Public debt tipping point studies

ignore how exchange rate changes may create a financial meltdown*

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Abstract
In studies concluding that public debt may hamper GDP growth, the debt tipping effects are estimated as if there were a single world currency. This means that such studies ignore the likely biggest cause of changes in growth rates, namely damage from exchange rate liquidity shocks because we do not live in the fairyland of a single world currency. The conclusions of these studies are accordingly invalid. They deflect attention from a prime danger, namely an exchange-rate-precipitated global meltdown – a danger of the repetition of events of 80 years ago.

These studies are misleading in other respects too. Their estimates of growth determinants conflate the differential growth effects of government expenditures with those of tax concessions and uncollected taxes as contributors to government debt. The conflation entices adherents to see all increases in government debt as arising from excessive expenditures, so that in the current Greek-euro crisis, Greece's real problem, namely tax evasion, is missed, and harmful policies of austerity and depreciation, are proposed that leave the real problem of tax evasion unaddressed.

Debt tipping point studies also fail to allow for the increase in wastefulness of private production. This is despite the fact that over the last 40 years, there have been private activities, including key segments of the financial and the pharmaceutical industries, whose expansion has damaged overall health and growth.

The upshot is misdirected policy analysis and advice. In a global downturn policy should instead be directed to adequate employment-generating fiscal stimulus, to extracting from the well-to-do adequate taxes, to averting further damage from exchange rate liquidity shock by creating a single world currency, and to ensuring that for profit activities in the pharmaceutical and financial industries are adequately regulated, and where this is infeasible, shut down and replaced with fiscally stimulated productive activities.

Key words: exchange rates, employment multipliers, private sector inefficiency, central bank cooperation, central bank conflict, public debt, tipping points, uncertainty, financial sector, Hitler, pharmaceutical sector, World War II, Korean War, fiscal stimulus
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Some economists, e.g. Burton Abrams (2011), argue that the US 2009 fiscal stimulus package may have reduced the country's GDP. They point to wastefulness in government activities and fear that any concomitant rise in public debt may have pushed the debt to GDP ratio above its “tipping point”, and into a region where extra government debt damages growth. Their view fuels Republican resistance to raising the US federal government debt level even when such a default would have extreme consequences.[1] The tipping point belief fuels the propensity of ratings agencies to downgrade the US and other countries on the basis of its government debt level being at such a tipping point.[2] Related beliefs underlie the Maastricht Treaty's limit on the government debt to GDP ratio for members of the euro, and contribute to Germany's reluctance to offer a substantial fiscal stimulus package to Portugal, Ireland Greece and Spain.

The government debt tipping point estimates stem from the analytical approach of influential economists who subjugate the understanding of reality to the confines of tractable algebraic models of maximising agents. The pertinence of such models to science and policy rests or falls on the appropriateness of the model assumptions. Modellers have an ethical duty to avoid shoddy thinking and to be frank enough about their assumptions. Models based on inappropriate assumptions are bad science, and can pervert decision-making. The global economy is already suffering from such bad science perverting decision-making. “Quants” (financial mathematicians) failed to be frank enough about some excessively optimistic assumptions underlying their models. The resultant false confidence in these models aided in exploding the derivatives market in the context of an altogether excessively leveraged financial sector and an absence of adequate regulation of derivatives.[3]

It is vital to avert a similar misuse of tipping point studies based on a failure to recognize that their underlying assumptions are inappropriate. The approach assumes away: 1) exchange rate movements, 2) most of the economic and employment ramifications of government debt, and 3) private sector waste. It is vital to avert a similar misuse of tipping point studies through shoddy thinking and a nonchalant failure amongst influential economists to alert policy makers to the inappropriate assumptions on which these studies are based . In assuming away these key matters, tipping point studies divert policymakers from risks of damage that exchange rate changes could wreak. The damage could be far more catastrophic than that which occurred in the aftermath of the disorderly collapse of Lehman Brothers on 15th September 2008.

Below Part 1 itemises the inappropriate conceptual framework and assumptions underlying tipping point studies. Part 2 identifies the misuse of the US war years in the most cited debt tipping point study, that of Reinhart and Rogoff (2010). Their study misses the actual

[1] See e.g. David Cowan (2011).

[2] See e.g. the 5th August 2011 US government's downgrade to AA+ by ratings agency McGraw-Hill Cos and the threat of a further downgrade purely on the basis of the debt tipping point presumption, Detrixe February 9, 2012.

[3] The false confidence arose because "quants" shifted from mathematically rigorous models when the entities and relations in them were uninterpreted algebraic formalisms. They shifted to having themselves employed in the academic and commercial financial sector without admitting and alerting others that once these algebraic formalisms receive financial sector denotations, the assumptions required understate the risks of applying the models, including the risks of generating a global meltdown. On this deceptive use of formal models and its contribution to the current global financial crisis, see for instance Humbolt University financial mathematician Hans Föllmer's 2009 careful explication in *Fokus*, David Colander et al (2009) and other ouput of the Dahlem Group's Economic Modeling project such as its 2009 "Mathematics, Methods, and Modern Economics".

direction of causation, from the demobilisation (withdrawal of military fiscal stimulus) reduced growth and higher debt. Part 2 reveals that the US only regained its pre 1930s employment level with the succession of fiscal stimuli from World War II and the sequel Korean War. Part 3 concerns the damage caused by exchange rate changes. It itemises the six principal false arguments economists invoke and it highlights the shoddy use of data that results in economists missing the extreme damage caused by big exchange rate changes. It illustrates the gulf between their conception of exchange rates changes as either benevolent or harmless with six decisive historical instances of the devastation caused by exchange rate movements. Part 4 summarises economists' blind eye to evidence, thereby highlighting a responsibility to start acknowledging the damage caused by exchange rate changes. Economists bear such responsibility since they entice their governments to maintain the distinct currencies introduced in the nationalistic fervour of national central banks, instituted in many countries in early 1914. Part 5 indicates the different class of tipping point estimates needed for understanding and sound policy. Part 6 examines one aspect of such estimates, namely the need to allow for private sector wastage in the 40-year bubbles of the finance and prescription drugs sectors. Part 7 traces the interwar years following the burst of a financial sector bubble, with nationalistic exchange rate depreciations wrecking global trade and capital flows. It traces how Hitler's bigger, earlier employment fiscal stimulus restored Germany's unemployment to its pre-depression level eight years earlier than did the US's belated armaments fiscal stimuli. Part 8 outlines two measures to avert a repetition of the tragedies of the 1930s and first half of the 1940s: 1) replace wasteful private sector bubble components with a socially desirable mix of government expenditures and taxes; and 2) institute a single world currency. Part 9 concludes.

1. The faulty conceptual framework

Debt tipping point fears stem from econometric estimates that are mis-specified because the underlying analytical approach is naively aggregative. Its inappropriate conceptual framework and assumptions miss the main causal chains impacting on growth.

1.1. The single currency assumption.

First and foremost, none of the tipping point studies includes as an explanatory variable the likely prime driver of reductions and reversals in economic growth, namely damage to growth caused by exchange rate shocks. The approach computes econometric coefficients as if governments and firms operated in a fantasy world in which there always had been and always will be a single world currency.

1.2. The single multiplier assumption for all components of debt

Tipping point estimates assume that there is no need to decompose aggregate debt to get meaningful econometric multiplier estimates, and no need to separate output from employment multipliers. This would only be true if every component in every stage of the cycle had the same multiplier.

But it is fundamental to decompose by the stage of the business cycle. Apart from easing bottlenecks, the stimulus multipliers must be zero at full capacity. But many sub-components of government expenditure have substantial multipliers when unemployment is considerable. Second it is essential to distinguish between a tax cut stimulus and a government expenditure

stimulus. Government expenditure multipliers typically have more stable and bigger expansionary effects than tax cuts. This is because tax cuts can be saved not spent. Indeed tax cuts may be primarily saved in situations like the present in which the overleveraged corporate and household sectors are deleveraging, Koo (2003, 2009, 2011). Third, the stimuli from different components of government expenditures vary dramatically over time and are known to have radically different multiplier effects rendering it basic to solid econometric estimation to decompose in this respect. Fourth, in economic depressions, unemployment can damage society and risk democracy. Thus, output multipliers are partially beside the point. What is key are employment multipliers. As has been uncomfortably salient since the DotCom bubble burst, output can grow with minimal employment growth, a "jobless recovery", that is output and employment multipliers can be very different.

