

Dollar, Euro or Yuan: The Future of the Global Financial System

Barry Eichengreen

Economics 191

September 2012

There is widespread dissatisfaction with our monetary/currency system

- There are worries about our fiat-money regime as an engine of price and financial instability.
- There are worries about our system of dirty-floating exchange rates as a source of imbalances and volatility.
- There are worries about the adequacy of international liquidity in our dollar-centered international monetary and financial system.
- There are worries about perverse cross-border spillovers of national monetary policies (the “currency warfare” problem).

- In this presentation I use the long sweep of history to provide some context for these worries and a perspective on the future.

How, then, have monetary systems evolved in the long run?

- Owen provided you one perspective on this last time, focusing on the exchange rate system.
 - And I will come back to this.
- But an alternative focus is to distinguish central bank practice and monetary regimes.
 - Here I would distinguish four epochs:

“Long Victorian Era” from 1870 to 1933

- Under the gold standard, when many modern central banks first came into existence, they adhered to rules for exchange rate stability.
- The unifying concept was the “real bills” doctrine. Lending against real bills ensured exchange rate and price stability. Not discounting speculative “finance bills” was seen as preventing central bank credit from generating asset bubbles and busts, which were the main threat to stability.
 - In fact, the record of price stability was at best mixed (we will return to this).
 - And monetary policy under the real bills doctrine was dangerously procyclical.
 - Things didn’t turn out too happily. Crises were recurrent, culminating in the Great Depression.



Reaction : The Period of Government Control (1933-71)

- Central banks were subordinated to governments (until 1951 in the United States and even later elsewhere).
- In addition to limits on central bank independence, limits were placed on competition in finance and on international capital flows.
- Exchange rate commitments continued to limit monetary discretion, but (owing to the prevalence of controls) to a lesser extent than before.



Post-1973: Rise of Inflation Targeting

- As memories of the 1930s faded, markets were gradually liberalized.
- As a result, pegged exchange rates became more difficult to maintain.
- Without an exchange rate peg to anchor policy, many countries experienced inflation problems.
- This led to the quest for alternatives.
- This was found in a regime with 4 features:
 - Inflation targeting (with low inflation as the central bank's key mandate).
 - Each boat (each national inflation targeter) on its own bottom.
 - Central bank independence to enable policy makers to pursue that mandate.
 - Transparency as a mechanism for managing expectations and providing accountability.



And now that inflation targeting is dead, or at least gravely wounded?

- “Everyone” now understands that an exclusive focus on low and stable inflation is not enough.
- Indeed, price and output stability may only encourage the risk taking that undermines financial stability (think “Great Moderation”).
- “Tinbergen separation” (assigning monetary policy to price stability and regulatory policies to financial stability) may not work due to shortage of effective regulatory instruments (and agency problems).
- Cleaning up afterwards may be very costly (central banks may have to lean against bubbles before the fact, contra Greenspan).
- And cross-border spillovers make each-boat-on-its-own bottom problematic.

This implies an ever-expanding mandate for central banks

- Before the crisis, there was a trend toward creating independent regulatory entities and relieving central banks of regulatory responsibility.
- But the crisis showed that coordination and agency issues are rife (viz. Northern Rock).
- The trend now is in the other direction (viz. the Bank of England).
- We similarly see the ECB acknowledging that it is more than an “inflation nutter” or a monetary rule and that it has responsibilities for financial stability.
- Central banks’ responsibilities have also extended into the international domain (as with Fed & ECB swaps).

But this broadened mandate is problematic

- It is more difficult to verify that a central bank's actions are consistent with its mandate (now that this mandate is multi-dimensional).
- Central banks are seen as intruding into untraditional areas (auto bailouts, purchases of corporate bonds and mortgage-backed securities, loans to foreign financial institutions) that are more politically sensitive than conventional monetary policy.
- This in turn makes independence more problematic.
- From this point of view, it is no coincidence that Fed independence has recently been challenged by members of Congress, or that German and other politicians have made critical comments about the ECB. Nor is it a coincidence that the Republican Platform contains a passage proposing to "audit" the Fed.

At the same time, returning to a narrow mandate is not an option

- History has taught us that central banks must act as lenders of last resort in crises, which means that they must act as ex ante regulators (both to acquire the necessary information and to limit moral hazard).
- The absence of other policy instruments (fiscal policy is out of commission in both the US and Europe) means that they have to QE, Twist, SMP, LTRO and OMT when needed.
- Macro stabilization is important, and central banks are often (as currently) the only adults in the room.
- Finally, the existence of spillovers means that central banks must engage in policy coordination.

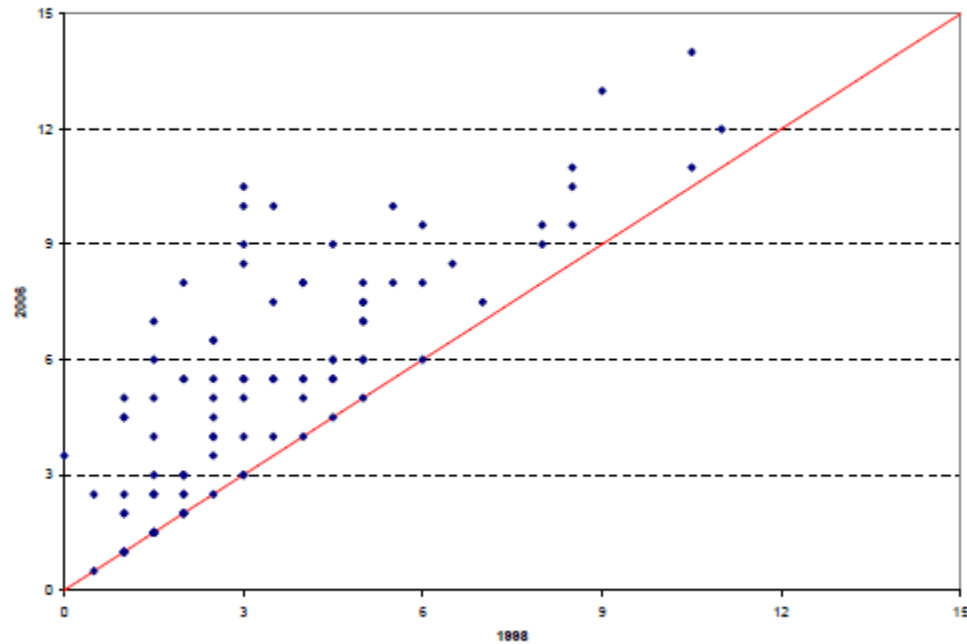
But even independent central banks need to be accountable

- Independence requires accountability in democratic societies.
- Central banks are seeking to become more accountable in the court of public opinion by becoming more transparent.
- Fed initiatives include:
 - Publishing minutes of FOMC meetings.
 - Publishing transcripts with suitable delay.
 - FOMC members and Reserve Bank presidents make speeches explaining themselves.
 - Now the Fed provides members' forecasts.

Here we have an example of a research paper question

- What has been happening to central bank transparency?
- What country characteristics explain which central banks have been becoming more independent?
- And does transparency matter for economic outcomes – i.e. for inflation, growth, volatility?

Figure 1. Comparison of Transparency in 1998 and 2006



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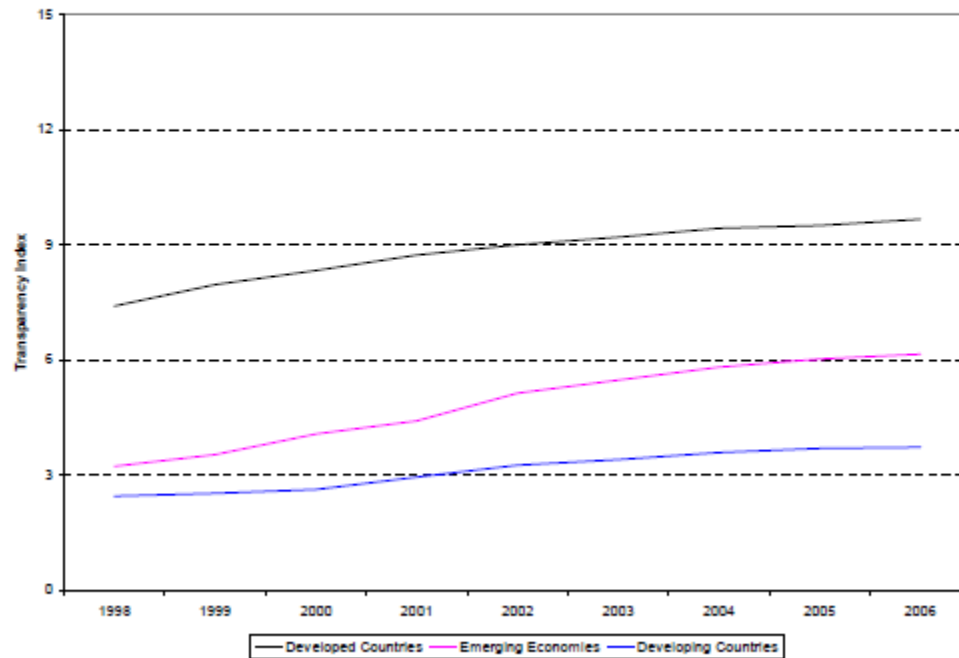
CENTRAL BANK TRANSPARENCY:
CAUSES, CONSEQUENCES AND UPDATES

Nergiz Dincer
Barry Eichengreen

Working Paper 14791
<http://www.nber.org/papers/w14791>

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Figure 2. Trends in Transparency by Level of Economic Development: Weighted Averages



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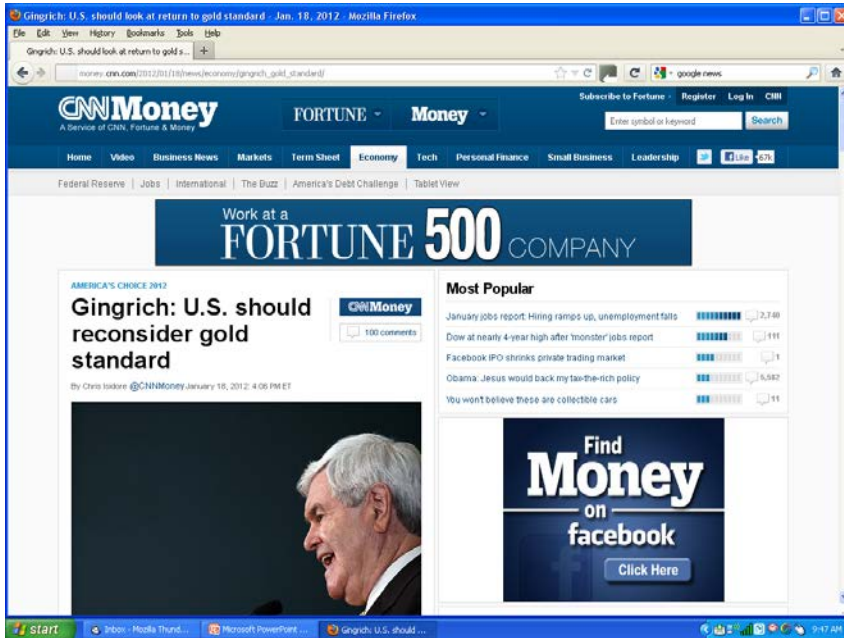
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But aren't all these interventions just storing up problems for the future?

