credit creation

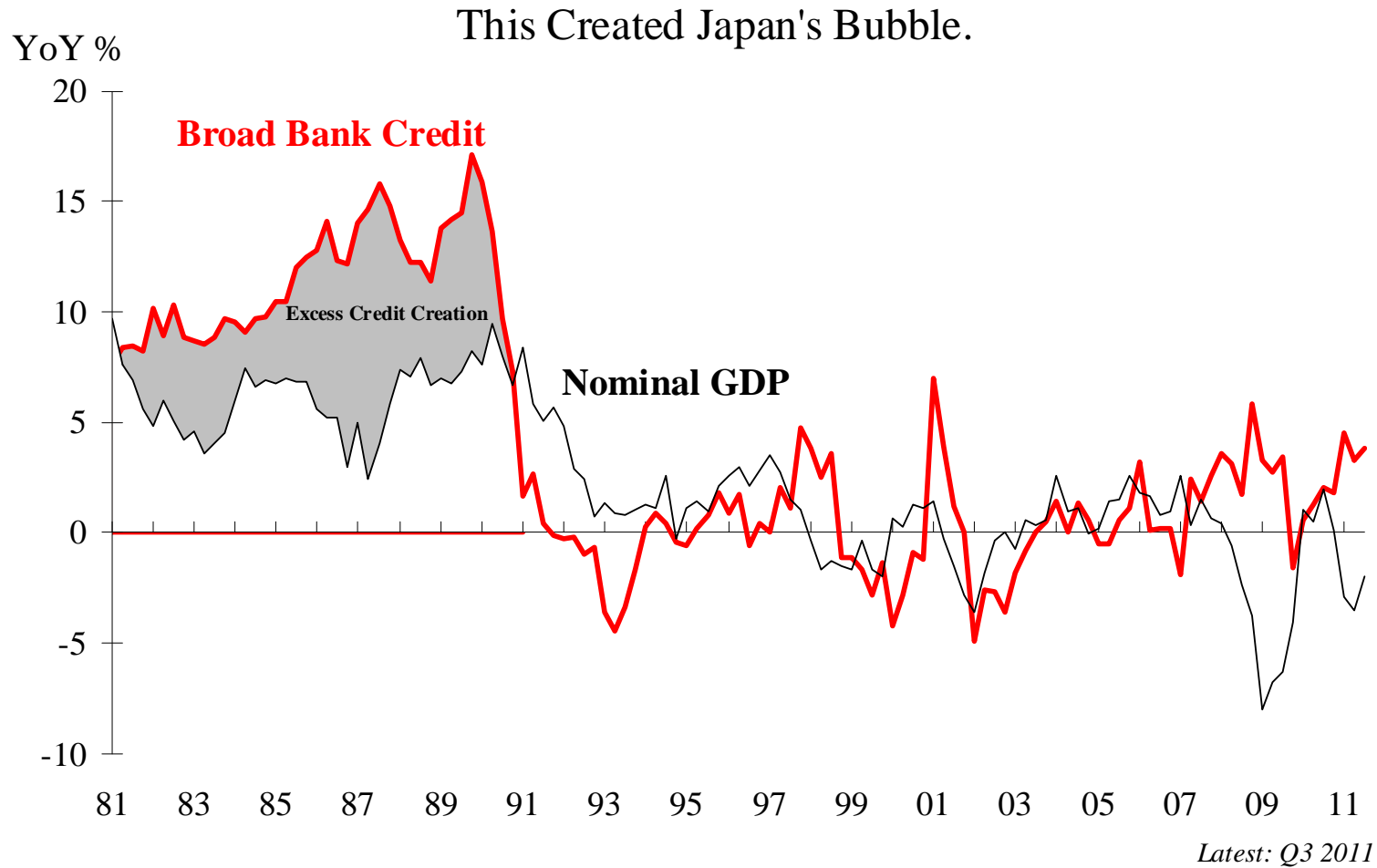
Investment credit

(= credit for the creation of new goods and services or productivity gains)