In summary, the quantitative causal impacts of the different components of debt on output and employment are radically different. These radical differences moreover have been known for around forty years. Yet none of these four forms of decomposition occurs in tipping point studies such as those undertaken by Carmen Reinhart and Kenneth Rogoff (2010), Mehmet Canner, Thomas Grennes and Fritzi Koehler-Geib (2010), Manmohan Kumar and Jaejoon Woo (2010). To have these radically different multipliers collapsed, along with changes in interest rates, into a catch-all term, "government debt", is shoddy econometrics – ignoring differences discovered some forty years ago as regards effects on output. This leaves entirely unattended the vital policy issue of employment multipliers.

1.3. Private sector waste

A third inappropriate assumption in tipping point studies is a constant (zero) level of private sector waste. But private sector bubbles characterise some eras, and are largely absent in others. None of these tipping point studies measure the rising wastefulness of private production over the last 40 years. In developed countries, this wastage includes components of the financial and pharmaceutical industries that are not merely unproductive, but aggressively cancerous in their impact on health and economic well-being.

1.4. Overall

When the likely principal factor yielding big changes in growth is omitted, and when the industrial scale wastage of resources in cancerous bubble components of the private sector are ignored, tipping point inferences are unwarranted. Such inferences rather deflect economists from serious policy issues. One serious issue is the danger that a severe exchange rate liquidity shock would generate a financial meltdown, not merely a three-day liquidity freeze as occurred after Lehman Brothers collapsed on 15th September 2008. Another serious issue is what should be done to remove waste in the financial and pharmaceutical sectors.

2. War Data

In inferring a point beyond which more government debt reduces US growth, Reinhart and Rogoff (2010) deduce tipping point once the government debt to GDP ratio reaches 90%. However, their estimate is made over data from multiple countries. For only 2.3% of Reinhardt and Rogoff's US observations was the US government debt to GDP ratio above 90%, and as Randy Wray and Yeva Nersisyan (2011, p134) further demonstrate, these

observations spring essentially from the slowdown in the US at the beginning of the demobilisation after World War II. Indeed the US took 6 years to build up enough productive output after the war ended early in 1945 to replace the fiscal stimulus of armaments (that accounts for the lion's share of the doubling of US real GDP between 1939 and 1944). In fact GDP and debt had essentially and unsatisfactorily reached a plateau by 1949. It was only with the fiscal stimulus of the Korean War, beginning mid-1950, that US GDP rose above its level in the last full war year, 1944, and debt declined below 90%.

Tipping point theories are about government debt *causing* changes in GDP. It is vital not to confuse them with the reverse, with theories of how changes in GDP cause changes in government debt. Such a reverse causal flow is invariably present, since reductions in GDP other things being equal, cause an increase in government debt (due to reduced taxes received and more government expenditures needed, e.g. for helping the unemployed). Care, not careless use of data, is therefore required to disentangle these two causal chains.

World War II's government fiscal stimuli (armaments build up not covered by tax hikes) is an unambiguous instance of the *reverse causation*, namely of a GDP expansion – without a comparable escalation of tax rates – *causing* a rise in government debt, as is the sequel demobilisation episode (withdrawal of this fiscal stimulus). In broad brush, World War II expenditure was comprised primarily of spending on personnel and munitions in a US that entered the war suffering severe unemployment. There was little change in tax scale and the combination likely had the following effects. The previously unemployed personnel spent essentially all their income boosting the income of other previously unemployed suppliers of their needs, with big fiscal multipliers yielding tax receipts in excess of the personnel incomes paid by the US government. The munitions industry also employed previously unemployed people and to this extent had like multiplier and tax effects. But munitions have too low an embodied labour content so that expenditures on munitions result in an overall increase in the government deficit. Demobilisation got rid of the contribution to the government deficit from munitions so that the government deficit might have shrunk except for the fact that the previously employed military personnel are now mainly unemployed, sending a negative output and tax stimulus through the economy to such an extent that there is a rising government deficit until substantial numbers of the demobilised locate civilian employment. See Table 1.

Table 1: Reverse Causal Chains to those of Debt Tipping Theories for Wartime US and its Sequel Demobilisation

Real US GDP ($ billion) and Public Debt / GDP

World War II Armaments Stimulus						Demobilisation			Plateau		Korean War Stimulus	
1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
1072	1166	1365	1617	1882	2034	2011	1791	1775	1853	1843	2004	2159
65%	70%	61%	61%	81%	101%	124%	129%	112%	101%	103%	96%	83%

Sources: http://www.bea.gov/national/
http://www.usgovernmentspending.com/downchart_gs.php?year=1950_2015&units=p&state=US&chart=H0-total&local=s

It would be patently false to interpret the World War II demobilisation contraction in US GDP as having any causal connection whatsoever to a US government debt tipping point. It was rather a case of a normal post-war demobilisation depression – the typical drop in growth caused by the withdrawal of the fiscal stimulus of payment for armaments and military

personnel. By cutting government the taxes earned previously from war industries, their employees, and those in the military, in these years immediately following on from World War II, demobilisation damaged US GDP growth and raised US government debt. It is of course impossible to blame demobilisation depressions on government debt; it is similarly impossible to invoke Reinhart and Rogoff's tipping point econometric estimates at a threshold of 90% as having any pertinence for the current US debt situation. It is perverse – a false inference regarding direction of causation – to propose that these data points supply evidence for a US tipping point theory. Rather these years are prima facie evidence of reduced economic growth from lack of a big enough and rapid enough fiscal stimulus package to replace the globally destructive mass armaments fiscal stimulus that ends abruptly at the end of any war. Peaceable fiscal stimuli such as the GI bill that provided funding for college (or high school or vocational) education for returning World War II veterans (commonly referred to as G.I.s) as well as one year of unemployment compensation and some additional benefits while helpful, were inadequate. The full recovery came only with another wartime fiscal stimulus, that of the Korean War.

Although the flaw of including the Second World War and its sequel the Korean War is absent from some other tipping point studies, these studies also lack contemporary relevance. This is because this entire genre of studies suffers other serious flaws.

3. Damage caused by substantial exchange rate movements

The prime flaw is that government debt tipping studies are conducted as if there were a single world currency and thus fail to allow for the exchange rate damage wreaked by unpredictable massive exchange rate changes. The exclusion stems from widely held views amongst economists that changes in exchange rates are benevolent or at least non-damaging. The widely held view among central bankers and academic economists, including Reinhart and Rogoff, is that in omitting the fact of multiple unpredictably massively realigning currencies, they are not omitting an impediment to growth – not omitting a principal cause of reduced and negative growth.

Real world exporters, importers, borrowers and lenders remain flabbergasted that any policy influential economist can hold such a view, when it is so patently in conflict with the stylised facts of the massive damage that substantial exchange rate movements cause. This entire section concerns damage caused by exchange rates and how mainstream economics misses all the damage through shoddy arguments. Any serious grappling with the global financial crisis and its future risks pertaining to the Euro (through its higher than average publicly indebted members – and to the US from contagion effects) requires that economists enter the real world.

Entering the real world requires recognition of the scope for actual or feared substantial exchange rate movements to generate a global meltdown, as occurred in the early 1930s. A financial shock makes it difficult enough to maintain capital flows under any conditions. Rolling over debt and continuing other forms of inter-country lending becomes increasingly costly for borrowers since under an adverse shock. Such shocks create additional demands for currencies in which most international debt is denominated (nowadays US dollars and yen). These currencies in which the international debt is denominated start appreciating rapidly as many borrowers find themselves denied permission to rollover their debts and have to get the foreign currency to repay in full or go bankrupt. The appreciation of these

currencies against the currencies of the ultimate lenders accelerates the repayment difficulties of the lenders. On top of suddenly having to repay the principal, to repay it the lenders have to find more by the amount of the appreciation. When the appreciation is substantial, this renders rolling over exceedingly difficult – and repayment of the principal when the roll-over is refused as is typical in shocks, quite out of the question. Lenders recognise how depreciations of the borrowers' currencies increase the likelihood of default, and impose exchange rate risk premia on lending to residents in countries deemed likely to depreciate their currencies. When the risk of depreciation gets big enough international borrowing is essentially extinguished, as was Germany's fate in 1931 – and many another borrowing country, such as Australia. These risks of depreciations are ever present in emergencies. It is hard for governments to make their promises believable enough to the lenders in advance, when lenders are already jittery. [4] Lenders to borrowers in another currency face risks piled on risks piled on risks:

(i) risks of non-repayments because economic conditions are bad,

(ii) these risks are escalated by the borrower's country engineering a beggar-thy-neighbour depreciation in the hope that this will boost exports and employment – a depreciation that may preclude its borrowers repaying foreign debt (as the repayment interest charges have risen by the depreciation)

(iii) both risks are escalated by trade barriers and depreciations in third countries, all of which indirectly limit the borrower's scope to make export earnings with which to repay the debt.