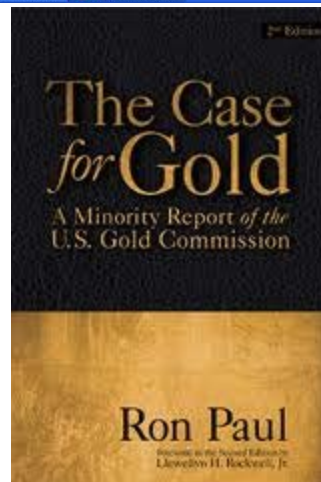
- Risks include inflation, a disorderly bond market correction, European banks loading up on risky sovereign debt, stock markets getting ahead of themselves, more bubbles, currency warfare problems.
- Perhaps, but not doing anything to support economic activity would create even greater risks.
- To be sure, first best would be not to have to rely on central banks at every turn.
- But in the absence of other adult behavior, there is no alternative.

Or is there?



- Ron Paul
- Newt Gingrich
- Herman Cain
- The Republic Party platform

– What do they have in common? Answer: widespread suspicion of and dissatisfaction with government/Fed intervention.

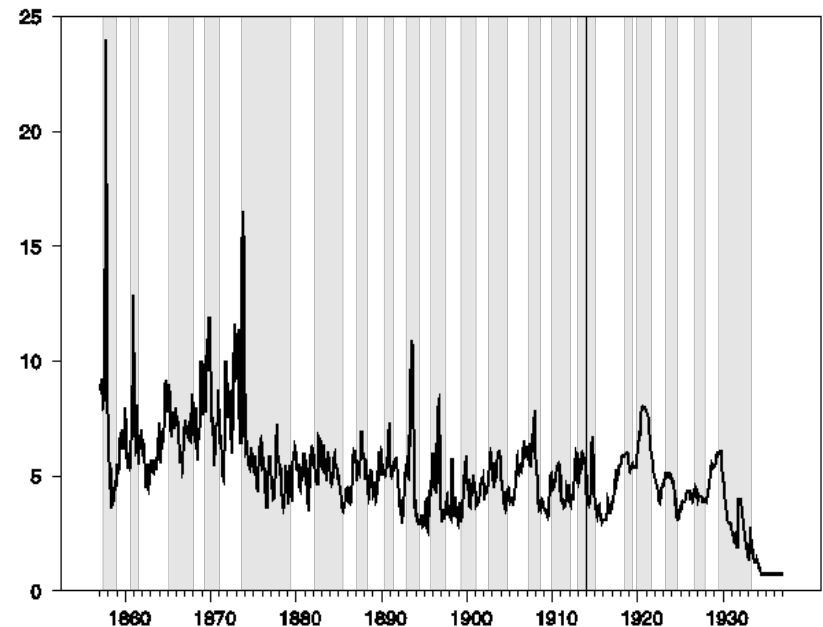


What is a gold standard?

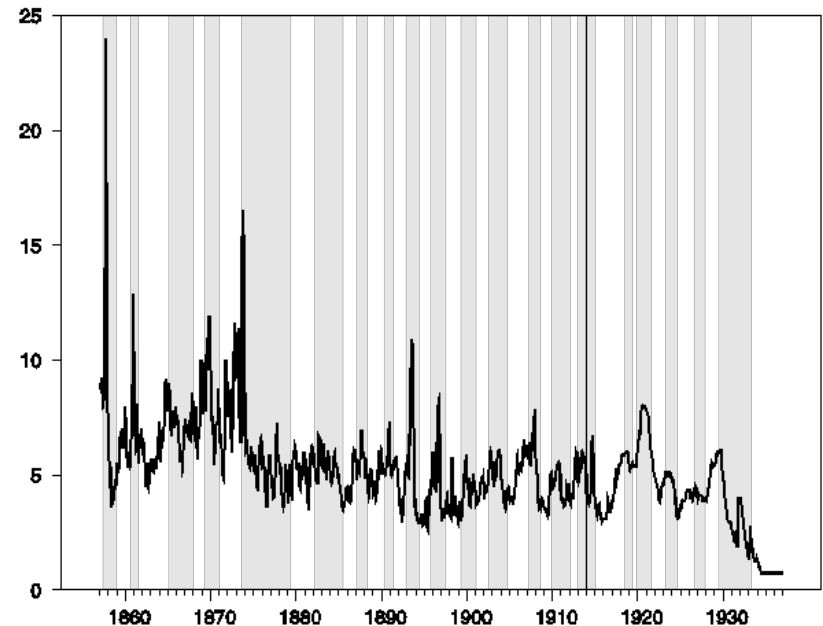
- Composed of three elements:
 - Price of gold is fixed by law.
 - Central bank stands ready to buy and sell gold at that fixed price.
 - This is the only way that money is injected into circulation.
 - The idea is that this rule restrains the temptation to manage the money supply. Since gold supplies are stable, money supplies are stable, and prices are stable, or so it is argued.

But this view reflects a rarified view of how the gold standard worked

- The gold standard was not, in fact, associated with financial stability.
 - Here are short-term commercial paper rates in NYC before and after the creation of the Fed, marked by the vertical line.
 - You can see how volatile rates were.



- In addition, the gold standard was not exactly associated with economic stability.
 - The shaded areas here denoting NBER-dated recessions.
 - You can see how frequent recessions were.
 - Volatility was greater before 1929 than after 1945, by my colleague Christina Romer's calculations.



And remember the Wizard of Oz (with William McKinley as the Wizard)



Then there are certain “practicalities”

- Global foreign exchange reserves are \$10 trillion
- Central banks hold \$1 trillion in gold, while private investors, industrial users, owners of jewelry hold roughly \$4 trillion worth, at current prices.
- For central banks to replace the entirety or even a majority of their foreign exchange reserves would imply *much* higher gold prices (\$10,000 an ounce by some estimates).
- Technically feasible. But desirable? What would happen to prices of other commodities, starting with silver?
- And if the Fed sets the price of gold too high?
- And if it sets it too low?

The implication is that our current fiat money system is the least worst alternative

- Recall Winston Churchill on democracy...



And currencies?

- To be sure, there are plenty of worries about the dollar, and questions about its future.
- But, importantly, the dollar isn't the only currency that is challenged.
- To understand what the preceding implies for currencies, it will be important to view the prospects in comparative perspective.

Some theory

- Old view: network externalities
 - It pays to do what everyone else is doing.
 - Once a standard is widely adopted, it becomes locked in.
 - First-mover advantage is key.
 - Increasing returns are so strong that only one global currency can exist at a point in time.
 - The dollar's dominance for the last 50 years is evidence of this.
 - The old view suggests that dollar dominance will continue.
- New view: open systems
 - Interchangeability costs are not that high.
 - Increasing returns are not that strong.
 - First-mover advantage can be overcome relatively quickly.
 - Multiple international currencies can coexist.
 - The new view suggests that the dollar will have rivals sooner rather than later.

- Research paper question: how can we test the validity of the new view?
- How can we determine which view is correct?

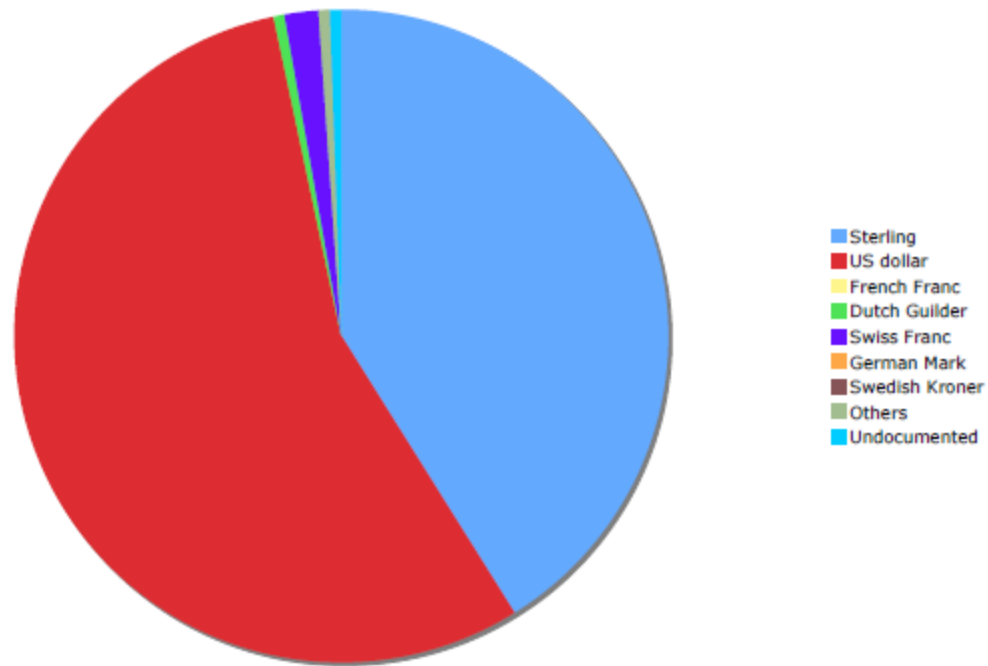
- Research paper question: how can we test the validity of the new view?
- How can we determine which view is correct?
 - Answer: we can look at earlier periods in history. We can ask whether there have been multiple international currencies. We can ask how long it took for first-mover advantage to be overcome.
 - Thus, we can use evidence from the past to think about prospects for the future.

Evidence

- World War I and interwar period as a natural experiment.
- The US overtook Britain as a trading nation during the war. Britain suffered serious financial reversals.
- Yet it is said that the pound sterling hung on as the leading international and reserve currency for another quarter of a century.
 - Would seem to provide strong support for the old view.
 - But what does the evidence show?

Evidence on central bank reserves

Figure 2. Aggregate Foreign currency holdings in 1929: A Snapshot (16 countries)



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THE RISE AND FALL OF THE DOLLAR, OR WHEN DID THE DOLLAR REPLACE
STERLING AS THE LEADING INTERNATIONAL CURRENCY?

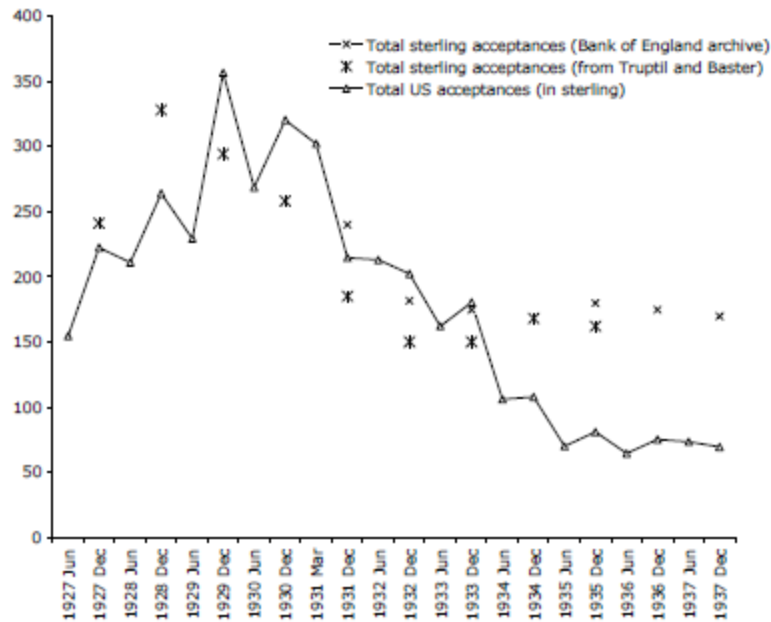
Barry Eichengreen
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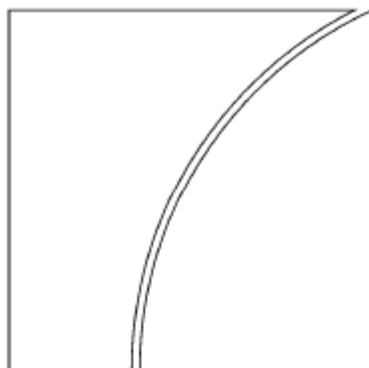
Evidence on currency denomination of trade credits

Figure 5
Dollar and sterling acceptances 1927–37
In millions of pounds sterling





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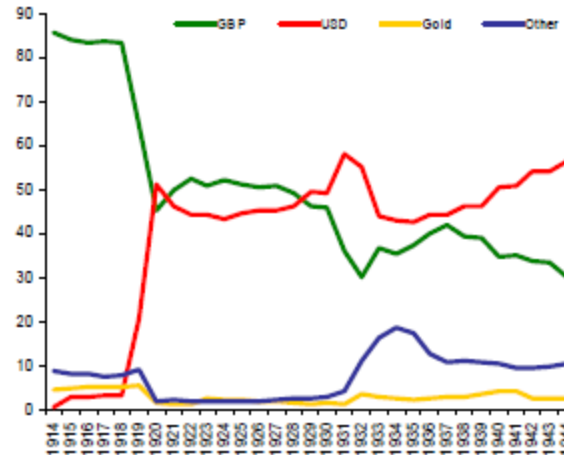
by Barry Eichengreen and Marc Flandreau

Monetary and Economic Department

November 2010

Evidence on currency denomination of international bonds

Figure 5b: Global foreign public debt (excl. Commonwealth countries) – Selected currency shares
(As a % of total; at current exchange rates)





EUROPEAN CENTRAL BANK
EUROSYSTEM



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NO 1433 / MAY 2012

WHEN DID THE DOLLAR OVERTAKE STERLING AS THE LEADING INTERNATIONAL CURRENCY?