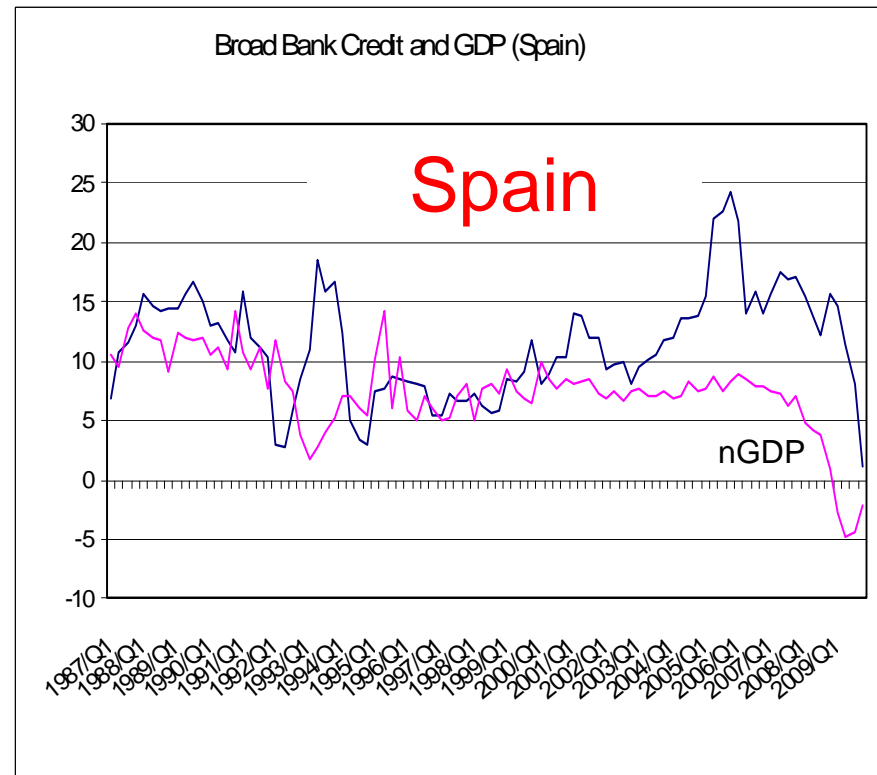
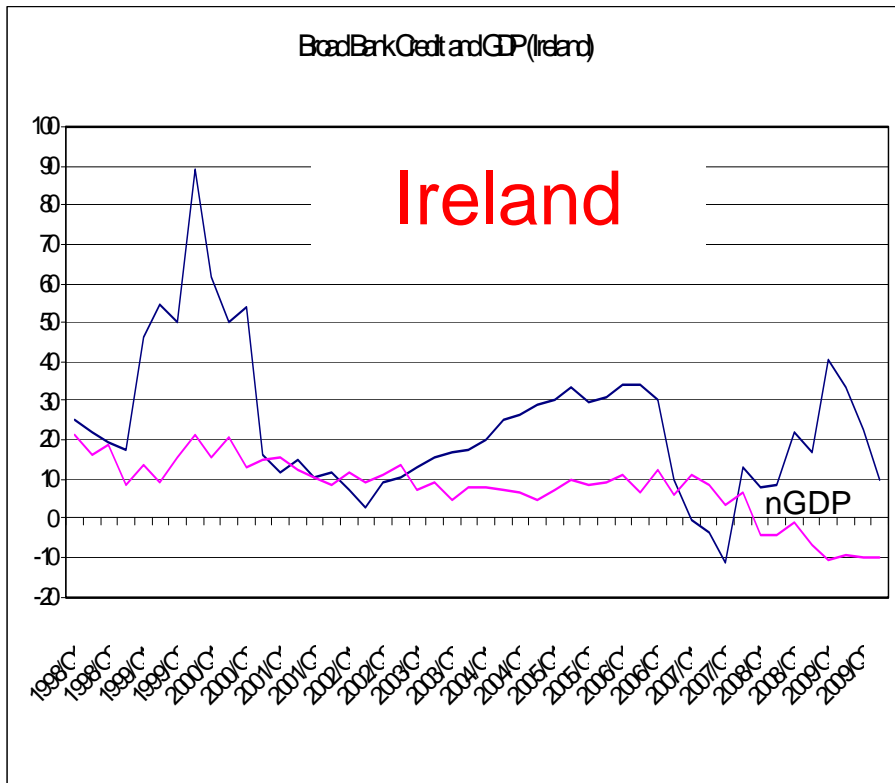
Result: Growth without inflation, even at full employment