This triple tier of risks from actual and feared exchange rate changes can first freeze inter-currency block capital flows and then their trade flows. This global meltdown of capital and (to a large extent) trade flows occurred only 80 years ago.

A like melt-down of capital flows would have happened recently if nationalistic central banks had failed to be sufficiently cooperative in using central bank swaps offered by the US Treasury and Federal Reserve. Mercifully it did not happen in the crucial twelve months beginning in December 2007, Allan and Moessner (2010). There was merely a three-day freeze when the US Fed failed to understand the ramifications of not having a US taxpayers' guarantee, or of organising an alternative taxpayer backed takeover of Lehman Brothers.

But the situation remains ultra-dangerous. Many central banks are far less cooperative now than three years ago. Further, the exchange rate rescue during 2008, as detailed in Part 4, happened despite total ignorance amongst the central bankers of its exchange rate ramifications. The currency swaps among central banks that rescued the system over 2008 were organised to bring to a close the system by which the US Fed was bailing out foreign banks before US politicians discovered that this was what they were doing (see Part 4). The world financial system is exceedingly unsafe while central bankers, educated by economic academe, remain blind to how exchange rate changes could freeze inter-country lending, as they did in the 1930s – when nobody knew who would or would not go off gold, nor when.

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[4] To see how hard it is in an emergency to establish credibility, consider Germany in the early 1930s. Germany suffered the fate of massive withdrawal of loans from the US despite not depreciating against the US dollar in its effort to keep the foreign loans flowing – instead facing a massive appreciation of its currency against the US dollar (when that country left the gold standard). The US lenders however could never be sure whether the German government would follow the UK in 1931 when it left gold and depreciated against the US dollar. As it happened, Germany did not follow this depreciation route in an attempt to boost employment in exports but instead followed the more successful employment route of building up armaments, as discussed later in this paper.

Their blindness results in closed economy modelling of the crisis in terms of Libor spreads in a single currency, e.g. Sengupta and Tan (2008), Taylor and Williams (2008). The blindness springs from faulty partial analyses of what exchange rate movements cause, combined with simplistic modelling, and supported by selective use of data.

3.1. Selective use of beggar-thy-neighbour depreciations

One such combination yields the conclusion that deliberately engineered exchange rate liquidity shocks are beneficially equilibrating as in Mundell (1961). The conclusion stems from the selective use of beginning and end period data of a country smashed by a massive exchange rate depreciation, followed by its ultra-low GDP growing for a few years more rapidly than its neighbours. The selective short-term perspective praises any transient beggar thy neighbour effects that are spotted as if they must be beneficent equilibrations, when accounting identities across the set of countries preclude such a conclusion, Pope (2009a). The praisers rarely take a long enough perspective to notice that the devastated country that depreciated typically never recovers its comparative GDP ranking.

Today the country being unwisely pushed toward a depreciation, from the typical unwarranted use of simplistic models and selective examples, is Greece.[5] This follows from the false allegation that her government debt arises from "lack of competitiveness", e.g. Hans Werner Sinn (2011). Greece's high level of government debt does not arise from lack of competitiveness. Nor does it arise from big government expenditures requiring an austerity programme. As Yannis Monogios of Greece's Centre of Planning and Economic Research itemises, Greek government expenditures are modest by euro standards. It is Greece's collection of taxes from the wealthy self-employed that is dismal, way below the standards of other euro countries, Monogios (2011).

Such tax evasion cannot be cured by increasing competitiveness, or by depreciating, or by austerity. Nor can fiscal transfers cure such tax evasion, much as transfers are desirable. Nor can tax evasion be cured by interest forgiveness, much as such forgiveness is desirable.[6] But there are numerous hitherto untried ways for Germany (and others) to assist Greece in reducing tax evasion by its wealthy, including three that would aid Germany in: 1) collecting taxes from her own wealthy tax evaders, 2) fulfilling her own Maastricht Treaty debt limit obligations, and 3) reversing her dramatic increase in inequality over the last decade.[7]

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[5] Greece, for instance should appreciate – not depreciate – to gain competitiveness, if we took say Japan as the example. Japan's trade balance rose massively in tandem with her appreciations for decades. This however is as arbitrarily selective and ignoring all the other complexities and interactions and associated conflicting interests of capital and trade flows. A laboratory experiment avoiding some of these misleading simplicities, reported in section 8.2 below, indicates that in real world complexity a single world currency is better for countries maintaining competitiveness.

[6] Interest forgiveness is doubly desirable when (see the last paragraph of section 3.2), the euro bloc *as a whole* failed to install sensible protective measures against government interest costs rising *unduly* through withdrawal of foreign hot money flows.

[7] First, Germany and Greece could together do what many governments have been threatening for over a decade but never done (presumably since too many friends of politicians would be discovered). This is to have their nationals' secret bank accounts accessed by their tax officers to collect unpaid taxes. A sizable country can get such access with threat of non-bank clearance with Swiss banks. A second avenue is adopting Sweden's publicly available tax records for all citizens. A third avenue is Denmark's culture of reporting on tax evaders in contrast to that of Greeks and Germans who only report thievers of physical items from private houses. A fourth avenue is luxury-graded import duties and sales taxes, Kakwani (1983). This avenue would penalise German exporters of luxury goods such as Mercedes Benz, since the wealthy Greek non-taxpayers have a marked propensity to import these.

Greece illustrates the error discussed in section 1.2 above, faulty policy analysis and advice by failing to decompose debt into its expenditure and tax components. A focus on *total* Greek debt – without decomposing it to notice that the faulty component is wealthy tax evaders – has resulted in many economists making the euro a scapegoat. With rose-tinted selective optimism unconnected to the real world issue of how to extract taxes from the wealthy self-employed – they see a beggar-thy-neighbour depreciation as the panacea, and through their misdiagnosis of where the problem lies, endanger the euro.

3.2. Selective use of sovereign debt burden

Selectivity underlies the widespread view that multiple currencies are good because they avoid paying higher interest rates on government debt. According to proponents of this view such as Paul Krugman, countries with their own separate currency are immune from sovereign debt risk premia: the peripheral Eurozone countries facing interest rates on rolling-over their debt have salvation at their doorsteps by exiting the euro zone.

> First, if you look around the world you see that the big determining factor for interest rates isn't the level of government debt but whether a government borrows in its own currency. Japan is much more deeply in debt than Italy, but the interest rate on long-term Japanese bonds is only about 1 percent to Italy's 7 percent. Britain's fiscal prospects look worse than Spain's, but Britain can borrow at just a bit over 2 percent, while Spain is paying almost 6 percent.
>
> What has happened, it turns out, is that by going on the euro, Spain and Italy in effect reduced themselves to the status of third-world countries that have to borrow in someone else's currency, with all the loss of flexibility that implies. In particular, since euro-area countries can't print money even in an emergency, they're subject to funding disruptions in a way that nations that kept their own currencies aren't — and the result is what you see right now. America, which borrows in dollars, doesn't have that problem. [Krugman, November 12-13, 2011]

A false reality is constructed by selecting special events at special times in particular countries, and ignoring the complexities of debt in a world with multiple currencies. The actual reality is that countries issuing their own currency are also at the mercy of the carry trade ("hot" cross- country money flows), and also of nasty exchange rate liquidity shocks adding to their government debt. Two examples suffice.

First, contrary to Krugman, Britain never has been safe from a sharp rise in its sovereign debt simply because it has its own £. To realise this, recall that Britain's central bank, the Bank of England on Black Wednesday in September 1992 lost £3.3billion, a loss that caused the UK government debt to jump up 12% virtually in a day! British government debt was at the mercy of speculators; George Soros and others suddenly unpredictably attacking the currency. British government debt was at the mercy of other central banks. On Black Wednesday Germany's Bundesbank showed no mercy and failed to intervene to support the Pound and rescue British taxpayers from this massive hike in government debt. British government debt could not have had this 1992 overnight jump of 12% had there been a single world currency.