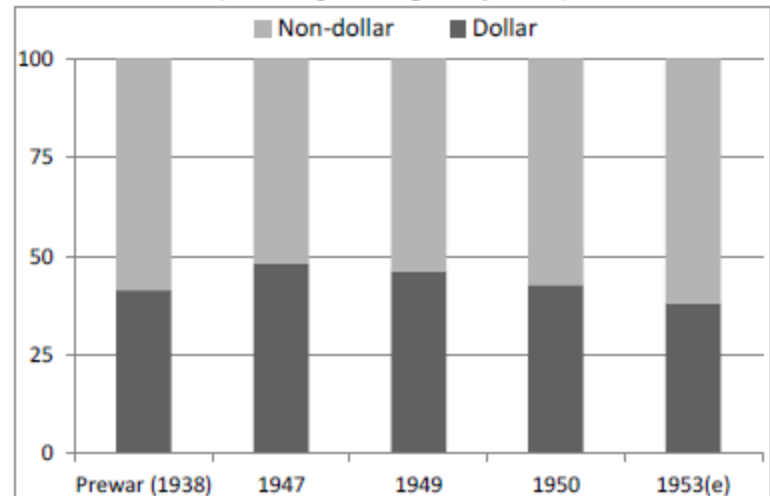
EVIDENCE FROM THE BOND MARKETS

by Livia Chitu, Barry Eichengreen
and Arnaud Mehl

And currency denomination of oil imports

- Here we have only limited amounts of information (to my knowledge).
- But what we have is again consistent with the “new view.”

Figure 1a: Currency denomination of total European oil imports
(%, oil imports in quantity terms)



- The evidence suggests, then, that multiple international currencies can coexist.
- It suggests that new ones can gain international market share relatively quickly.
- This is what we call a new research finding.

The striking thing, at the moment, is that they haven't (at least yet)

- The dollar is involved in fully 85% of foreign exchange transactions worldwide.
- It still accounts for fully 60% of foreign exchange reserves.
- Its use in invoicing exports far exceeds other countries' trade with the United States.
- It is the currency of denomination of fully 50% of all international debt securities.
- It is the dominant funding currency for international banks: of all cross-border liabilities of non-U.S. banks denominated in currencies other than that of the home country, fully 2/3 are in dollars.

Pundits have of course been predicting the demise of this situation for years



- They have been doing so on five grounds.

First, because network effects are weaker

- Making the advantages of incumbency less now than in the past.
- Once upon a time it may have perfect sense to use dollars because everyone else used dollars.
 - You priced your exports in dollars because everyone else priced their exports in dollars.
 - Doing otherwise made it difficult for customers to compare prices and for aspiring exporters to break into markets.
- There was room for only one “standard,” and that standard was the dollar, giving the greenback a first-mover advantage.
 - But does this argument still hold water?
 - The analogy with operating systems for consumer electronics suggests not.



Ceci n'est pas un smartphone

Second, because the US is no longer so dominant economically

- Making the simple convenience of using dollars less.
 - Using dollars made sense after WWII, when the US accounted for half of the Free World's industrial production and trade.
 - It makes considerably less sense today.

Third, because the US no longer possesses a financial monopoly

- The US today is no longer the only country with deep and liquid markets open to international investors.
 - Things were different as late as the early 1990s, at which point Europe finally removed its residual capital controls.
 - But no longer.

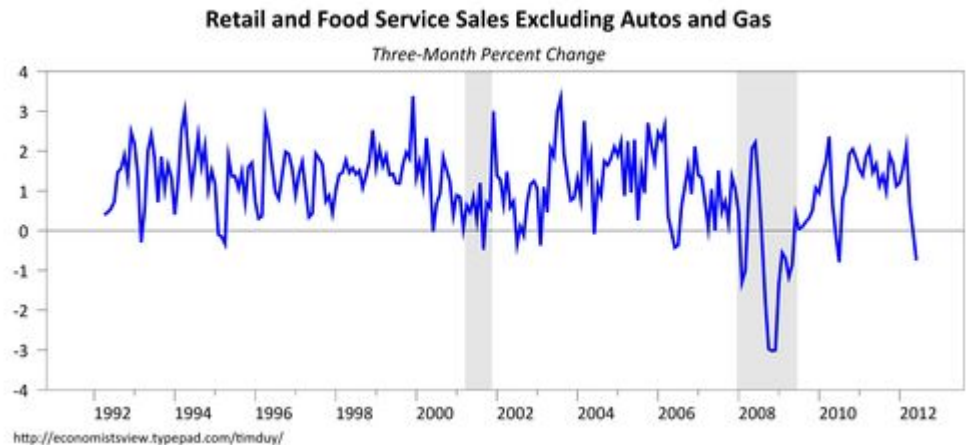
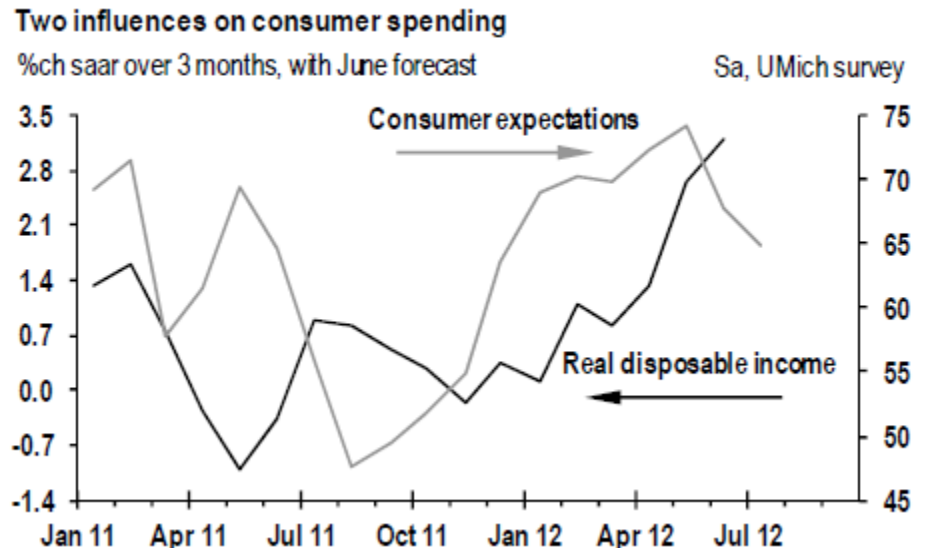
Fourth, because U.S. fiscal capacity is less

- The world economy needs a supply of safe assets to be held as reserves by central banks and other investors.
 - As emphasized last month by the IMF (see right).
- For many years, these have taken the form of US treasury bonds.
 - Single largest financial market in the world.
 - Standardized.
 - Unsurpassed liquidity, backstopped by the Fed.
 - Backed by the “full faith and credit of the US government.” (I will have more to say about this...)
- But as the world economy expands more rapidly than the United States, the U.S. Treasury’s capacity to backstop an adequate supply of safe assets is cast into doubt.
 - As the IMF noted in this report.

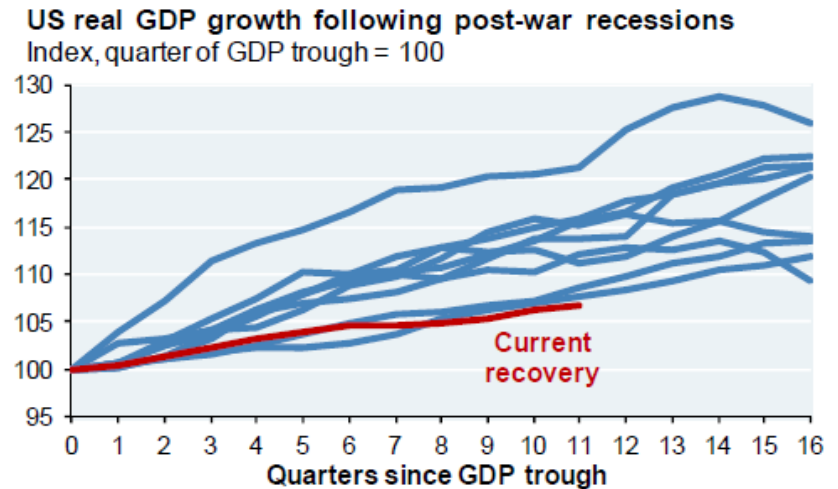


Fifth, because the US economy faces significant challenges

- In terms of the immediate growth outlook:
 - Inventories have been rebuilt.
 - Export growth is decelerating
 - Housing “recovery” is limp.
 - Fed is tentative (that may change).
 - Household indebtedness is still high.
 - Consumer confidence is weakening, in what is very much a consumption-drive economy.

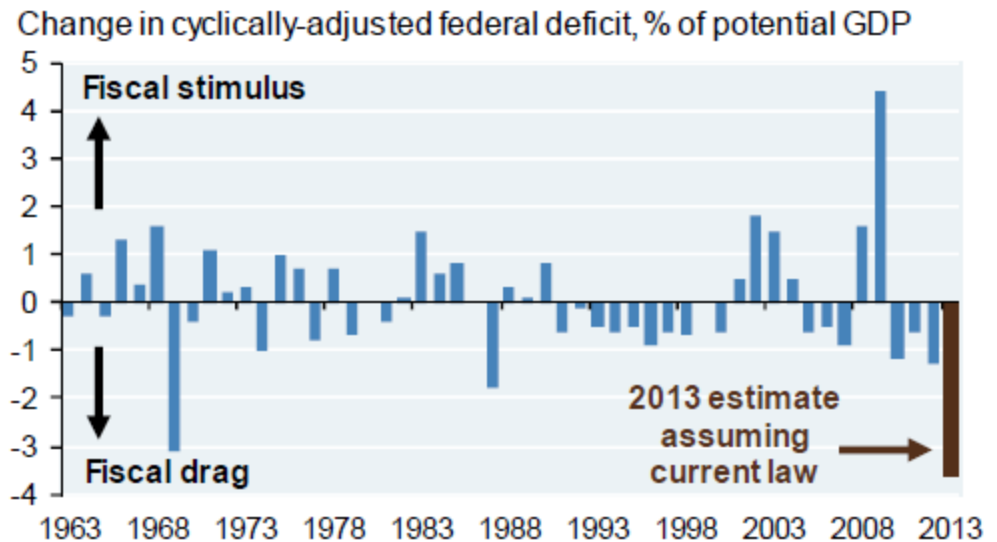


- All this makes for a weak recovery, as we now know.
- The question is whether it is about to get even weaker.