= productive credit creation

Warning Sign: Broad Bank Credit Growth > nGDP Growth

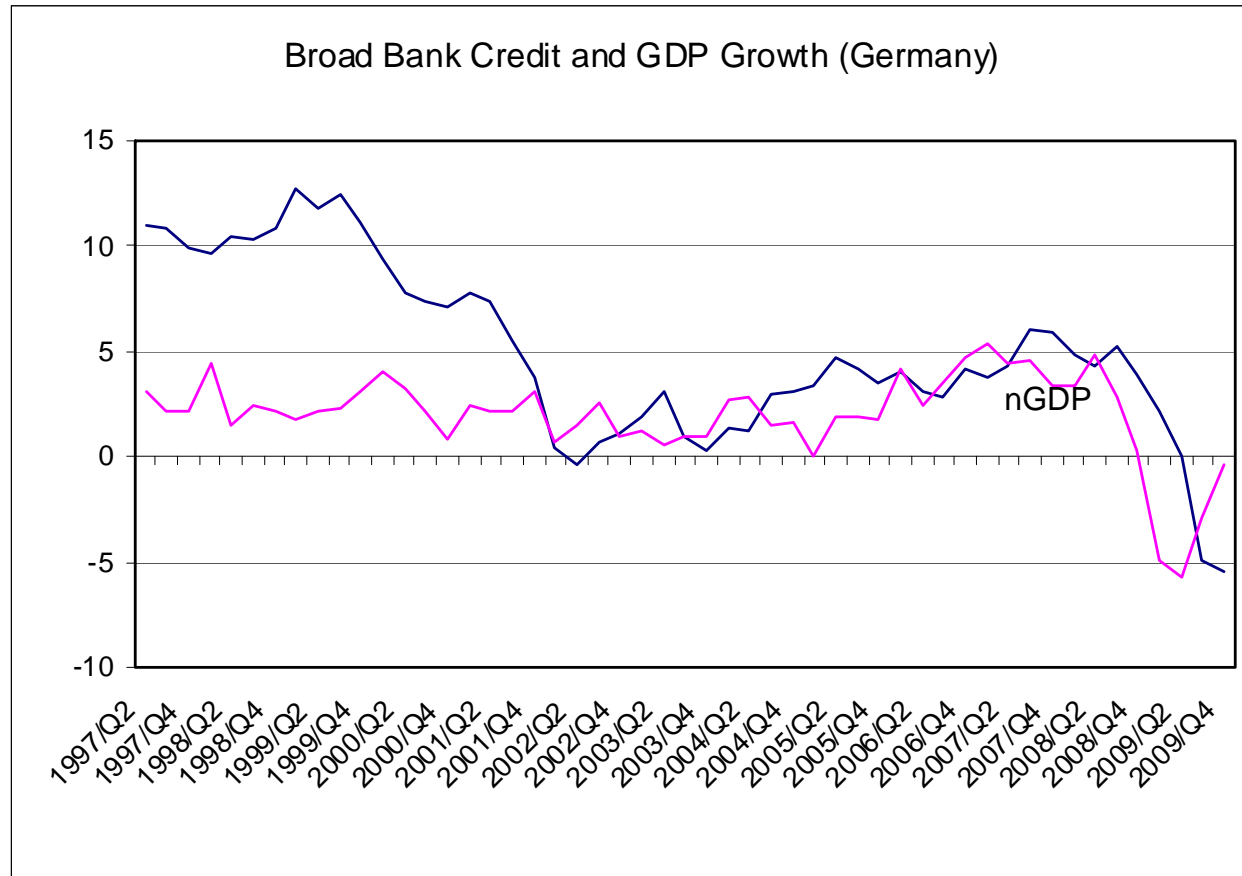


When broad credit creation exceeds nominal GDP growth significantly for several years a bubble is created that must end with a banking crisis



bank credit creation > nominal GDP growth

Germany could avoid this because its banking sector consists to 70% of small, local banks that create credit mainly for GDP (non-financial) transactions.



Proposal of 1994: A monetary policy called 'Quantitative Easing' = Expansion of broad credit creation

Richard A. Werner, 'Create a Recovery Through Quantitative Easing', 2 September 1995, *Nihon Keizai Shinbun* (Nikkei)

日本経済新聞 1995年(平成7年)9月2日(土曜日) (26)

実体経済の購買力不足

一九九〇年代末、日本が初めて経験した景気後退は、物価の暴落、企業の倒産、失業率の上昇、そして国民の生活水準の急激な低下を招いた。この景気後退は、戦後最大の規模を記録した。この景気後退の原因は、物価の暴落、企業の倒産、失業率の上昇、そして国民の生活水準の急激な低下を招いた。この景気後退の原因は、物価の暴落、企業の倒産、失業率の上昇、そして国民の生活水準の急激な低下を招いた。

景気回復、量的金融緩和から

景気回復の鍵は、量的金融緩和にある。量的金融緩和とは、中央銀行が市場に大量の資金を供給することによって、物価を安定させ、企業の倒産を防ぎ、失業率を下げ、国民の生活水準を向上させることである。量的金融緩和は、景気回復の鍵となる。量的金融緩和は、景気回復の鍵となる。量的金融緩和は、景気回復の鍵となる。

総購買力を増やせ 4%程度の成長は可能

総購買力を増やせば、4%程度の成長は可能である。総購買力を増やすためには、中央銀行が市場に大量の資金を供給することによって、物価を安定させ、企業の倒産を防ぎ、失業率を下げ、国民の生活水準を向上させることである。総購買力を増やすためには、中央銀行が市場に大量の資金を供給することによって、物価を安定させ、企業の倒産を防ぎ、失業率を下げ、国民の生活水準を向上させることである。

信用破壊招く 不良債権問題

不良債権問題は、信用を破壊する。不良債権問題は、信用を破壊する。不良債権問題は、信用を破壊する。不良債権問題は、信用を破壊する。不良債権問題は、信用を破壊する。

財政政策の効用性増す

財政政策の効用性は増す。財政政策の効用性は増す。財政政策の効用性は増す。財政政策の効用性は増す。財政政策の効用性は増す。

名目GDPと民間リクイディティ

Bank credit creation is a public privilege

- It is not a law of nature that commercial banks should be the institutions creating and allocating the money supply.
- Once we recognise that banks create and allocate 97% of the money supply, it stands to reason that some kind of responsibility goes with this privilege.
- Banks are profit-seeking institutions that have not been asked to consider other factors in their credit creation and allocation decisions. However, governments and regulators have failed to ask banks to **create and allocate credit mainly for productive purposes** and transactions that are part of GDP.
- **Markets simply do not ensure an efficient allocation of credit.**
- Banks have responded by using the privilege to create the money supply **for their own short-term (speculative) gains**.
- This creates unsustainable asset bubbles and costly banking crises and subsequent recessions.