Second Krugman should have considered his own country the US, which has its own currency, the greenback. The US government debt burden could rise overnight by more than the 12% that the UK suffered on Black Wednesday. US Treasury officials realising this

routinely rush to China to try to avoid a catastrophic rise in the interest paid on its government debt by wholesale cessation of Chinese purchases of its debt.[8]

Governments cannot avoid the tragic consequences for their central banks of unfavourable exchange rate changes causing government debt to leap. [9] Avoiding this requires a single world currency. However, governments can avoid the parlous position of the US and the higher interest rates now being suffered by peripheral eurozone countries. They can avoid it by requiring financial institutions operating in their country to hold a suitable proportion of their own government debt. Alternatively, the European central bank could impose reserve requirements on banks, of which a proportion must reflect the sovereign debt of the regions in which they do business. This simple procedure was in force in Australia in the "good old days" when central banks regulated commercial banks, in ways now replaced with price incentives.[10] Indeed, there is a panoply of instruments that in the non-neoliberal past governments have used to limit the interest paid on their debt, and to limit the risk of hot money speculative attacks raising that interest rate. Dropping them was a function of neoliberalist naivety. It would be common-sense to either reintroduce them or create new regulations/instruments that would serve the same purpose. Richard Koo (2011) notes one simple means for Italy and Spain to skip rising interest rates on their sovereign debt: within the Euro area only residents of that country can buy its debt. As he observes, this stops the big Spanish insurance bodies buying German instead of Spanish debt.

3.3. Blindness to interest rates raised by depreciation risk premia

Other economists have a better grasp of history, and would see it as preposterous to view one's own currency as the means of keeping government debt interest rates manageable. But many of these still favour multiple currencies, declaring exchange rate changes beneficently equilibrating. Thus, Reinhart and Rogoff (2004 p.28), praise the massive exchange rate changes engineered by Australia's central bank as beneficently equilibrating. The issue however is, beneficent for whom?

Over the decades since the early 1980s when it floated and adopted a policy of a wildly gyrating exchange rates, Australia, has been a net borrower from overseas. It has had a solid economic performance and democratic stability. Yet from its first central bank decision to unexpectedly depreciate, its exchange rate risk premium jumped. In other words, its businesses, that through its banks had borrowed overseas massively, faced overnight a jump in interest rates – overnight as could be seen from the jump in the pertinent interbank borrowing rate.

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[8] Whether US Treasury can avoid this catastrophe remains to be seen given the black comedy between US factions concentrating on the capital account and the vociferous trade war campaigns of US factions focussing on its export and import competing sectors. The US Treasury seeks Chinese purchase of its debt, something that increases the value of the US dollar, while the US export lobby, supported by many US politicians and Ben Bernanke, the Chair of the US Federal Reserve, wants the US dollar depreciated. The associated inflammatory speeches, summarised aptly by the media with titles such as "Bernanke defends Fed monetary policy, blames China for currency tensions",[8] endanger international relations in general, and in particular risk China spiting the US by abruptly ending purchase of any US Treasuries.

[9] This vulnerability to devastation of government debt from exchange rate changes remains even under the textbook example of Paul Samuelson in which government debt is exclusively held by nationals. Having separate currencies imposes on central banks the risk of losses from exchange rate changes that increase that countries' government debt.

[10] However price incentives require years of fiddling to discover the right incentive, and the incentive needs further fiddling as conditions change, rendering quantitative orders more appropriate.

Australia (like New Zealand) has faced exchange rate interest rate risk premia relative to other rich democracies pushing its interest rates 4 to 10 times above those of other rich democracies. Reinhart and Rogoff might thus be interpreted as declaring that Australian businessmen benefit from paying 10 times what German and US businessmen pay in interest on their loans. Small wonder business people involved in international trade deem that economists who praise volatile exchange rates lack connection with reality.

Like most economists, Reinhart and Rogoff seem to be unaware of the actualities of borrowers suffering higher interest rates because of exchange rate uncertainty. That higher interest rate is termed the (depreciation) exchange rate interest rate risk premia. This lack of awareness can be inferred from the international economics text of Maurice Obstfeld and Kenneth Rogoff (1997). The text is an essential pre-requisite for an education as an international macroeconomist. Uncertainty is introduced, only about half way through the text, and then as if there were a single world currency for traders in goods, services and capital. The costs of exchange rate uncertainty are left out, including the higher interest rates resulting from exchange rate risk premia suffered by borrowers. They have to be left out to allow the graduate student to grapple with tractable maximising problems within expected utility theory (that itself is risk-free as regards experiences of agents in chronological time, Pope (1985), Pope and Selten (2010/2011). The damage to international economic policy from economics graduates being diverted to non-real world problems of imaginary maximising agents is further explored in Pope and Selten (2011a).

The higher interest rates arising from exchange rate risk premia are a major component in the borrowing costs of businesses that primarily borrow overseas under US dollar denominated contracts. Businesses started borrowing extensively in this way in numerous countries, developed and developing since the early 1970s initiated a need to recycle OPEC petro dollars. These loans have carried depreciation risk premia ever since the nasty shocks of the doubling of the US dollar in the early 1980s sent many businesses bankrupt.

Businesses borrowing include those located in Australia and New Zealand. The Australian and New Zealand dollar are ultra-volatile relative to the US dollar, and so is the concomitant depreciation risk premia. These businesses pay interest charges that are not by 1%, not by 10%, not by 100%, but, since the early 1880s, frequently 4 to 10 times that paid by many rivals without these businesses' real sector activity being discernibly more risky than that of their competitors in Germany, the US, Japan and so forth. See e.g. Hawkesby, Smith and Tether (2000), Douglas and Bartels (2002).

3.4. Blindness to the ramifications of admitting that exchange rate movements are unpredictable

This massive interest surcharge might conceivably be a price worth paying if the beneficent equilibrating effects of exchange rates outweighed these costs. If exchange rates equilibrate so beneficently as to outweigh costs like higher interest rates, there must be fundamental supply and demand factors that have massively desirable impacts, and zero depreciation risk premia on interest rates. However, as surveys from the early 1980s, up to those in this millennium such as Charles Engel, Mark Nelson, and Kenneth West (2007) note, forty years of econometrics has failed to discover any out of sample equilibrating fundamentals whatsoever – unless the sample points are extended beyond policy relevant time spans (something predictable within three years). In turn, this leaves unpredictable any country's depreciation risk premium.

In short, all exchange rate changes and thus all the often massive exchange rate risk premia piled on interest rates, are unpredicted. No pertinent supply-demand fundamentals have been discovered – not the trade balance, not government debt, not private debt, not inflation rates …. . Beneficial equilibration is resoundingly empirically disconfirmed.

3.5. False correlation arguments

Confronted with this disconfirmation, some economists switch to the empirically false statement that exchange rate changes do not need independent analysis since they are correlated with inflation, e.g. Qian, Reinhart and Rogoff (2010). Consider the two most recent major exchange rate crises affecting much of the world, that of South East Asia in 1997 and that of the abrupt rise in the US dollar before sufficiently widespread central banks swaps were initiated in late 2008. Both occurred in periods of low or low and falling inflation, and caused drastic damage. In short the arguments that exchange rate and inflation changes correlate to such an extent that it is superfluous to study exchange rates, and the associated implication that exchange rate changes cause no more damage than inflation and can be studied as if there were a single world currency, is wishful thinking.

3.6. Use of irrelevant price relativities

On other occasions the same economists declare that there is no need to study exchange rate changes since these are harmless. Their reasoning is that even after massive unpredicted exchange rate liquidity shocks, the relative consumer price indices of countries change little, e.g. Rogoff (2001). This is to focus on the wrong price relativities. Consumer price indices comprise non-traded goods. What exchange rate changes do is to jolt international goods, services and capital flows, and to massively and arbitrarily redistribute international wealth.

In goods and services, the pertinent price relativities are between competing local and foreign traded goods prices. Once the focus shifts to these, the damage becomes apparent. To give but one example, depreciations have wiped out much or all of the import competing manufacturing sectors of many OECD countries, Pope (1981, 1985a, 1986, 1987, 1992); Pope/Selten (2002); Sheets (1993: Ch.1). Thereby these depreciations are responsible for part of the damaging structural upward shift in the unemployment rate in advanced economies. This began occurring in the early 1970s, and slowed growth in many advanced countries in the later 1970s, the 1980s and in some also in the 1990s.

Equally important is how exchange rate changes cause shocks, changes in capital flows and changes in wealth.

A focus on consumer price indices ignores how exchange rate movements randomly, arbitrarily, inefficiently:

- shift wealth between countries,
- send businesses and governments broke,
- generate massive losses for taxpayers, and
- divert scarce high talent away from the real sector into the foreign exchange component of the financial sector whose services would be irrelevant without variable exchange rates.

3.7. Examples of the devastation caused by exchange rate movements

A few examples paint the picture of these unpredictable nasty shocks caused by exchange rate changes. Those selected are from the period after the demise of the Bretton Woods pact for exchange rate stability, and the concomitant demise of steady growth in rich democracies.