Probably so, as fiscal drag gives way to fiscal cliff

- Already spending by all levels of government fell at an annual rate of 3% in Q1, dragging down GDP growth from 2.7% to 2.2%.
 - And the states continue to cut.
- At the end of the year, the Bush tax cuts expire and the sequester is put in motion.
 - President Obama has proposed extending the cuts except for the top 2%.
 - The Republicans will entertain no exceptions.
 - One possibility is that a reelected President Obama will let everything expire and force the Republicans, to avert disaster, to agree to his variant. Dangerous brinkmanship....

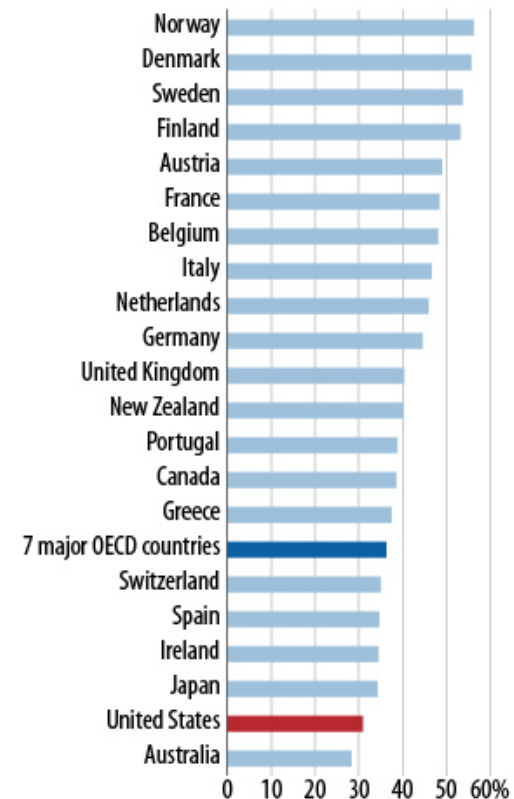


This emphasis on fiscal drag is not to deny that the US faces medium term fiscal challenges

- Unfortunately, there is no political consensus on how to meet them, and no willingness to compromise.
- A durable solution to the budget problem will require not just expenditure restraint but also “revenue enhancement” and bending the health-care cost curve.
 - Everyone in this room presumably understands the point.
 - The question is whether US politicians understand it.

The United States Is a Low-Tax Country

Total General Government Receipts As a Share of GDP, 2009

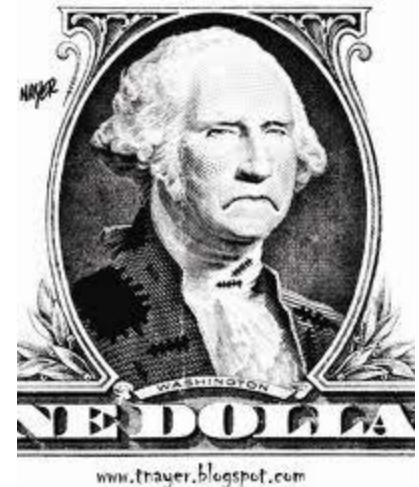


Source: Organisation for Economic Co-operation and Development

Center on Budget and Policy Priorities | cbpp.org

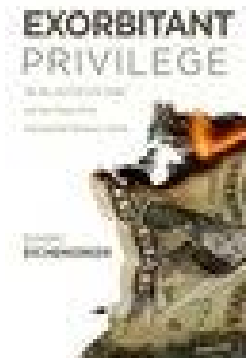
All this said, and despite its problems, the dollar remains the only true global currency

- But the point, that this cannot remain the case forever, still stands.
- The fact that the US cannot pump out safe assets on the requisite scale makes change inevitable.
- There will have to be alternatives.
- But what alternatives? And when?



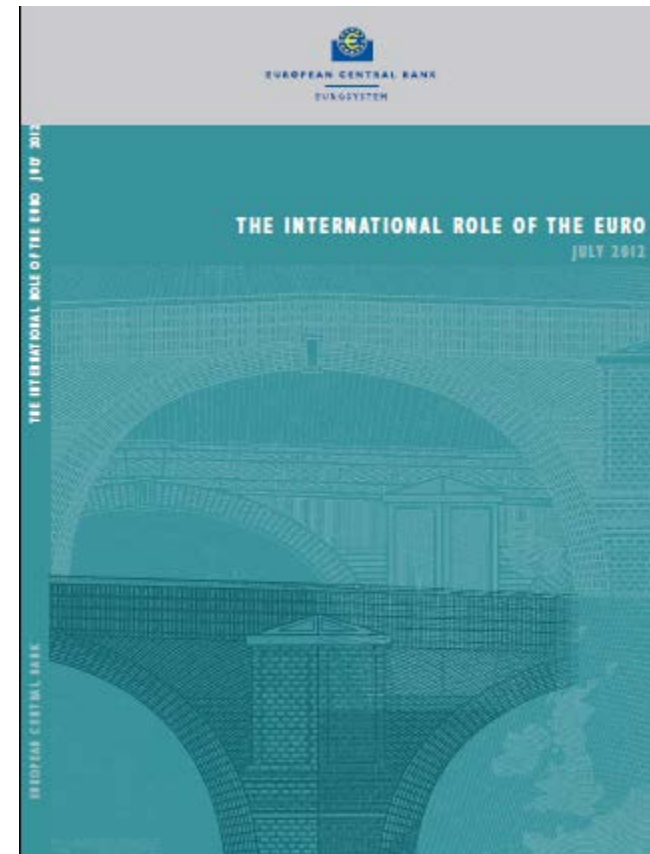
This brings me to the euro

- In my book, I looked 10 years out, and suggested that the euro and yuan will both be significant rivals to the dollar in 2020.
- It is here, of course, where I experience “writer’s remorse.”
 - Can you say “euro crisis”?



In June the ECB reported that the euro's reserve currency role shows signs of eroding

- The euro's share in world currency reserves declined for the first time in recent years in 2011 (from 26 to 25% of identified reserves).
- Additional anecdotal evidence like the decision of the Swedish central bank to reduce the share of euro denominated securities from 50% to 37% points in the same direction.



So what caused Europe's crisis?

- There is a conventional narrative
 - Southern Europeans are spendthrift
 - Europe has a crisis because Greeks (and Spaniards, Portuguese and Italians) have been living beyond their means.
- And there is an accurate narrative
 - Southern Europeans are spendthrift
 - But they are not all spendthrift in the same way
 - And someone lent them all that money

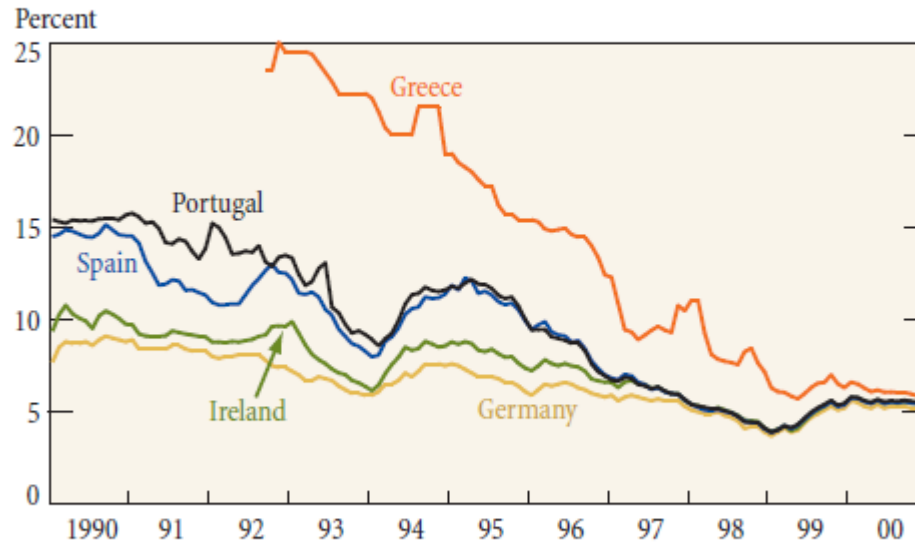


A major effect of monetary union was lower borrowing costs in the South

Giving Greece “real money” brought its interest rates down to German levels.
Someone evidently believed in the “convergence fairy.”

Chart 3

Ten-Year Government Bond Yields, 1990-2000



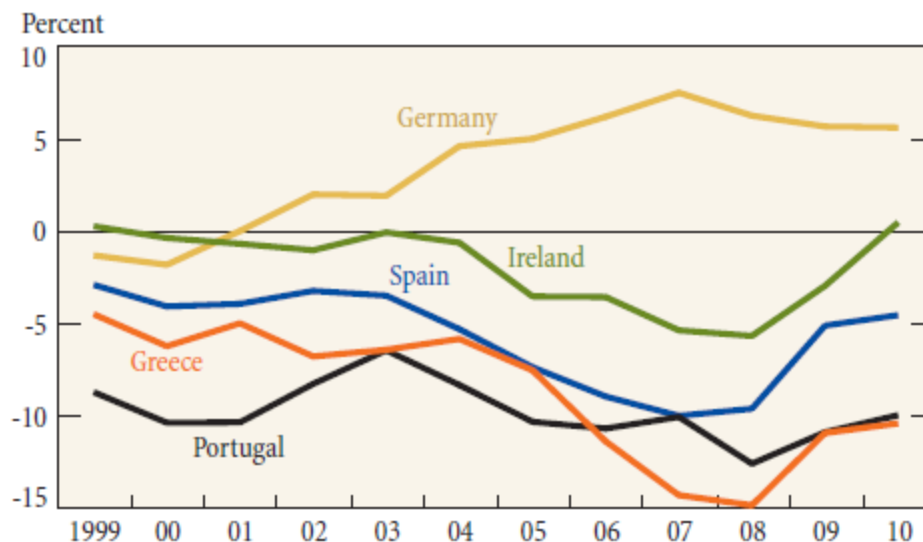
Sources: National central banks; *Financial Times*; Haver Analytics.

Those lower borrowing costs encouraged a big fiesta

But notice also Germany – it takes two to tango....
Or, to repeat, someone lent them all that money

Chart 2

Saving Balances as a Share of GDP



Sources: Eurostat; Haver Analytics.

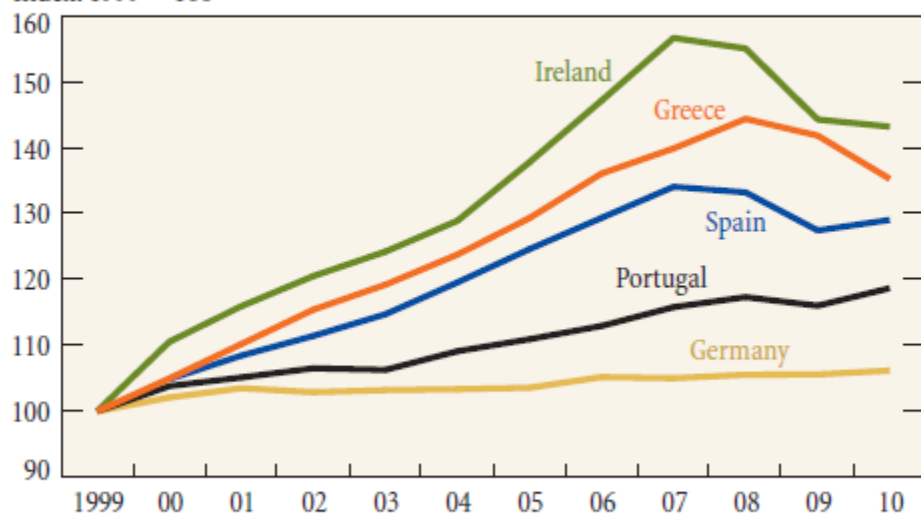
Note: Saving balances are measured by the current account.