Policy Lessons

- Given the **pivotal role of credit creation and its allocation** all methods to **encourage productive credit creation** and **restrict unproductive bank credit** need to be considered.
- **To do this, all items on banks' balance sheets should be monitored, with credit disaggregated by sector and use.**
- **To avoid banking crises, productive credit creation should be encouraged, and non-GDP credit creation discouraged.**
- **Capital adequacy-based rules have no track record** of doing the job. They cannot end the boom-bust cycles and banking crises.
- The only tool that has an empirical track record in delivering both the right quantity and allocation of credit is a form of **direct 'credit guidance'** or 'credit controls', used in many countries (UK until early 1970s, France until the 1980s: '*encadrement du credit*'; East Asia: '**window guidance**').
- This tool has been at the core of the East Asian economic miracle and remains the central mechanism explaining decades-long high and stable growth in China.

Credit Allocation

*“Are We Allocating Credit? Our actions are aimed at increasing credit flows for the entire economy; we are not trying to favor some sectors over others. However, **an element of credit allocation is inherent in some of our interventions.**”*

“...we have recognized that the resulting effects can be uneven across markets and lenders. This outcome is not a comfortable one for the central bank”

(Donald Kohn, BGFRS, 18 April 2009)

Successful and Unsuccessful Bank Restructuring Japan 1945-47 vs. Japan 1990s

- Bad debts in 1945 approached 100%. Yet, the problem was quickly solved and a healthy banking sector and strong economic growth re-established.
- The solution: bad loans were quickly removed from bank balance sheets, without costs to economy or government.
- How? The central bank bought the bad loans above market value. On the central bank's balance sheet, they will cause no harm.
- The costs of this solution are zero. Tax money is not used. The central bank merely credits the sellers in its accounts.
- Even if loans with a face value of 100 but a market value of 20 are purchased at face value by the central bank, it will make a profit (of 20). (The magic of credit creation).
- 1990s: the Bank of Japan refused to do this, insisting on its **independence**.

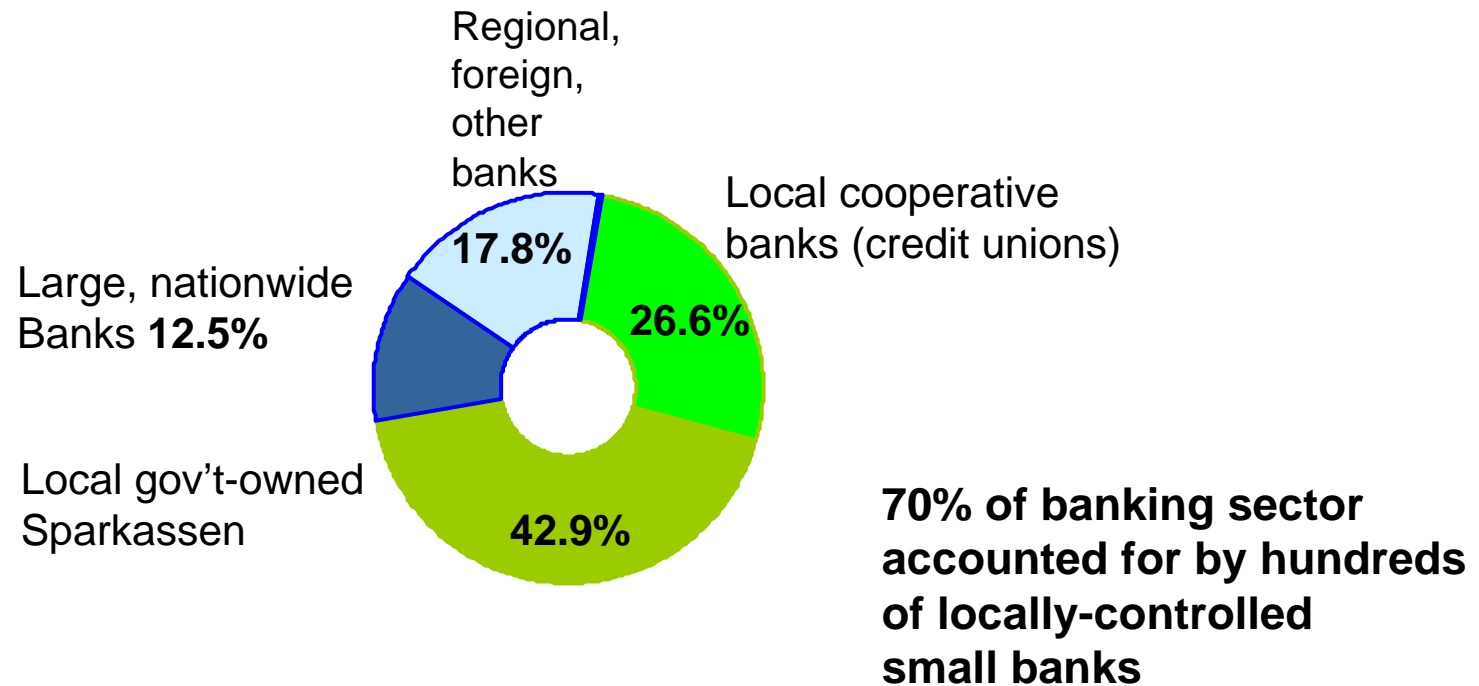
The Solution: How to recapitalise banks, increase credit creation and boost demand - at zero cost