Example 1
There was the tripling of the price of oil twice in the 1970s as Arab retaliation against the US for siding with Israel in the Sinai war. This resulted in a massive transfer in wealth to those in the OPEC cartel, who, unable to instantly spend it all, delegated it to US banks who chose to lend out these billions in US dollars (petro-dollars loans). These exchange-rate unhedged petro dollar loans continued into the 1980s, since the redistribution of wealth was too vast for OPEC countries to spend it all in less than a decade. The petro dollars were recycled primarily on a short term (three month roll-over basis), a most profitable way of issuing the loans from the viewpoint of the US banks. In a retrospective understatement, Paul Volcker observes in Volcker and Gyohten (1993) that it is unclear that such short-term loans were in the general interest. Rapid rollover debts are unmanageable for borrowers if either interest rates or exchange rates shift adversely and unpredictably. The upshot was that the unpredicted doubling of the US currency's value between 1982 and 1985, doubled rollover debt interest repayments for most borrowers outside the US. The doubled rollover debt repayments created extreme hardship even in advanced economies, and sent much of the Third World into bankruptcy. The decision was, with IMF assistance, not to save the real economies in the first and third worlds, but the New York financial sector.

Example 2
In the early 1990s, the UK central bank and taxpayers suffered the catastrophic Black Wednesday pound depreciation of 1992.

Example 3
The 1997 East Asian crisis made for devastating depreciations that wrecked economies that had been declared as model in their behaviour by the IMF a few months earlier.

Example 4
The East Asian crisis aided in the collapse of the rouble the next year and meant that a systemically important hedge fund required a bailout (Long Term Capital Management), as detailed in the *New York Times and* in Paul Davidson (2007). Without swift action of the chair of the US Federal Reserve Board Alan Greenspan to enable a fairly smooth collapse of this giant hedge fund, the entire world risked the sort of financial implosion actually experienced about a decade later.

Example 5
The abrupt rise in the US dollar followed the collapse of the dotcom bubble and thus the collapse of the scope for international borrowers to rollover their US debt. This abrupt rise of the US dollar put giant multinational real sector firms like Pasminco into bankruptcy. It also caught the Australian Treasury, whose interest swap deals had been premised on the Australian dollar rising, when in fact the dotcom liquidity crisis meant that instead it was the US dollar that rose dramatically.

Example 6
In the recent global financial crisis that began in late 2007 and that is far from reliably over, there was a narrowly averted global financial and real sector meltdown. It was averted

through inter-country cooperation, central bank currency swaps that stopped the rise in the value of the US dollar (that many key currencies faced by the time of Lehman's disorganised collapse), because debts denominated in US dollars could no longer be rolled over. Without these central bank swaps there would otherwise have been an unmanageable soaring in the value of the US dollar.

4. Blindness to exchange rate damage

None of the damage from exchange rate changes listed in any of the above six examples is in the vision of the average economist. It is unsurprising, therefore, that economists – even those who engineered the stabilisation of the value of the US dollar in the US Federal Reserve – missed the economic salvation generated by the central bank swaps. Indeed the US Federal Reserve missed the exchange rate signals of the beginnings of the crisis on account of the endemic closed economy modelling practised by central banks. Thereby they lost almost two years of opportunities for commencing compensatory action.

The US dollar started appreciating markedly from late 2005 as difficulties were experienced with house mortgage repayments, resulting in reduced scope for foreign firms to rollover their US debt, much of which was US dollar denominated. But the causes of this rise in the demand of US dollars went unremarked largely by the US Federal Reserve Board. Its staffers instead used only closed economy indicators. These yield an onset date almost two years later, too late for gentler remedial action. Thus, the onset of this millennium's financial crisis is dated by the US Federal Reserve Board's New York staffers Michael Flemming and Nicholas Klagge (2010) as only beginning in early August 2007, when interbank lending contracted sharply; the contraction followed the release of information that key hedge funds of a big foreign bank were in trouble.

In response, by December 2007, in conjunction with the US Treasury, Ben Bernanke had instituted TAF, the Term Auction Facility, to aid US banks, and those foreign banks with enough deposits/collateral in the US. To help foreign banks ineligible for TAF, and to reduce the use of US taxpayer money to help eligible foreign banks, at essentially the same time, mid-December, with the consent of the US Treasury, the chair of the US Federal Reserve Board negotiated swap agreements with the European Central Bank and the Swiss National Bank, and successively raised the amounts. Compared to late 2005, by mid-2008, the US dollar had already soared 30% against the euro and some other key currencies as increasingly borrowers were unable to rollover their international debts that were mainly denominated in US dollars. The measures were thus insufficient initially to help foreign borrowers, but began to be effective in reversing the US dollar shortage.

Within a month of the collapse of Lehman Brothers in September 2008, yet more foreign banks located in many countries were knocking at the US Federal Reserve Board door for help. Ben Bernanke expanded the dollars available through the swaps agreement by nearly a factor of 10, including by brokering swap deals with the central banks of most of the developed world, and soon after, with some in the third world. The upshot was a removal of the US dollar shortage - of an allowed reversal of exchange rates to their pre-crisis level within a couple of months. These central bank swap agreements thus averted something far worse than the unpredicted doubling in the value of the US dollar that occurred in the early 1980s. But the US Federal Reserve Board averted this exchange rate rise catastrophe

accidentally in its efforts to have foreign banks stop pressing it for liquidity at the cost of US taxpayers.

The US Federal Reserve Board felt it must be an impartial supplier to US and foreign banks of liquidity in the emergency since the foreign banks threatened that otherwise New York would lose its status as an international financial centre. Ben Bernanke, however, could anticipate the political ire that would erupt four years later from freedom of information revelations of US taxpayers bailing out foreign banks. For further details, see Pope and Selten (2011a and 2011b). TAF (available to some foreign banks with US subsidiaries) and central bank swaps (available in due course to most foreign banks) removed this exchange rate pressure during the height of the crisis. Within a month of the Lehman Brother collapse, in the case of the euro, and for some other currencies by early 2009, the swaps had resulted in a reversion in the value of the US dollar to its pre-crisis level.

The salvation brought about by averting a drastic rise in the US dollar is pivotal. This salvation, this averted exchange catastrophe, should not be sidestepped as it has been in nearly all analyses – by inquiring (in a closed economy setting ignoring exchange rates!) whether these central bank swaps damped interest spreads, and like questions! Massive sectoral and inter-country damage arises from these exchange rate changes themselves. The fundamental issue is how the central bank swaps cooperatively moved exchange rates in the critical crisis months, and how quickly many central banks reverted afterwards to uncooperative beggar thy neighbour depreciations.[11] As the foremost cause of massive damage in international flows of goods, services and capital,[12] *unpredictable* exchange rate changes arising from central bank conflicts need to gain centre stage before any debt tipping estimate is informative. Further, future exchange rate changes also affect growth. But as detailed in our central bank conflict cooperation theory, these will remain largely unpredictable. This is due to the extreme difficulties in predicting the personal and political interactions underlying central bank cooperation and conflict. This inherent exchange rate unpredictability in turn puts limits on how informative econometric tipping estimates could ever become.

5. Needed: a different class of tipping point estimates

Debt tipping point estimates are time-wise and sector-wise too aggregative. Government expenditures need separation by category on account of their differential multipliers, and inclusion along with government debt, since each category of government expenditure operates with a different lag and through different channels. Econometrically estimated multipliers for categories of government spending include the effects of wastage, so that it would be double counting to consider a reduction for wastage (for public sector inefficiency). Econometrically estimated multipliers may need adjustment for the state of the cycle also. The multipliers will be smaller in a boom if they crowd out private investment and expenditure.

[11] Thus as the crisis receded, Linda Goldberg, Craig Kennedy and Jason Miu detail how many central banks selected less competitive rates at which to provide the US dollars available by the swap arrangements, while the teams of Joshua Aizenman and others, note that many countries in due course depreciated against the US dollar despite still having central bank swap facilities. Naohiko Baba (2008) and Baba, Frank Packer, and Teppei Nagano (2009) detail the turmoil in forward exchange rate markets from borrowers being unable to roll over their debts in the wake of the financial crisis.

[12] Other factors impinging on growth such as housing and credit cycles are in comparison to exchange rates, predictable. Further these other factors are far steadier per period of time in their progressions up and down than are exchange rates. Models assessing the effectiveness of central bank swaps typically omit the exchange rate as a determinant as if there were not a set of central banks doing the swaps!