It wasn't all, or even mainly, government borrowing – it was also the private sector

Chart 5

Private Real Consumption Spending

Index: 1999 = 100



Sources: Eurostat; Haver Analytics.

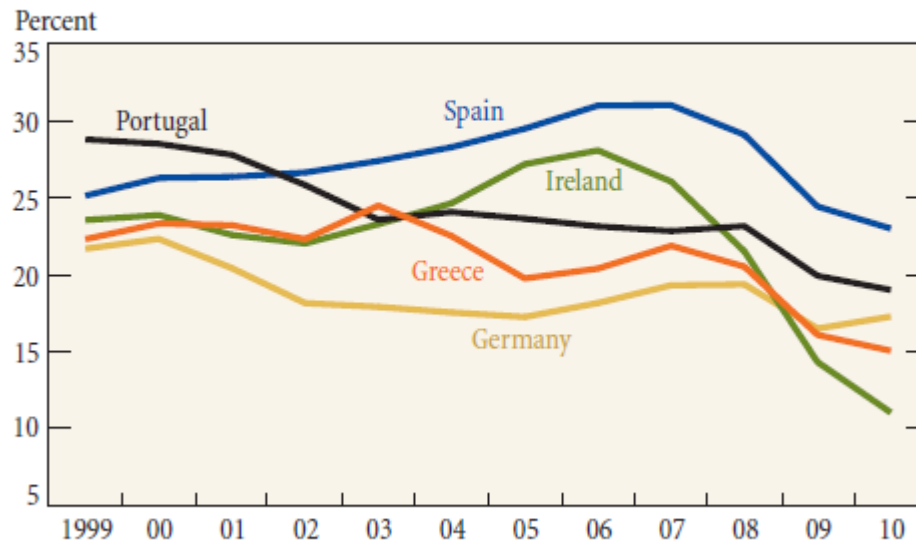
And there was also lots of investment

although with hindsight we know that it was not all productive investment

Can you say “housing boom?”

Chart 6

Investment Spending as a Share of GDP



Sources: Eurostat; Haver Analytics.

Firms could pass through higher costs, given the boom in spending on their products

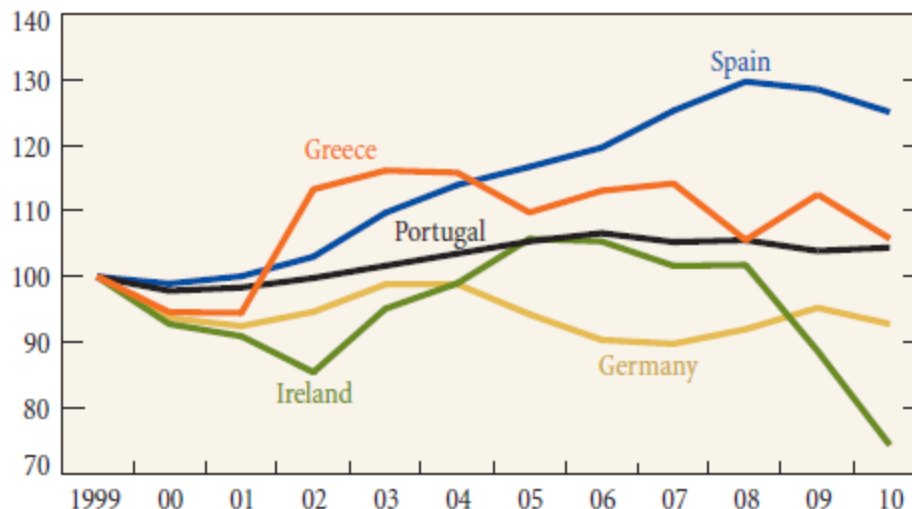
Meanwhile, someone else's labor costs were going down.

(Note also that the Irish case doesn't exactly fit...)

Chart 7

Relative Unit Labor Costs in Manufacturing

Index: 1999 = 100



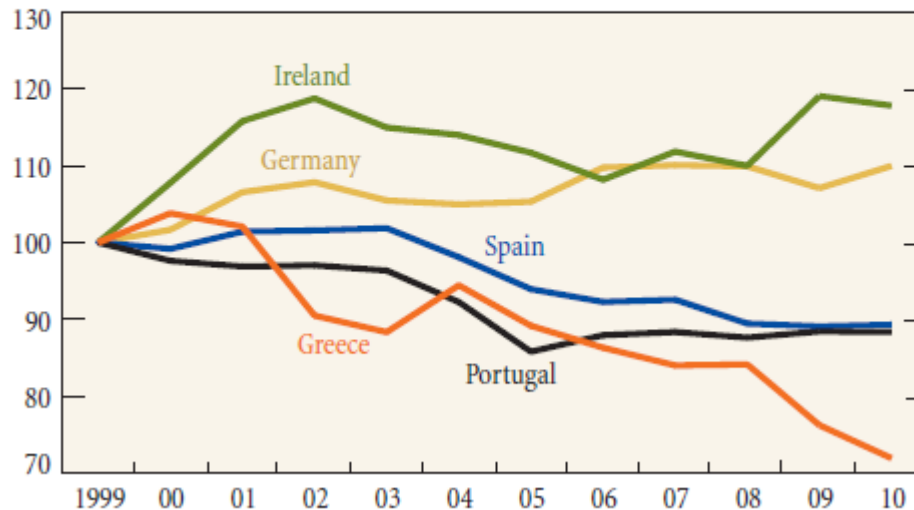
The divergence in labor costs made for a divergence in competitiveness

That showed up in export performance.
(And, again, that the Irish case doesn't exactly fit...)

Chart 8

Export Market Share

Index: 1999 = 100

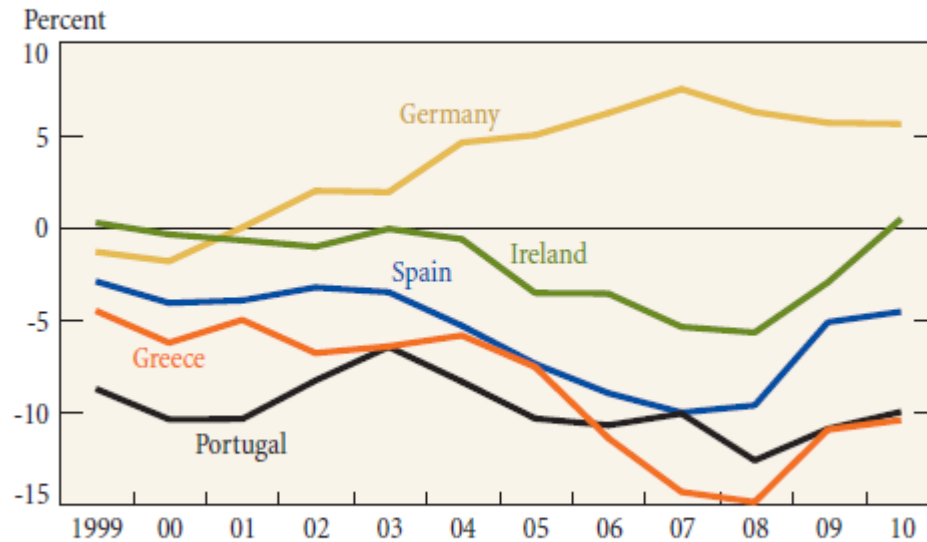


Again, making it tempting to blame those spendthrift Southern Europeans

But – again – someone lent them all that money...

Chart 2

Saving Balances as a Share of GDP



Sources: Eurostat; Haver Analytics.

Note: Saving balances are measured by the current account.

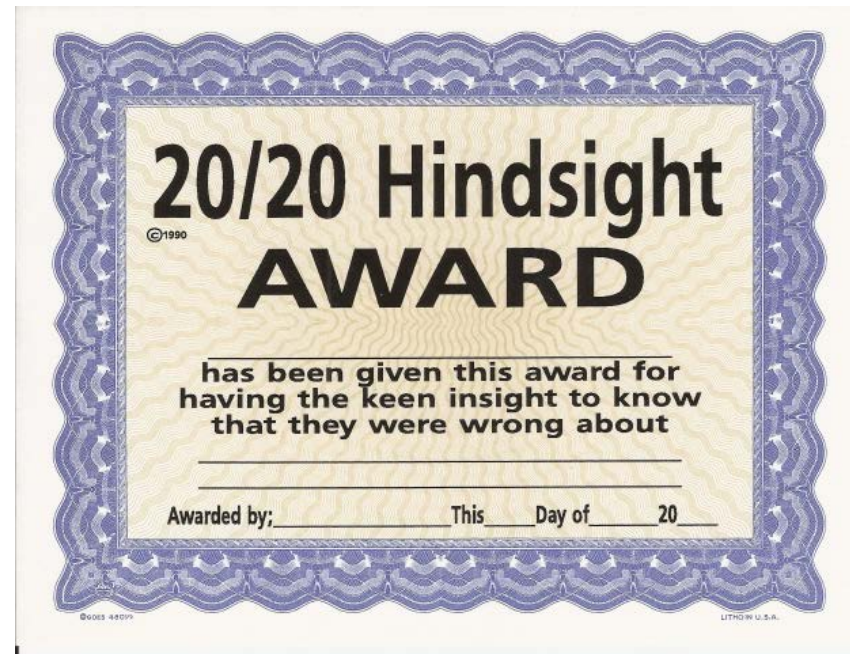
Bottom line

- It takes two to tango.
- And it is not helpful when Northern Europeans view the crisis as a morality play (in which they have no part).



A more accurate story would go like this

- The false belief that monetary union meant the elimination of credit risk and guaranteed fast growth in the euro-area periphery encouraged reckless lending.
- The same belief in the euro-area periphery led to reckless borrowing.
- The result was overleveraged banks at the center and a loss of competitiveness at the periphery.
- Then Europe had the bad luck of importing a financial crisis from the US in 2008, which widened deficits, heightened debt burdens, damaged growth, and left no time to complete the process of fiscal and political integration.



- All of a sudden in early 2010 the markets woke up to the fact that all was not well.
- Suddenly they began to fear that European governments would have trouble repaying what they'd borrowed.
- All of a sudden, as a result, Southern European countries have to pay exorbitant interest rates in order to borrow.



So why this has given rise to a big crisis in Europe

- Answer: because of the operation of two vicious spirals
 - Sovereign-debt-banking system spiral
 - Sovereign-debt-contracting economy spiral



How sovereign debt and banking problems feed on one another

- Problems with government finances mean lower bond prices.
- But banks hold many of the bonds.
- Hence Europe's banks are in trouble.
- And everyone knows that, in the end, government will have to pay to bail out the banks.
- And that only worsens the government finances and further depresses bond prices in a vicious spiral.



How sovereign debt and growth problems feed on one another

- Governments have to cut spending and raise taxes to reassure the markets.
- But less spending by both government and households means less demand and less growth.
- Revenues fall further, requiring more spending cuts.
- And then growth only falls further, in a vicious spiral.
 - Insofar as this gives rise to popular unrest and political extremism, the situation may be politically unsustainable as well as financially unsustainable.



Research paper question:

- Let's say you were interested in whether economic hard times were fostering support for extremist anti-system parties in Europe.
- How would you turn this interest into a research paper?