- All the government needs to do is change the way the bailout is funded: it should **not be the government who pays for this, but the central bank.**
- If the central bank pays, and the assets stay on its balance sheet, there will be **no liability for the government, no increased debt, no increased interest burden, and no crowding out of private demand.** Most of all, there will be **zero costs for anyone.**
- Even the Bank of England is sure to make a **profit** (as it acquires assets of a value higher than zero; but its funding costs are zero).
- A radical idea, never implemented? Think again.
- Bank von England 1914, Bank von Japan 1945, Federal Reserve 2008

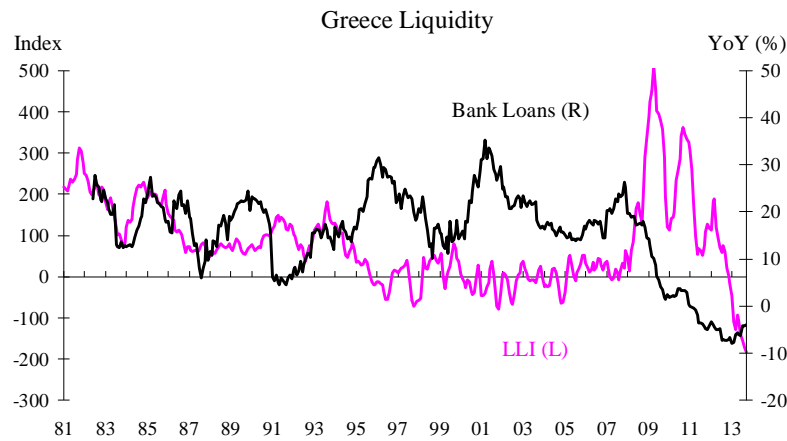
Policy Lessons

- Another way to obtain a sustainable allocation of credit creation is to **shape the structure of the banking sector** so that banks dominate, which have **no interest in harmful speculative credit creation: small, locally-headquartered banks.**

Banking in Germany

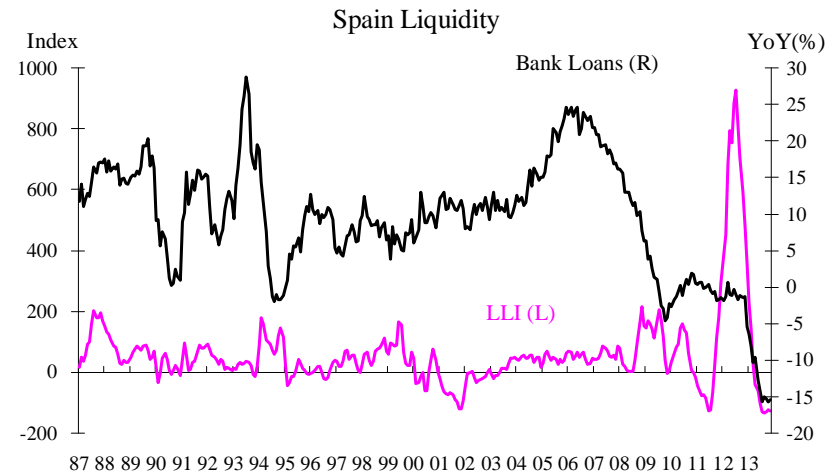


Without bank credit creation the economy will shrink



Latest: Sep 2013

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Latest: Nov 2013

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Bank credit creation is negative in Greece, Ireland,
Spain, Portugal, Italy

Applying this Framework to Solving the European Sovereign Debt Crisis:

Enhanced Debt Management

- Ireland, Portugal, Spain, Italy and Greece need to stimulate economic growth
- Their governments need to save money and reduce borrowing costs.
- Bank credit growth needs to expand and banks need a safe way to expand their business and their returns
- A major problem has been the marking to market of tradable debt instruments (bonds) that caused the vicious cycle between sovereign risk and bank stability.

Solution: Enhanced Debt Management

- Fundamentally, the problem is a **funding problem** (as the lending aspect of the rescue programmes, and the repeated sell-offs in bond markets attest).
- Have all funding options been considered?
- **Task: Design an ideal funding instrument with dream-like features:**
 - **non-tradable and not required to be marked to market**, but on books at face value;
 - **cheaper**, requiring a lower interest rate, than the bond market yields, saving money;
 - **not subject to rating** by the credit rating agencies (so no downgrades);
 - **available domestically**, hence not requiring borrowing from abroad, thus resulting in lower total debt and greater fiscal and financial stability domestically and in the eurozone;
 - generates **returns for the domestic banking sector**, allowing organic growth of reserves and capital buffers without direct bailout;
 - **available without the conditionality** of deep fiscal tightening, asset sell-offs and deflationary structural reform;
 - **boosts domestic demand**, delivering economic growth, so lowers deficit/GDP and debt/GDP ratios by shrinking nominator and raising denominator;
 - **available on demand by being created out of nothing, without the need for any capital by the lenders.**