Currently the reverse seems the situation. US commercial banks are reluctant to reduce their stratospherically high free reserves and lend to the private sector. When the US Federal Reserve Board fails to force massive lending on these commercial banks, the alternative may not be efficient private sector investment and spending, but total waste.

6. Allowance for private sector wastage

The question must be asked about what private activities are being crowded out in each decade. Are they communally benevolent or communally destructive ones? Over the last forty years of neo-liberalism, in advanced economies, the biggest firms in the pharmaceutical and the finance industries have far excelled in profits, as measured for instance by those reported in the Fortune 500 top companies, and other measures.[13] Yet in these two industries, they have had such a high proportion of unproductive communally damaging output as to be classified as primarily bubble activities. Indeed bubble is perhaps too kind a metaphor. A more apt metaphor might be to classify this proportion of their activities as a cancer, as a malignant tumour.

6.1. The finance bubble

The bubble nature of much of the growth in the finance industry will be familiar to economists, the readers of this journal, and thus needs little detailing. This is because its bubble nature became apparent in the aftermath of the disorderly collapse of Lehman Brothers in September 2008. Alan Greenspan authorised the rescue package devised by the New York Fed's William McDonough that averted the disorderly collapse of the giant hedge fund Long Term Capital Management in 1998. Had he still been at the helm in 2008, it is just conceivable he could have kept the financial sector bubble going up to today, so that many readers might doubt its bubble nature.[14]

Prior to the collapse of Lehman Brothers, there was already an eerie parallelism between the 1920s economic difficulties of real economies while the private financial sector bubbled, and the jobless US "recovery" from the bursting of the Dotcom bubble in the form of an acceleration of its private financial sector bubble. But those who pointed this out, or who earlier pointed out the inefficacies and dangers of Long Term Capital Management's arbitrage calculations, the even more fanciful nature of Enron's fancy derivatives, the frauds (going beyond mere danger) involved in many credit default swaps, were silenced by the Financial Round Table's lobbying power. It parallels how the lobbying power of those holding prescription drug patents silences the frauds, the lives lost and the inefficacies in the usage of

[13] Public Citizen (2003), Angell (2004), Nelson (2008), Mijuk (2011), Philippon and Ariell (2008, 2009), Rhodes and Stelter (2011, 2012), Stelter (2012).

[14] Whiles conceivable, he might well have failed. On its being conceivable, Greenspan might not have tightened interest rates as did his successor Ben Bernanke, prior to the crisis, a tightening that started the unwinding as investment banks and others leveraged on average 30 fold and many far more than 30-fold, could not afford even a minute interest tightening. Whether Greenspan would have avoided the explosion of the financial sector unwinding on other accounts before he could organise orderly institutional collapses as indeed Bernanke had done for several institutions prior to Lehman's collapse. His inability to organise it related to his reluctance to have US taxpayers underpin Lehman's purchase by a UK bank when the UK Financial Authority insisted on such a guarantee for it to approve the purchase. Charles Ferguson (2009) details Bernanke's unawareness of the international bankruptcy law ramifications of allowing Lehman's disorderly collapse. Whiles Greenspan was likely equally unaware of these, Greenspan was so close (in many respects too close) to the parties involved, that he would have in a generalised manner understood better the extreme dangers in such a collapse, and conceivably engineered the taxpayer guarantee from either the US or from the British authorities.

most patent drugs and vilifies those raising these issues. Until the collapse of Lehman Brothers, in its forty build-up years, those seeking to get the wastage excised from the private financial sector, faced censure, vilification and worse. The market never does anything seriously wrong. The government sector is where all substantial wastage lies was the prevailing view.

The damage from the finance bubble of the last 40 years cannot be estimated yet, since it is unclear what the future will bring to either the real or the financial sector in the US or in any other country. But if we use information provided by John Boyd and Amanda Heitz (2011) on the cost of a typical financial crisis in the last few decades, it will take the US alone a payback period of at least 53 years, and possibly up to double that. The collapse of the 1920s financial bubble destroyed the highly integrated world capital market to such an extent that risk spreads (a prime measure of integration) have remained higher this millennium than in gold standard days.

The collapse of that private sector finance bubble thereby destroyed the last chance of Germany being able to meet its reparations payments with German democratic consent, as it made the war reparations transfers dependent on continued US loans, whose hot money loans component collapsed soon after, as Keynes in due course appreciated as a risk. The rise of Hitler may be partially attributed to unreasonable reparations, as Keynes predicted in 1919,[15] and partially to the private sector financial bubble giving a false impression of Germany's reparations capacity. The evaporation of the US hot money inflows (aided by fears that the German mark would be depreciated), precipitated the German banking crisis of 1931, Muget Adalet (2003, 2005), and added to Germany's already dangerously high level of unemployment.[16]

Furthermore Kepa Ormazabal (2008) furnishes telling evidence that, but for the US *private* financial sector operating against the interests of the industrial sectors in Germany, the US, the UK and France, Germany's unmanageable war reparations would have been dropped in the mid 1920s in exchange for the US forgiving the UK and French the massive debts to the US that they had accumulated before the US entered World War I. What the UK and France needed was gold (foreign exchange) to repay their wartime-accumulated debts to the US. Such tripartite debt forgiveness would have been to the massive benefit of the real sectors in all four countries, the UK, France, Germany and the US. However, this did not happen. Instead the potential real sector profits were skimmed off in what in the end proved a vain effort to have three of the countries repay their war debts, and some of what was skimmed off was wasted in a 1920s financial private sector bubble.[17]

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[15] See e.g. Keynes (1920).

[16] Ohlin contended that Germany could borrow overseas to meet the reparations. Keynes (1929, p7), warned that Germany's international borrowing opportunities from the US would dry up in a crisis – as indeed happened in 1931 with the conjunction of high German unemployment and the US banking crisis – and that if these dried up, Germany's domestic savings could not then sustain the exports required for Germany to keep to the Dawes plan reparations schedule. On Keynes' 1929 debate series with Ohlin in the Economic Journal on this, see Ormazabal (2008) and Geoff Bertram (2009).

[17] The US financial sector had been booming from 1915 since France and Germany borrowed heavily from the US before she entered World War I. That war's end might have led to a normal contraction of the US financial sector. Instead, the US private financial sector ballooned into a bubble, importantly through loans to Germany in the 1920s. In the 1920s, there was discussion of forgiveness of Germany's reparations with concomitant forgiveness by the US of British and French loans. But US private sector financial interests prevailed over such proposals, and in prevailing, consigned to export surplus competitions with each other the debtor-to-the US countries of France and the UK, and like fierce export competition to the traded goods sectors of Germany and the US. The loans to Germany can be deemed to have a significant bubble component in the sense of being

6.2. The prescription drugs bubble

In virtually every western country, through patent laws, taxpayers offer almost free to private firms new drugs invented through university research funds. Taxpayers then contribute heavily to the commercial trialling of these publicly funded discoveries, and their write-ups in medical journals since a good deal of this comes also from government research grants. Tax payers contribute then heavily to – in some countries 100%) – purchase of the patented drugs prescribed by clinicians. Taxpayers contribute to the medical publications and other information supplied to clinicians by the firms who control both clinicians' initial education on drugs and their updating courses for continued medical certification. In addition to all these contributions, taxpayers encourage the patent medicines industry with generous tax deductions on its "innovative investment", and in many countries taxpayers forego normal sales taxes and import duties on its patented products, deeming them a merit good superior to food that often faces some taxes.

The upshot of this commercially driven boom in sales of patent medicines is typically false advice to clinicians on what to prescribe, and as the UK Royal College of Physicians (2010) determined, a situation that prevents people from making healthier choices. There has been a wholesale distortion from making the environmental and lifestyle changes, that can enhance health. Instead of making these changes, pill popping expensive newly patented drugs, of limited efficacy and marked adverse side effects, has become the prevailing approach to health problems.[18] Concomitantly there has been a corruption of medical journals and academe into publishing pseudo objective clinical trials and assessments of these patented products. The corruption is detailed by the International Committee of Medical Editors in their reform rally of 2001,[19] and more comprehensively by former *British Medical Journal* editor, Richard Smith (2010). There have been like scandals as regards medical devices.[20]

Itemisations of the waste to human health and citizen's budgets date back in journals to the 1990s. Three books presenting more comprehensive accounts of this medical disaster are those of Abramson (2004), Angel (2004) and the former director of the Integrity in Science Project, Merrill Goozner (2004). Each year since, such is the extent of the calamity of the prescription drugs bubble, multiple journal articles and several new books appear on its extent with suggested remedies, including statistical literacy education for clinicians and patients.[21] Proposed remedies also include barring the currently standard practice of publishing data from that subset of the clinical trial patients in which the drug seemed to work well, and hiding unpublished virtually all the bad results of the trials, something that has turned evidence-based medicine into a black joke.[22] Last year's reform proposals for creating better doctors include Berlin's Max Planck Institute on Human Development, Gerd Gigerenzer, and Oxford's National Knowledge Institute, J.A. Gray Muir, Gigerenzer and Muir (2011). Last year's reform

into activities that had low likelihoods of enabling Germany to fulfil its reparations repayments obligations if economic conditions deteriorated markedly, Ormazabal (2008). This has analogies to US housing loans in the last couple of decades having a large cancerous, bubble component, namely those made to borrowers with lowish repayment likelihoods if economic conditions deteriorated.