Right-Wing Political Extremism in the Great Depression
Alan de Bromhead, Barry Eichengreen, and Kevin H. O'Rourke
NBER Working Paper No. 17871
February 2012
JEL No. N0,N14

ABSTRACT

We examine the impact of the Great Depression on the share of votes for right-wing anti-system parties in elections in the 1920s and 1930s. We confirm the existence of a link between political extremism and economic hard times as captured by growth or contraction of the economy. What mattered was not simply growth at the time of the election but cumulative growth performance. But the effect of the Depression on support for right-wing anti-system parties was not equally powerful under all economic, political and social circumstances. It was greatest in countries with relatively short histories of democracy, with existing extremist parties, and with electoral systems that created low hurdles to parliamentary representation. Above all, it was greatest where depressed economic conditions were allowed to persist.

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So for short-run stabilization, Europe needs to break these two vicious spirals

- How's it doing?



Task #1 is bank recapitalization

- Bank recapitalization is the single most important thing Europe can do in the short run.
- Recapitalization requires real money, more than just €100 b. for the Spanish banking system.
- And if these are loans to the sovereign, they will only convert the banking problem into a sovereign debt problem and solve nothing.

On June 29th we thought there was a plan

- The ECB and the European Commission will present a proposal on the banking union to the European Council (as it did last Tuesday) so that the Council can reach a decision by year-end.
- Once an effective central supervisory authority has been established, the ESM will be able to directly recapitalize financial institutions, and that direct recapitalization will not require a guarantee from the sovereign.
- At that point, loans made previously to the Spanish government will become loans to the banks.

Unfortunately, leaders have been backtracking ever since

- Germany insists on protections first.
- It worries about having to pay the bill for banking problems elsewhere in the eurozone.
- Not clear that the new supervisor (the ECB) has the capacity to supervise so many banks.
- Small banks are resisting being brought under its umbrella.
- All this is to say that establishing a common supervisor will take time under the best circumstances.
- And the markets won't wait.

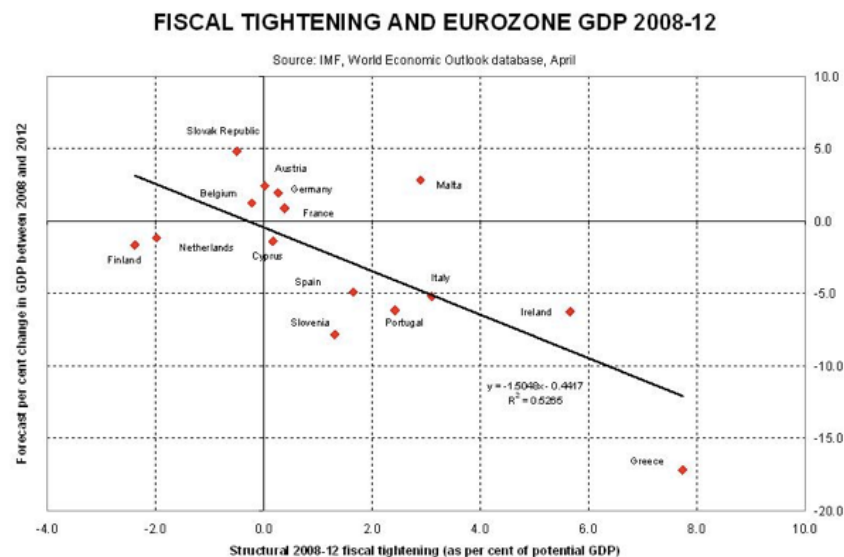


Task #2: Getting growth going

- Here too, all economists with a grain of common sense (which of course doesn't mean all economists) agree on what should be done.
 - Northern European countries with fiscal space should use it, at a minimum implementing balanced-budget increases in spending.
 - Southern European countries should wed more short-term fiscal support with credible medium-term fiscal consolidation.
 - An additional €120 b. of off-budget EIB spending (as recently agreed) won't hurt, but it is a drop in the proverbial bucket.
 - The ECB, meanwhile, should do more to support economic growth.
 - And keeping Greece in the eurozone (thereby limiting contagion) requires a Marshall Plan.

And how's that fiscal consolidation working for you?

- Here is the percentage point decline in the cyclically-adjusted budget deficit from 2008 to 2012, together with the percentage change in GDP from 2008 to 2012.
 - With cyclical effects removed, we can think of this as the impact of policy on growth.
- So much, then, for the myth of “expansionary fiscal consolidation.”



Task #3: Dealing with the debt overhang

- Here there are only three options: debt mutualization and the ECB capping secondary market prices.
- All are politically fraught.
- Debt restructuring has an obvious logic (since the debts of the PIIGs are unsustainable given current ECB policy).
 - The problem is that it would also bankrupt the banks, which would have to be recapitalized, so the amount of relief it provides would be limited.
- Of the remaining 2 options, I would argue that debt mutualization is the more politically problematic.
- The fate of the euro zone will therefore turn on what the ECB decides.

For the euro to survive, the ECB will have to:

- Cap borrowing costs.
 - For countries that enter into an ESM program, as announced on September 6th.
- Engage in the European equivalent of QE and buy government bonds eurozone wide. Overshoot its inflation target for awhile.
 - Most definitively not yet announced.
- If Greece goes, foam the runway.
 - Relax its collateral requirements further in order to provide firewall for Spain and Italy.

Will any of this happen?

- Only with German agreement. Which requires:
 - A united front from Hollande, Rajoy and Monti on what needs to be done.
 - Leadership in return from Merkel.
- Will it happen?
 - The ECB's OMT decision two weeks ago was a step in the right direction.
 - But the reaction in Germany does not make one hopeful).

And if Europe sticks to Plan A?

- Governments that have pursued austerity and structural reform, promising that growth would miraculously resume, will lose political support.
- The question, obviously, will then be whether their successors stay the course or unilaterally turn in a populist direction, abandoning the euro.
- My own work (above) suggests that economic hard times do much to foster support for right-wing anti-system parties.

We know how it ends

- With no light at the end of the tunnel, Greek voters opt for radical anti-austerity parties.
- The new Greek government defaults on the program and on its obligations to its official creditors.
- The ECB stops providing credit to the Bank of Greece, which can therefore no longer provide euro credit to the Greek banks.
- A bank holiday is declared.
- The Greek government starts paying its bills with IOUs.
- Greece is then de facto out of the monetary union.
- And everyone doubles up their bets against Portugal, Spain and Italy.

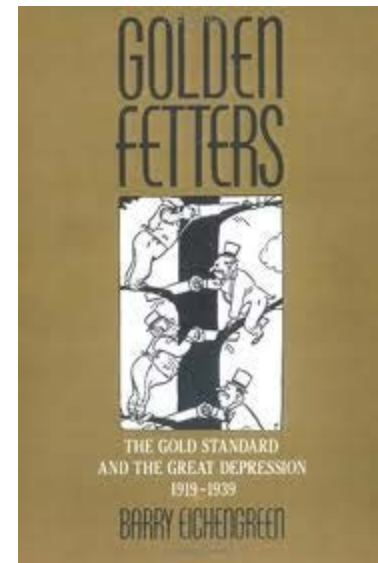
That said, the current situation is different from the 1930s

- Unemployment may be as high as in the 1930s (gulp!), but social safety nets are more extensive.
- Governments and societies will be reluctant to jeopardize the European project (there was no comparable political project in the 1930s).
- Governments and societies will be reluctant to jeopardize the single market (cross-border trade and lending had already collapsed in the 1930s).



And exiting the eurozone will be more expensive than exiting the gold standard

- I “wrote the book” on exiting the gold standard, and am here to remind you that the two are not the same.
- Under the gold standard, countries retained their own currencies. All of their bank debt and most of their sovereign debt was denominated in that unit.
 - Which, still, is not to say it can’t happen....



And longer term institutional reform?

- Over time, the euro-zone will have to strengthen its fiscal rules and assume joint responsibility for outstanding debts (just like all other monetary unions in history).
- This so-called “two pack” was discussed by the European Commission, European Council and European Parliament on July 20th.
- While the ultimate destination is fiscal union, Mrs. Merkel is right; fiscal union is a multi-year project.
- Will Europe get from here to there?
 - All one can say is “stay tuned.”



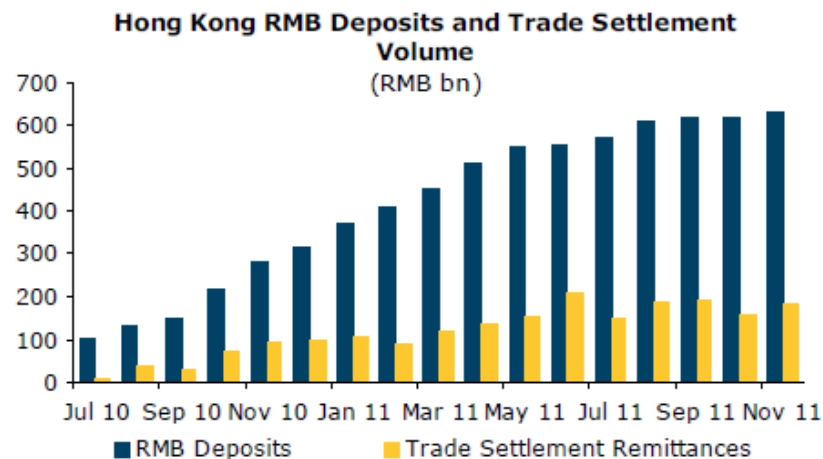
Turning from Europe to China, the story is somewhat happier

- Chinese policy makers are making good progress at Internationalizing the yuan.
- This is their strategy for freeing China from dependence on the dollar.
- They see the ability of US banks and firms to do cross border business in their own currency as a competitive advantage.
- That international business is done in dollars requires them to accumulate the currency for intervention purposes – in turn exposing them to losses.
- They see Asia moving toward a single currency – that single currency being the yuan.



They have a phased strategy for accomplishing this

- Encourage importers and exporters to use the currency to settle merchandise transactions.
 - China's recent agreement with Japan is notable in this regard.
- As receipts then accumulate in Hong Kong, encourage banks and firms to fund their FDI projects using it. (Let London do the same.)
- From there, allow the yuan to be used in an expanding range of financial transactions (investment in bonds on the interbank market, now on the stock market).
- Finally, encourage central banks to accumulate it as reserves.
 - Again, the December agreement with Japan was part of that process.



But there are challenges

- China's financial markets are small.
 - Bond market capitalization is only a tenth that of United States.
- Those markets are illiquid.
 - Bonds are held to maturity by banks and credit cooperatives.
- Bank deposits will be unattractive until the banks are fully commercialized.
 - End of directed lending?
- Liberalization that leads to capital outflows might be abandoned or reversed.
 - Already there are tales of “dollar shortage” indicative of capital outflows
- Doubts remain about security of foreign investments.
 - How secure would South Korea's reserves in China be in the event of a dispute with North Korea?
 - And then there's that pesky “democracy problem.”