Solution: Enhanced Debt Management

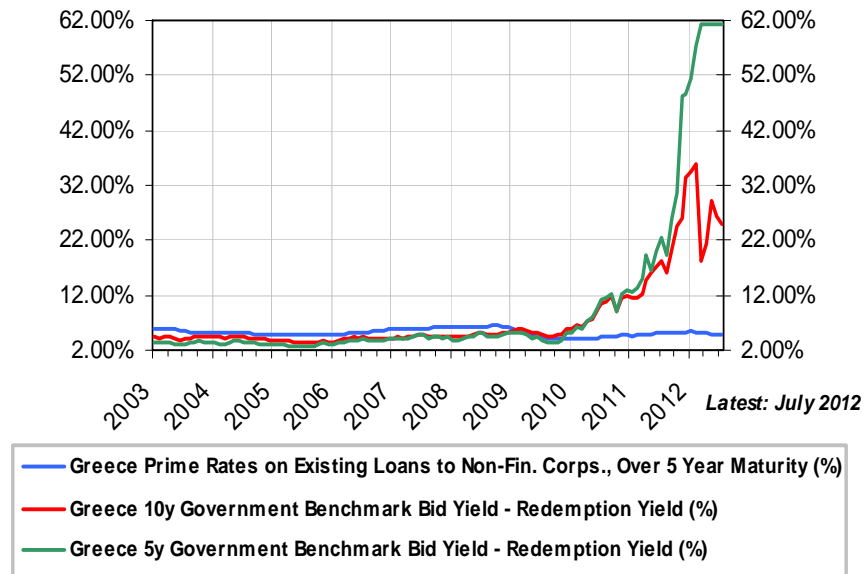
- Utopian?
- Impossible for investment banks to deliver – they would not earn money on it.
- Fortunately, **it already exists**: the simplest debt instrument: a **bank loan contract**
 - **non-tradable and banks are not required to mark their loan contracts to market** – there is no market. They are kept on the banks' books at the initial face value until the loan matures. There is no fluctuation in the value of the loan throughout its life. Speculative attacks on the debt are impossible.
 - not rated, **no impact of potential rating downgrades**
 - **available domestically**, able to deliver a more stable debt structure that is not dependent on borrowing from abroad. This results in **lower total debt** and greater fiscal and financial stability for all parties in the eurozone.
 - when banks need to **generate returns to boost reserves and capital**, the healthiest method is to allow them to earn these through growth, i.e. an expansion of their lending. By lending to the gov't, bank lending would rise significantly & quickly. Even outstanding bonds could be redeemed and switched to bank finance this way.

Solution: Enhanced Debt Management

- The simplest debt instrument: a **bank loan contract**
 - It is **far, far cheaper**.

Throughout the crisis, untraded **bank credit interest (prime rate – in blue)** has remained far below bond interest yields (usually by several hundred basis points).