[18] Abramson (2004), Blech (2009), Pope (2009b), Weuve et al (2012), Smith (2012).

[19] This was published jointly by the editors on 13 September 2001, in an attempt to avoid any of them being victimised by withdrawal of promotional support by pharmaceutical firms. It can thus be found in the top English-speaking medical journals on that date including in *The New England Medical Journal*, *The Lancet*, *The Journal of the American Medical Association*.

[20] See e.g. Gigerenzer, Mata and Frank (2009, 2010), Dorschner (2010) and Sage, Huet and Rosnebot (2012, and Reuters (2012).

[21] See e.g. Monahan (2008) and Gigerenzer and Galesic (2012)

[22] See e.g. Wieseler B, McGauran N, Kaiser T. (2010); and Loder and Godlee (2010)

proposals for reducing medical conflicts of interest also include those of top figures in Germany's medical establishment, namely Mainz University's Klaus Lieb, the German Network for Evidence-based medicine's David Klemperer, and the President of the German Doctors' Pharmaceutical Commission, Wolfgang-Dieter Ludwig.[23]

But at present, giving good advice to patients and reducing conflict of interest is an uphill battle. Faculty nonchalantly allow their name to be put on ghost written articles by firms to acquire promotion, with payment for their “editorial time” in considering the offer. If the faculty member is eminent enough, for instance on one of the infiltrated supposedly independent health government advisory boards, the payment can be very substantial for such “editorial time”. The US Senate’s 2010 publication *Ghostwriting in Medical Literature*, would like to get such side payments and the ghost-writing itself eliminated. In this report Senator Grassley provides case studies of how ghost-writing results in biased reports on drugs that should never have been approved, as top medical journal editors later admit. But the journal editors admit this only after the journal has made its mass profit from overpriced reprints of the article sold to the firm, and the firm itself has netted the patent holder blockbuster profits at the cost of the rest of the community, and killed numerous takers of the drug. Reforming medical faculty continue to document the private sector waste and damage to health from ghost writing as they have for decades, e.g. Goetszche et al (2009), Lacasse and Leo (2010) and Fugh-Bermann (2010), and some medical schools, embarrassed by publicity of the deaths resulting from biased papers published by their faculty, are beginning to tighten standards. But for the limited number of schools attempting to tighten, policing of any bar on ghost-writing, would require formidable courage.

Outside academe the corruption and waste from the prescription drugs bubble is on an even larger scale. News continues to surface from whistle blowers and from non-firm funded research of discarded and withheld evidence on damaging effects of drugs, their lack of efficacy, their exorbitant cost and fraudulent billings of health insurers and governments.[24] The criminal fines imposed in the law-suits render the pharmaceutical industry the biggest lawbreaker in the US. But as commentators observe, the fines, while in the billions of dollars, are trivial relative to sales on the blockbuster patented drugs eventually withdrawn in light of the deaths caused and their dubious efficacy.[25]

Fresh reform packages continue to be boldly proposed. But to date none has succeeded in substantially denting the wastage. Heads of regulatory bodies exposing malpractice and seeking to instill safety/transparency/objectivity find themselves out of a job. (Vogel, 2010) Being a health minister while honouring the mandate to care for citizens' health and pocketbooks is parlous. This was discovered by Horst Seehofer when, as Germany’s Health Minister, Seehofer had constructed a "positive" list. The list excluded the ineffective, dangerous exorbitantly expensive prescription drugs for which the German public health insurers currently pay. His positive list however was shredded. At a celebratory birthday party for the head of the patented drugs lobby, Seehofer's undersecretary presented to its head as his gift, the list shredded. Seehofer himself presumably was not invited to the party. See Huber (1997). On the shredding Seehofer then gave this interview:

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[23] Klieb, Klemperer and Ludwig (2011).

[24] See e.g. ElBoghdady (2011), Feeley and Reitman (2011), Fox (2011), Gabler (2011), German (2011), Kaiser (2011), Serafino and Kitmura (2011), Sharp (2011), Leuty (2011), Glenmullen (2012). Feeley, Fisk and Voraceos (2012), Sell (2012), Johnson (2012).

[25] Feeley (2011a), Feeley (2011b), Feeley, Yasiejko and Milford (2011), Feeley and Voreacos (2011), Feeley and Fisk (2011), Gabler (2011), Meier (2011), Seward (2011), Associated Press (2011), Feeley (2012), Johnson (2012), Lawrence (2012).

Reporter:
Does that mean that the pharma lobby was so strong that the government (reform) policy had to be withdrawn?

Horst Seehofer:
Yes. That is the case since 30 years till now. Meaningful structural changes toward a more social market economy in the German public health sector are not possible because of the resistance of confederated lobbying.

Reporter:
It cannot be that the industry is stronger than government policy. In the end government policy should say No!

Horst Seehofer:
I cannot contradict you.

English translation.
The German language broadcast is available on:
http://www.youtube.com/watch?v=DCy1D1HGeeA as uploaded 27 September 2008 by Germany's Organisation for Truth (die Wahrheit)

As Germany's Organisation for Truth said (in German) in its caption to the translated video clip above, "here Seehofer acknowledges that the confederated lobby is stronger than the people's government representative." A like reform-minded successor as Germany's Minister for Health, Ulla Schmidt, similarly discovered Big Pharma's greater strength, Huber (1997), Weber (2003).

Indeed being a health minister seeking to reduce the wastage is one of the most unenviable posts for any aspiring politician, Sturtz (2011). At the first hint of an ineffective drug with dangerous side effects losing its taxpayer subsidy, or being banned or not approved, the patented drugs lobby promptly discovers a patient ready to appear on television declaring that the drug about to be banned (or not yet approved) has saved her life, and what politician can cope with being portrayed as so heartless? The blackmail is the threat to withdraw commercial sponsorship of prescription drug trials. The threat is real. Commercially sponsored trials would virtually vanish if objective scientific standards were imposed on the trials, their write-ups in medical journals, and their subsequent prescription rate. Commercially sponsored trials, as the firms openly admit, are marketing exercises via the doctors and patients involved in them. Yet firms present them as the innovative engine of the entire economy and the bringer of health, and provoke inter-country rivalry to get more approved, Edney (2011), Harris (2011).

The marketing entices governments, the clinicians and public to ignore the evidence detailed by the UK Royal College of Physicians, and innumerable reform-minded medical researchers, that these patented drugs are perverting healthy choices and are excessively costly. The marketing entices all to ignore the fact that taxpayer funds lie behind the discovery of essentially all drugs – including that tiny proportion of drugs that have efficacy and sufficiently modest adverse effects to warrant their use. That tiny proportion may be around 0.01 of all ever approved, and thus an even more minute proportion of new patented drugs. How tiny the proportion is, might be judged by the matter that in 1995, Berlin's General Medical Council

proposed publishing a positive list of the 600 out of over 50,000 drugs for which German public health insurers paid. The list was not published, since er and German prescription drugs lobby argued that so doing would infringe free competition, and threatened to sue that Council's head personally for millions if the list were published – and won a law suit to that effect against the Germany's public health insurers a year later – Huber (1997).[26]

US reformers, such as the Center of Medical Consumers and Public Citizen, fight valiantly to have withdrawn prescription drugs that should never have been approved. They often succeed. But the victories are almost merely Pyrrhic. The withdrawals occur typically only after the firm has enjoyed about ten years of mega profits, and finds that its rising toll of lawsuits over deaths caused by the drug are reducing the profitability anyway. The law-suits lodged by relatives and patients, and other evidence of the pill's adverse effects transitorily alert the public that there is one bad pill, but fail to give the public that this bad pill is no exception, rather the norm.