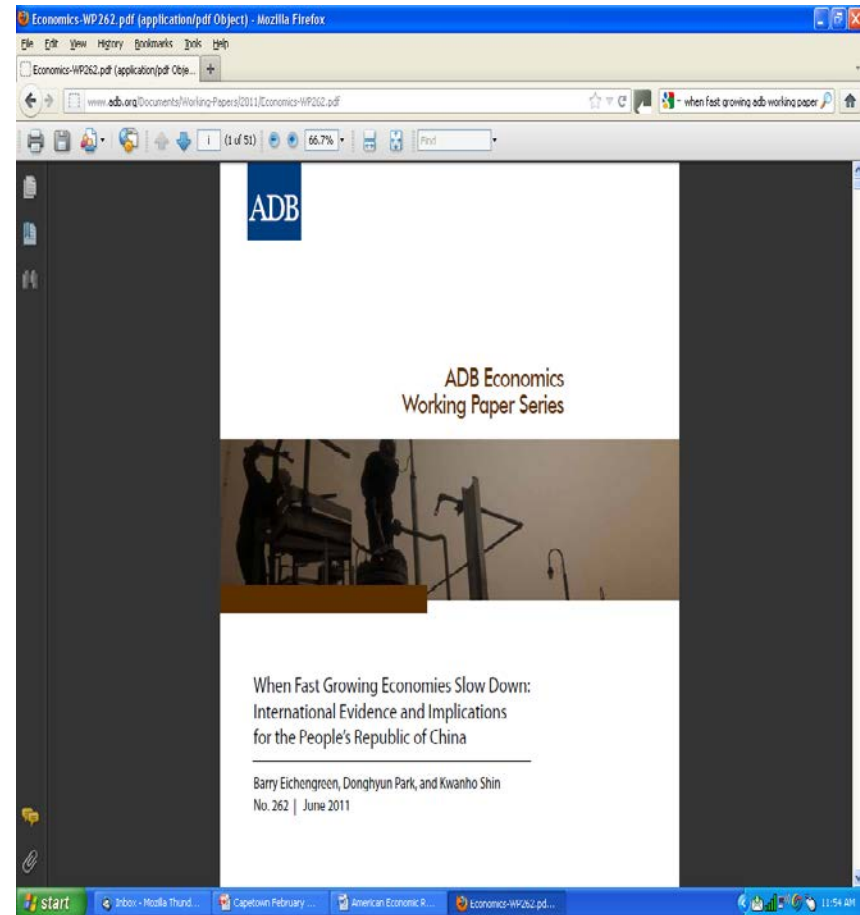
And slower growth in China won't speed the progress of yuan internationalization

- One thing we know is that no economy grows at double digit rates forever.
- The question is when and how quickly Chinese growth will slow.

Research paper topic:

- Let's say you were interested in whether and when Chinese growth is likely to slow significantly.
- How would you turn this interest into a research question?
- How would you investigate it?

- I have sought to do just this in a paper with two Korean collaborators.



What do we do?

- We look at international experience since 1950.
- We identify an episode as a growth slowdown if the rate of GDP growth satisfies three conditions:
 - Growth is at least 3.5 per cent over the initial 7 year period.
 - Income per capita is at least \$10,000 US (2005 PPP prices).
 - The growth slowdown between successive 7 year periods is at least 2 percentage points.
 - All of these thresholds are somewhat arbitrary?
 - What should one do about this? Sensitivity analysis.
 - We do some (described on next slide).

- Note that our data end in 2007, which accounts for the absence of potential recent slowdowns some people may have in mind.
- Recall that we need a 7 year window.
- Note that we do extensive sensitivity analysis.
 - Alter the 7 year window.
 - Lower the \$10,000 per capita income threshold designed to exclude chronic slow-growth poor economies.
 - Treat oil exporters separately.

- Table 1 in the paper lists all the slowdowns identified by this approach.
- In some cases the methodology identifies a string of consecutive years as growth slowdowns.
 - For Greece, for example, all years between 1969 and 1978 are identified as a slowdown.
- One way of dealing with this is to employ a Chow test for structural breaks to select only one year out of the consecutive years identified.
 - For Greece we would then select 1973 as the year of growth slowdown because the Chow test is most significant for that year.

Table 2.9. Episodes of Slowdown by Decade and Magnitude of Deceleration

Decade	Country	Year	Growth before, (t-7 through t)	Growth after (t through t+7)	Difference in growth	Per capita GDP at t	
1960s	Denmark	1964	5.0%	2.9%	-2.1%	13,800	
	New Zealand	1965	4.1%	0.9%	-3.2%	14,073	
	United States	1968	4.0%	1.5%	-2.5%	17,073	
1970s	Denmark	1970	3.9%	1.5%	-2.4%	16,584	
	Finland	1970	4.7%	2.3%	-2.4%	11,981	
	Netherlands	1970	4.5%	2.0%	-2.4%	15,205	
	Israel	1972	5.5%	1.2%	-4.3%	13,215	
	Japan	1972	8.8%	2.8%	-6.0%	12,556	
	Austria	1973	4.8%	2.7%	-2.0%	14,806	
	Belgium	1973	4.7%	2.5%	-2.2%	14,371	
	Greece	1973	7.4%	1.4%	-6.0%	10,747	
	Netherlands	1973	3.6%	1.6%	-2.1%	16,294	
	Spain	1974	5.5%	0.2%	-5.2%	11,703	
	Finland	1974	5.3%	1.7%	-3.5%	14,308	
	France	1974	4.1%	1.8%	-2.4%	15,487	
	Italy	1974	4.3%	2.3%	-2.1%	13,494	
	Belgium	1976	3.9%	1.3%	-2.6%	15,472	
	Greece	1976	4.8%	0.1%	-4.7%	10,997	
	Austria	1977	3.9%	1.6%	-2.4%	16,788	
	Hong Kong	1978	6.5%	4.4%	-2.1%	11,761	
	Ireland	1978	3.7%	0.8%	-2.9%	10,292	
	1980s	Singapore	1980	5.6%	2.8%	-2.8%	13,032
		Hong Kong	1982	7.4%	5.4%	-2.0%	14,519
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	Taiwan	1992	7.3%	5.1%	-2.2%	12,743	
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	Israel	1996	3.6%	0.3%	-3.4%	20,341	

- With this break point in hand, we next assign the value of 1 to the three years centered on the year of the growth slowdown, i.e. the dummy equals 1 for and zero otherwise.
- The comparison group consists of the countries that did not experience a growth slowdown in that same year.

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Some more comments on the list

- This list passes the smell test: many of the cases are well known.
- In the majority of the countries experiencing slowdowns, this event is centered at a single point in time and a particular level of per capita income.
- Oil exporters are unusual in that they are able to maintain high rates until higher per capita incomes are reached than is customary for other countries.

Table 2.9. Episodes of Slowdown by Decade and Magnitude of Deceleration

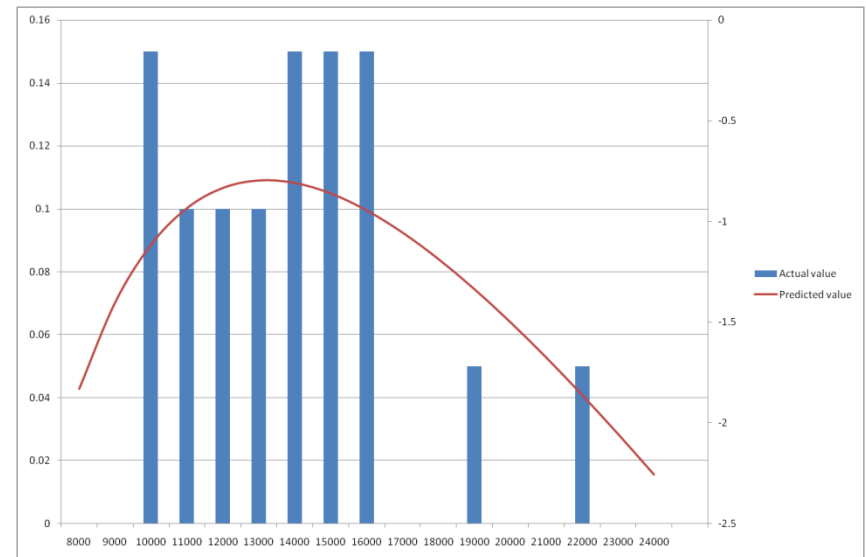
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- So we focus on average values for all non-oil-exporting countries. On average, high growth came to an end at a per capita GDP of \$16,740, in 2005 constant international prices.
 - The median is \$15,058.
- At that point the growth rate slowed from 5.6 to 2.1 per cent per annum.
 - For purposes of comparison, note that China’s per capita GDP, in constant 2007 international prices, was \$8,511 as of 2007, India’s \$3.826, Brazil’s \$9,645. These are the latest compatible figures provided by Penn World Tables.

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- But around the average of \$16,740 there is considerable variation, as shown at right.
- Economic structure and policy variables presumably have their own separate effects.
- There are some anomalies: UK (second slowdown), Japan (second slowdown), Norway (natural gas), Hong Kong and Singapore (city states seem to be immune from early slowdowns, for some reason).



Growth accounting results

- Question: what grows more slowly around times of slowdowns: capital, labor or productivity?
- Answer: 85 per cent of the slowdown in the rate of growth of output is explained by the slowdown in the rate of TFP growth.
- Evidently, slowdowns coincide with the point in the growth process where it is no longer possible to boost productivity by shifting additional workers from agriculture to industry and where the gains from importing foreign technology diminish.
 - The real exchange rate may also be relevant for this (ability to move into the production of more technologically sophisticated goods) – more on this in a moment.

So success at fostering innovation will matter a lot

- But centrally planned systems are not particularly good at this.
- Innovation can't be directed from above.
- You need to give individuals more economic decision making freedom.
- You need to let them communicate their ideas using, inter alia, social media.
- But will they then want more political freedom?



Why do countries slow down?

- **Probit regressions on a panel of nonoverlapping five-year averages suggest:**
 - Because they approach the technological frontier defined by the per capita income of the lead country.
 - Because dependency ratios rise, causing their labor forces to grow more slowly.
 - Because easy growth by shifting labor from low productivity agriculture to high productivity manufacturing comes to an end.
 - A higher manufacturing share “helps” early on but not as the manufacturing share grows.

Table 2.10. Predicting Growth Slowdown (Multiple episodes allowed for one country)

	Deceleration				
Per capita GDP	78.062** [25.759]	101.867** [38.648]	142.396** [39.291]	146.528** [41.121]	
Per capita GDP ²	-4.113** [1.349]	-3.343* [1.415]	-7.440** [2.046]	-7.651** [2.142]	
Ratio	17.998* [7.223]	-109.535 [91.881]			
Ratio ²	-14.872** [5.708]	36.905 [34.966]			
Dependency			-60.008* [23.514]	-62.432* [25.750]	
Dependency ²			46.988* [21.363]	50.648* [23.186]	
Fertility			0.962* [0.483]	0.465 [0.544]	
Manufacturing employment share				85.107* [39.976]	
Manufacturing employment share ²				-192.426* [83.380]	
Pseudo R-square	0.21	0.20	0.24	0.28	0.33
Observations	265				
Country	20				

Sensitivity analysis

- We can consider other specifications:
 - Add structural variables (like trade openness)
 - Add policy variables (policy outputs like inflation, inflation variability, consumption and investment shares of GDP, real exchange rate undervaluation)
 - What you could do? (Can you think of other variables that we've ignored?)

- We can use a selection of our estimated equations together with 2007 values of the independent variables to estimate the likelihood of a Chinese slowdown.
- Using the regressions where the key independent variables are per capita income, the pre-slowdown rate of growth, demographic structure and the composition of spending puts the probability in the next five years at 77 and 73 per cent.
 - These are non-negligible odds.

When we add structural and policy variables

- Slowdowns are more likely in countries with
 - Increasingly unfavorable demography.
 - Sounds like China.
 - Population aged 15-24 will *fall* by 21% over the next decade.
 - Very high investment rate.
 - Sounds like China.
 - Undervalued currency.
 - Sounds like China.

What lies behind the demography result?

- Higher share of the elderly in population means that you can't grow simply by increasing the share of the population working.
- Elderly require more public spending on social services (health care and the like).
- Savings rates will be lower, other things equal.
- Slower labor force growth will mean more upward pressure on wages.
 - All these factors will operate with a vengeance in China owing to its long-standing One Child Policy.

What explains investment result?