Prime Rate vs. Market Yield of Benchmark Bonds: Greece

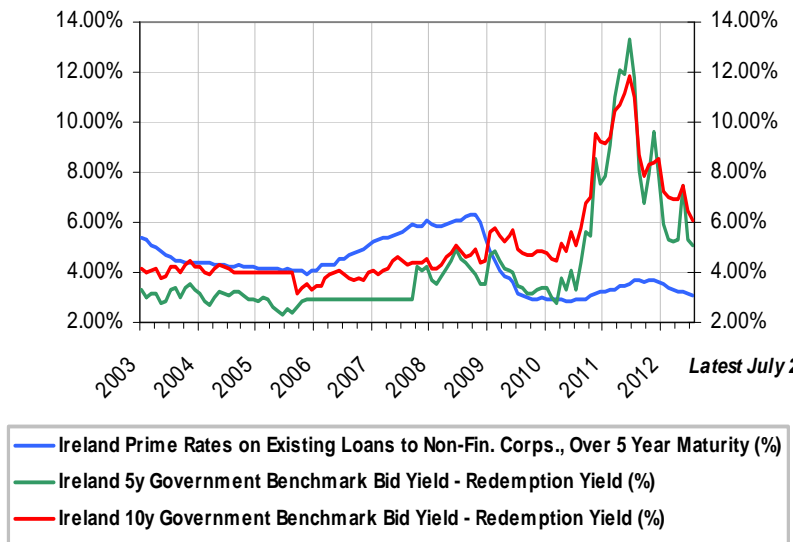


Source: Thomson
Reuters Datastream, ECB

Solution: Enhanced Debt Management

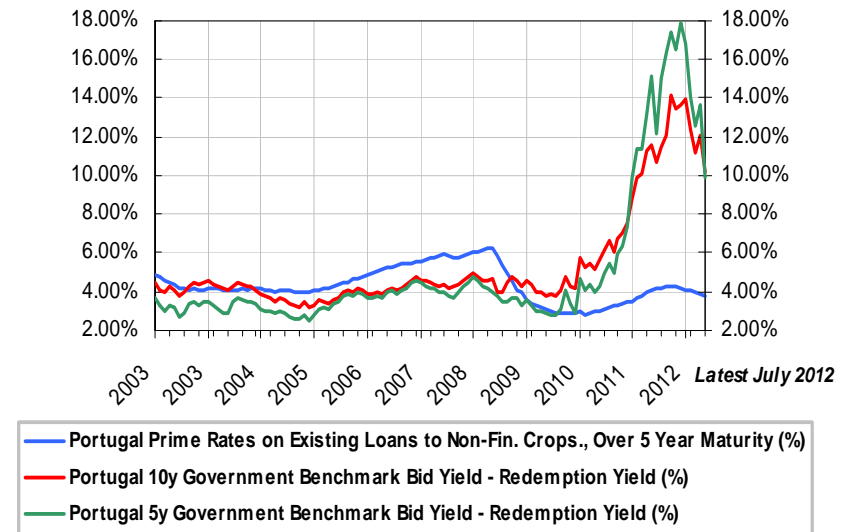
- The simplest debt instrument: a **bank loan contract**
 - It is far, far cheaper.

Prime Rate vs. Market Yield of Benchmark Bonds: Ireland



Source: Thomson
Reuters Datastream, ECB

Prime Rate vs. Market Yield of Benchmark Bonds: Portugal



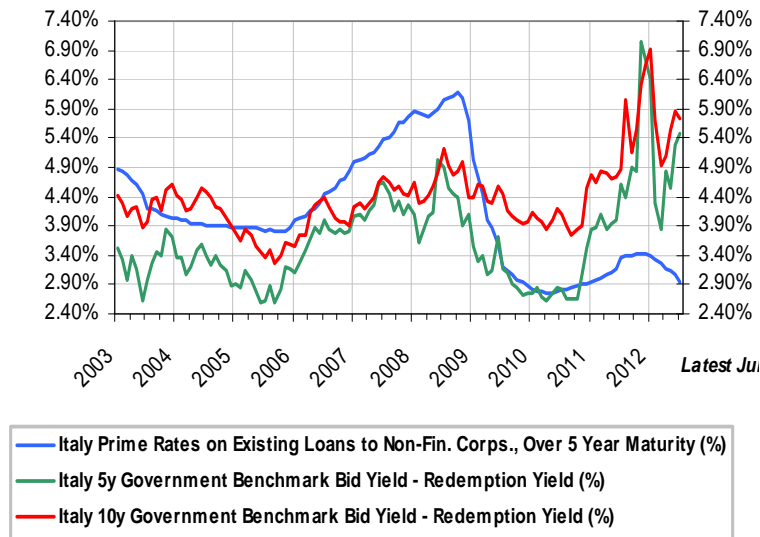
Source: Thomson
Reuters Datastream, ECB

Solution: Enhanced Debt Management

- The simplest debt instrument: a **bank loan contract**

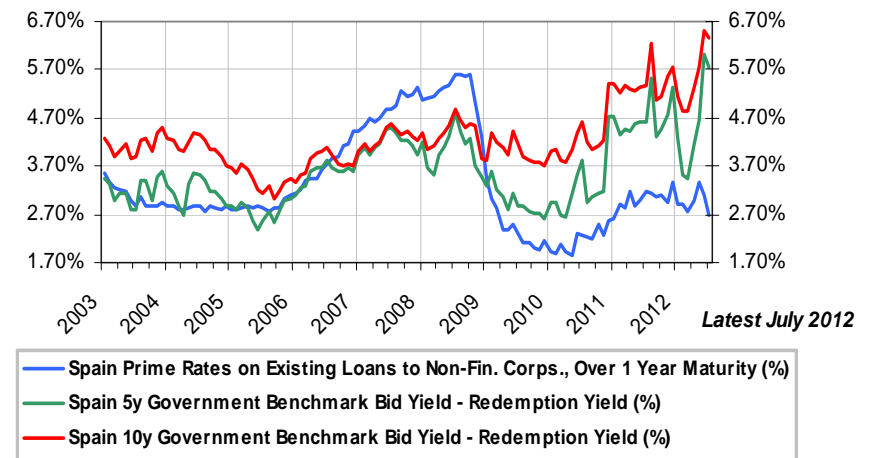
For Italy in 2012, the cost savings due to lower interest would have reached E9.75 bn.