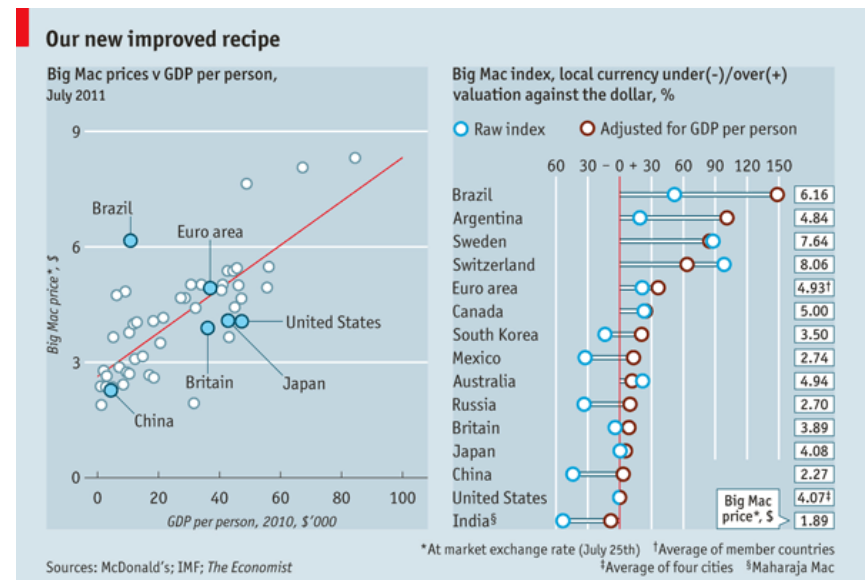
- Quite simply, no country can invest 50 per cent of its GDP, as China does currently, productively for an extended period.
- We have all heard the tales of ghost towns, idle airports, empty bullet trains, excess capacity in cement, aluminum, steel, auto parts.
- A high investment supports growth now but causes financial vulnerabilities to build up.
- It also creates the façade of prosperity, allowing the authorities to put off needed reforms.

What explains undervaluation result?

- A cheap (“undervalued”) currency is good for promoting the growth of unskilled labor-intensive manufacturing.
- But this same reliance on cheap labor weakens the pressure to move up the ladder into the production of more technologically sophisticated products.
- Eventually the pool of cheap rural labor is drained, and other even cheaper-labor countries come along.
- Hence undervaluation can boost growth for a time but becomes a liability as a country approaches Chinese levels of per capita income.

Note: how we measure undervaluation

- Like this, but using overall price index rather than just the price of a Big Mac.



Imagine that over the next 20 years :

- TFP growth rate remains stable at the current level: 3%.
 - This is a very respectable rate for any country
- Investment rate is 35 per cent rather than 45%.
 - Then the rate of growth of the capital stock will slow from 12% to 7%.
- A labor force that grows by 0.25% per year.
- A stock of human capital that continues to grow by 2% a year.
 - Add it all up, and growth then slows to 7 ½% per annum.

- But say that TFP growth also falls from 3 to 0-1 per cent, as is typical of previous slowdown cases.
- Then China's growth slows to just 4 ½ - 5 ½ %

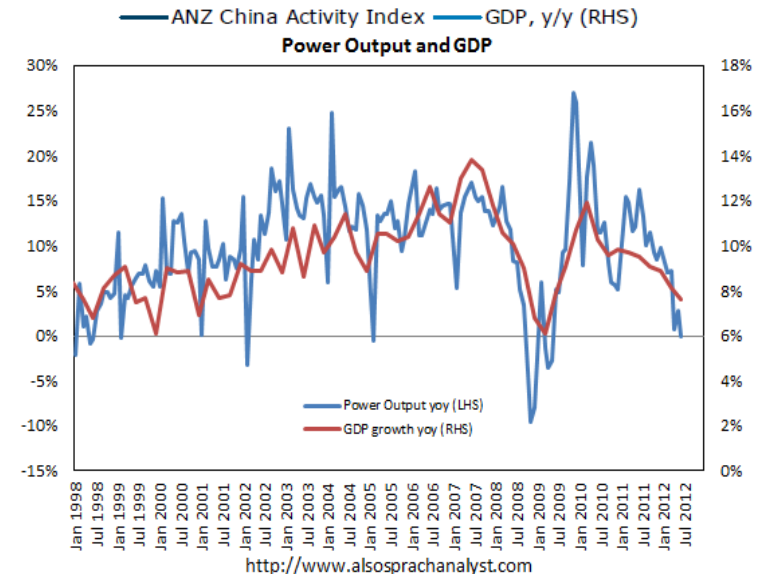
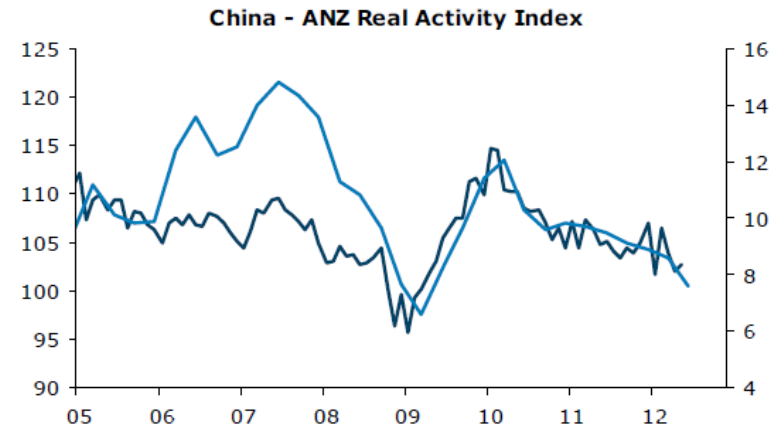
Alternative conclusions

- Conclusion 1: there are many reasons to be cautious about extrapolating international experience in the past to China in the present (“China is sui generis”).
- Conclusion 2: look out below.

Growth already appears to be slowing

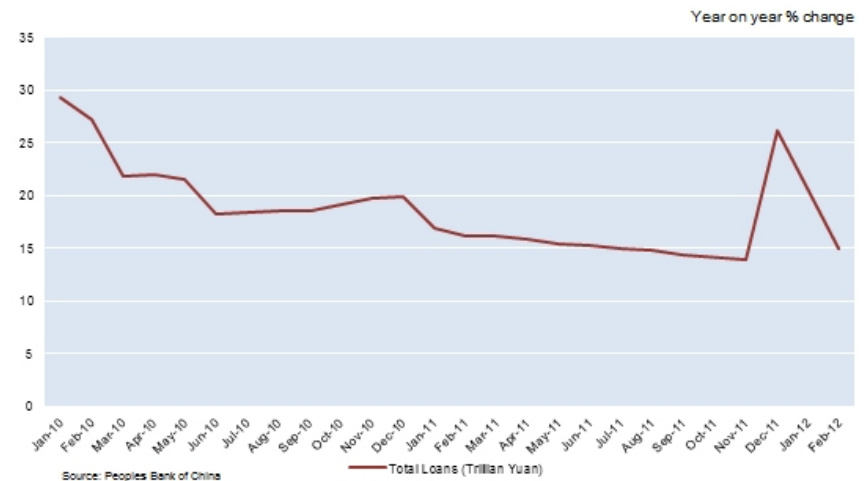
- We don't know how much of this is structural and how much is cyclical, however.
- And we don't know whether to believe the data.
- Official growth figures are at the top.
- Indeed, some informal indicators that skirt potential problems with the official number suggest that the situation is even less happy.

CHINA'S GDP GROWTH SLOWED TO A THREE YEAR LOW



Fortunately, the authorities have policy levers to pull

- They can encourage bank lending.
 - Bank loans continue to grow at a 15 per cent annual pace, as seen at right).
- They can ramp up infrastructure spending.
 - Just announced Yuan 1 Tr. of additional spending.
- They can halt appreciation of the exchange rate.
 - As they have.
- But so much then for rebalancing...



So how do I view the exchange rate picture overall?

- The dollar should be a strong performer for the next year or so.
 - Least unattractive contestant at the beauty pageant...
 - Global flight from risk will work in the dollar's favor.
- The euro will be weak.
 - The ECB will be catching up to the Fed.
- Strong yuan or weak yuan?
 - If the Chinese economy begins to slow significantly, a weak yuan will be part of the policy response.



But what if neither the euro nor the yuan steps up?

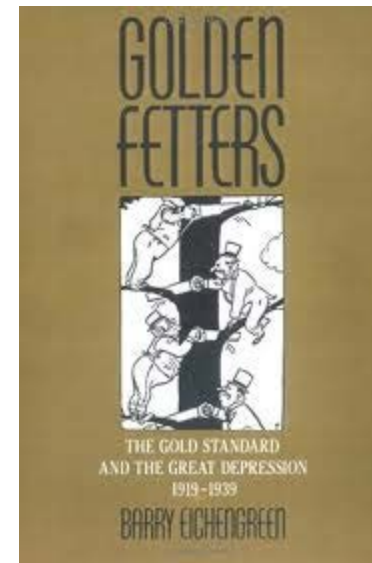
- The world will have no choice but to rely on dollars for international liquidity.
- But, eventually, the capacity of the United States to supply them will be cast into doubt.
- And then there is the worst of all worlds, which would be if investors lose confidence in the dollar before alternatives had time to emerge.

The world economy would be starved of liquidity

- What happens then?
 - Trade credit becomes harder to obtain.
 - Cross border lending and borrowing become more costly and difficult.
 - Central banks unable to find an attractive form in which to hold reserves tighten controls on cross-border transactions.
- In short, 21st century globalization would be placed at risk.

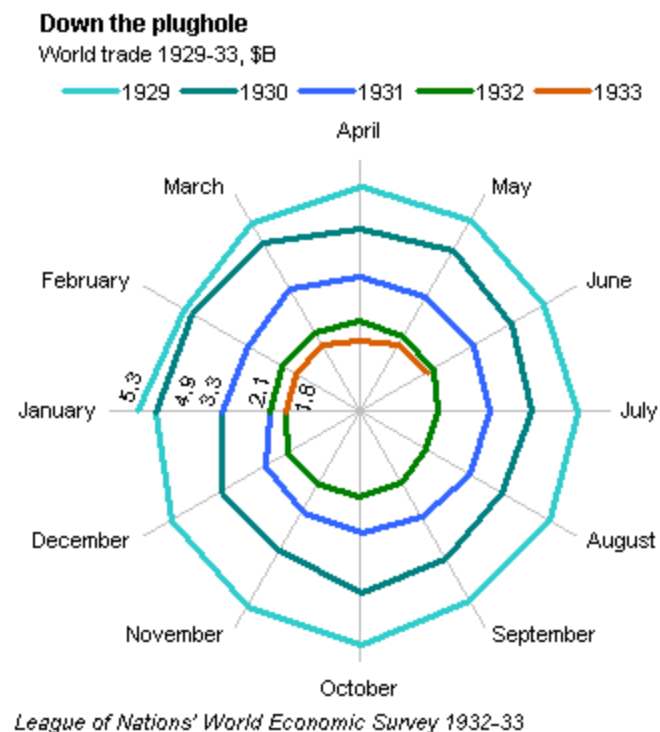
This is, in fact, what happened in the 1930s

- In the early 1930s, there were two international currencies: sterling and the dollar.
- In 1931 there was first a sterling crisis and then a dollar crisis.
- By the end of 1931 central banks had liquidated fully half of the foreign exchange reserves that they had held at the end of 1930.
- They all attempted to flee into gold.
- But there was only so much gold to go around. They raised interest rates in a desperate effort to attract it.



The result was a deflationary crisis

- International lending collapsed.
- International trade collapsed.
- The first era of globalization came to an abrupt end.
- And, of course, the deflation and financial distress that followed was made the Great Depression so great.



- We have to hope that this worst-case scenario is avoided...