Prime Rate vs. Market Yield of Benchmark Bonds: Italy



Source: Thomson
Reuters Datastream, ECB

Prime Rate vs. Market Yield of Benchmark Bonds: Spain



Source: Thomson
Reuters Datastream, ECB

Solution: Enhanced Debt Management

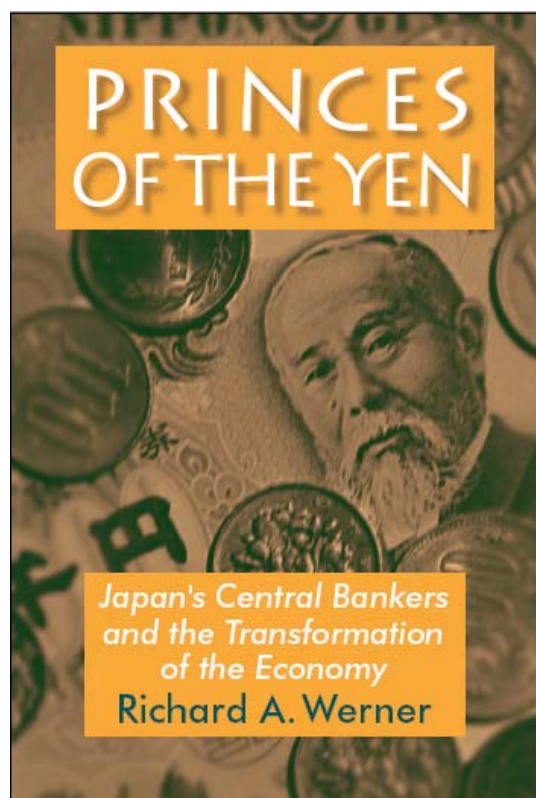
- The simplest debt instrument: a **bank loan contract**
 - **Bank credit creation for transactions** that are part of GDP has been identified as the main determinant of nominal GDP growth. A problem for the eurozone:
 - – 6.6 %YoY in Greece (December 2012)
 - – 13.2% in Ireland (January 2013)
 - – 2.6% in Portugal (January 2013)
 - – 0.8% in Italy (January 2013)
 - – 6.4% in Spain (December 2012)

According to the ECB (2013), the **weak bank credit data is the main reason for the negative growth outlook in the eurozone**. By borrowing from banks, governments can **pump-prime bank credit creation**, ending the current bank credit destruction (negative bank credit growth). This boosts nominal GDP growth, resulting in lower deficits and a slowdown in the debt build-up, and also larger GDP, thus lowering the deficit/GDP and debt/GDP ratios by lowering the numerator and increasing the denominator.

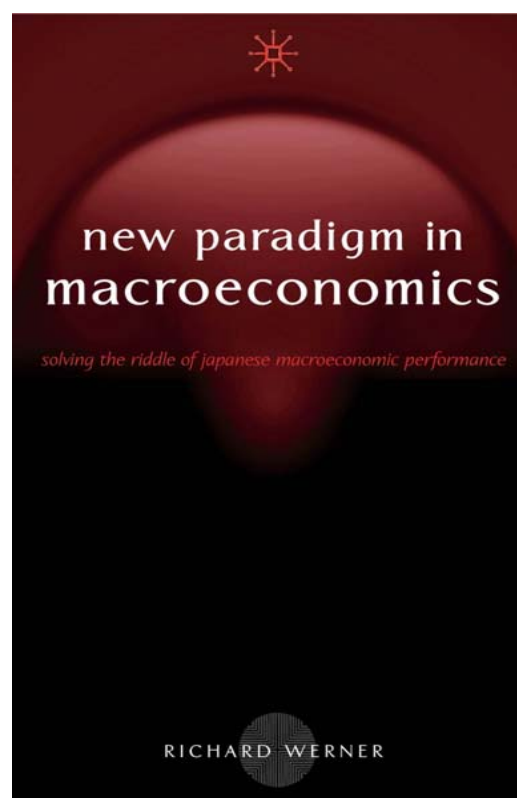
The solution that maintains the euro and avoids default

- Governments should enter into 3-year loan contracts at the much lower **prime borrowing rate**.
- Eurozone governments remain zero risk borrowers according to the Basel capital adequacy framework (banks are thus happy to lend).
- The prime rate is close to the banks' refinancing costs of 1% - say 3.5%.
- **Instead of governments injecting money into banks, banks create new money and give it to the governments.**

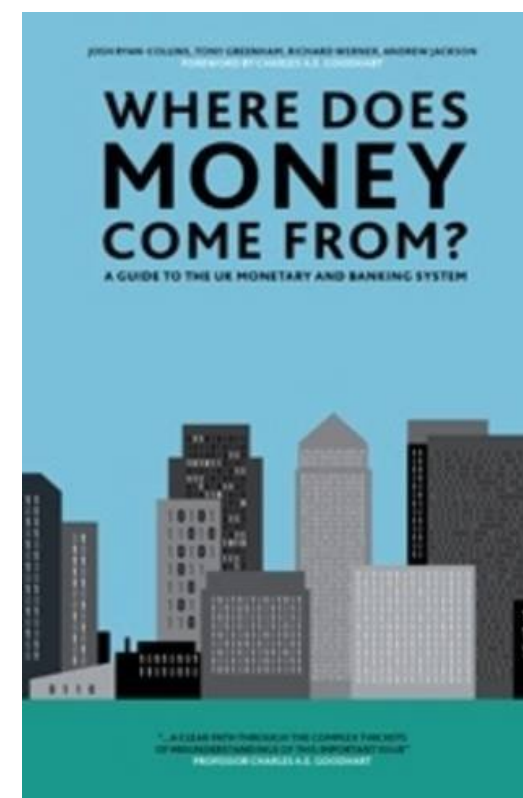
Further Reading:



M. E. Sharpe, 2003



Palgrave Macmillan, 2005



New Economics Foundation, 2012