In this respect the US reformers are way behind the German ones in documenting the extent of the problem, in documenting through construction of positive lists, the minute proportion of good prescription drugs. It might be that under US freedom of information acts the US reformers could construct a positive list to form an overall view of the problem by hiring some of the army of Germans who have constructed positive lists. It is unclear that these Germans could be sued under German law for producing positive lists for a foreign country (even if the same drugs are sold in both countries).

However it is dubious whether a published positive list would *by itself* improve health and end taxpayers contributing to ineffective, dangerous, exorbitantly priced patented drugs. After all, the decades of German reformers constructing positive lists ends with each new list constructed being shredded. The latest shredding was 2010. BigPharma helped in a decision not to open this Pandora's box, but instead to accept a cut of 17% in the price of all old (not new) drugs. It seems plausible that even if a positive list were published in the US, BigPharma would persuade the US government to keep on having Medicare and Medicaid pay for their ineffective, dangerous, exorbitantly priced patented drugs.

A positive list *acted on,* as under the NHS (the UK National Health System) is a big step forward. It is however not enough, as the UK Royal College of physicians bemoaned in 2010. The list is neither stringent enough, nor is it feasible with firms lobbying to get health research and treatment beneficially focussed. Further, the UK's positive list is being steadily eroded by factors such as the current British government's "cancer fund" to side-step the NHS's veto on stratospherically ineffective cancer drugs essentially unchecked for their adverse effects.

How do we end taxpayers contributing by direct subsidies, indirect subsidies and other measures to such demerit goods, as may be around 99% of prescription drugs in Germany and the US? How do we rescue government budgets from their escalating prescription drugs out-payments? Pope forthcoming presents the scope for a winning reform coalition that beneficially re-deploys the armies currently employed in commercial drug trials and the even larger armies currently employed by pharmaceutical firms as detailers (persuading clinicians,

[26] This is analogous to the law-suit now under way in the US that its country's Food and Drug Administration is infringing the free speech of the patent drugs firms. It allegedly infringes free speech by attempting to bar what it deems misleading and life-endangering advertising to clinicians and to the public at large for many patent drugs. It might be thought that these German insurers should have won the case because the patented pills industry is very far from perfect competition and countervailing power by the health insurers would be highly desirable.

some by talking, some with small financial inducements, others with massive ones, to prescribe the firm's set of patent drugs).

7. The interwar years following the private finance sector bubble

The damage from the 1920s private sector financial bubble did not end with that bubble starting to burst in 1929. The 1930s indicate that the waste from unproductive private sector financial expansion could be followed by over a decade of damage from exchange rate floats, by the freezing up of international capital and trade flows (such that even today, international capital market are less integrated than early last century), and the risk of jobs-generating dictators gaining power. A grand world war could reduce the payback period down from half a century to about a mere decade. Employment in the two big countries most devastated by the 1929 financial markets crash, the US and Germany, was restored by redistribution of income away from the very rich, and by preparations for, and participation in, a world war.

As regards the US, Robert Gordon and Robert Krenn (2010), however, document that it was only 18 months before Pearl Harbour (almost mid 1940) that armaments build-up became a massive fiscal stimulus in the US, citing reports such as the below:

> "National Defense has become the dominant economic and social force in the United States today. It has created a new industry – armament – the ramifications of which will reach into every phase of our business life, and bring increased employment, higher payrolls, widening demands for machinery, and the construction of new factories." *Business Week* June 22, 1940

The result of delayed and inadequate fiscal stimulus was that in 1939, in the US the number unemployed was still around 6 times that of 1929, whereas by then Hitler had reduced Germany's number of unemployed to 1/10th of its 1929 level. See Tables 2 and 3. Indeed it can be seen from these two tables that the US only reduced its number of persons unemployed below what it was in 1929 by 1943. With demobilisation (fiscal stimulus withdrawal), by 1946, the US rapidly suffered a trebling in its number of unemployed.

Table 2 Hitler elected 1933
thousands unemployed

	US	Germany
1929	1,550	1,899
1930	4,340	3,076
1931	8,020	4,520
1932	12,060	5,575
1933	12,830	4,804
1934	11,340	2,718
1935	10,610	2,151
1936	9,030	593
1937	7,700	912
1938	10,390	429
1939	9,480	119

Table 3 War then Demobilisation
thousands unemployed

		US
war		
	1940	8,120
	1941	5,560
	1942	2,660
	1943	1,070
	1944	670
demobilisation		
		US
	1945	1,040
	1946	2,270

Sources: http://www.dhm.de/lemo/objekte/statistik/arbeits11b/index.html;
http://www.census.gov/statab/hist/HS-29.pdf

8. Averting a collapse like that of the interwar years

Economists may aid in averting a repetition of this war rescue 1930s scenario with concomitant dictatorship risks as in Keynes' 1920 forecast of the rise of Hitler. This danger is not entirely absent today when some countries are suffering extreme unemployment rates. Economists may aid in averting such a repetition if they include in their analyses major stylised facts such as:

- the pre-eminent role of fiscal, not monetary, stimuli in the US finally recovering its real GDP before its 1929 financial crash
- the risk of job-creating dictators arising,
- how wasteful private sector bubbles (cancers) damage growth, health, law and democracy
- the damage that exchange rate movements cause, and
- the danger of a global meltdown in inter-currency bloc capital and trade flows if central banks fail to cooperate in the (historically extraordinary) manner in which

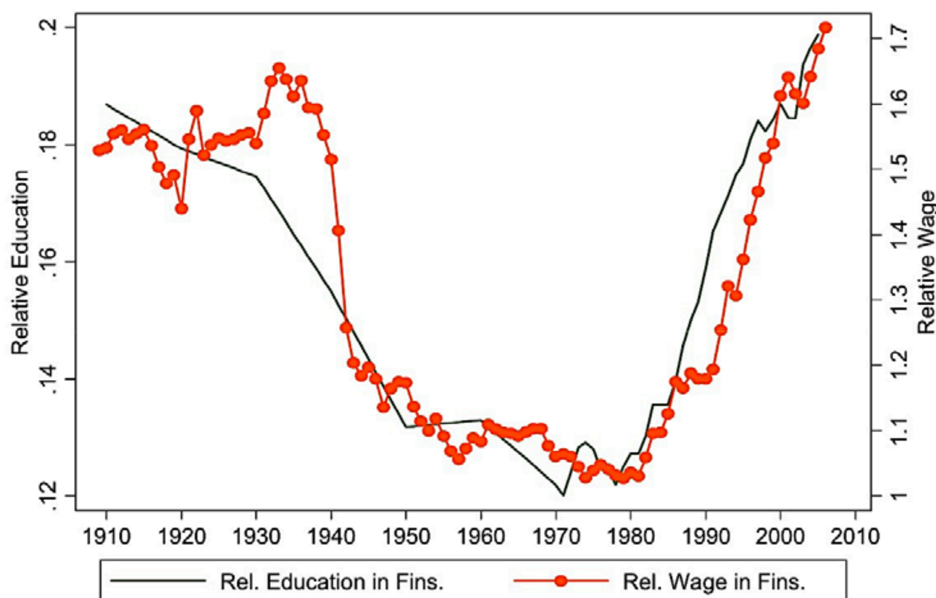
8.1. Excisions plus replacement stimuli

As regards the stylised facts of private sector wastage, new regulations should surgically and quickly prick the bubbles – promptly excising the malignant tumours in the finance and pharmaceuticals sectors. In a round table discussion at Vallendar Business School's Campus for Finance New Year's Conference 2011, upper echelon financiers including, Brady Dougan (heading Credit Swiss), agreed that the finance sector remains overblown three years after signs of the crisis emerged. The sector needs to contract, they suggested, to a half or a quarter of its current size (though others outside the sector, arguably with a more objective perspective, see a bigger drop required).

At the same conference, on the matter of a drop in inflated bankers' salaries, Axel Weber, since nominated as the incoming CEO of UBS, noted in answer to a question from Robin Pope, that it took a good 7 years after the 1929 crash for US bankers' salaries to start falling toward levels more comparable with their revealed productivity. In discerning bankers' productivity, Thomas Philippon and Ariell Reshef (2008, 2009) take the conservative benchmark that banker's actual productivity corresponds to others with comparable education and employment risks in each year between 1906 and 2006,[27] Figure 1.

[27] This is conservative as excessive bankers' salaries generate copycat excessive salaries in the upper echelons of the rest of the economy. For the key graph arising from Philippon and Reshef's data, and associated analysis of the banking sector's future, see David Rhodes and Daniel Stelter (2012) and Stelter (2012).

Figure 1: Relative Wage and Education in the Financial Industry



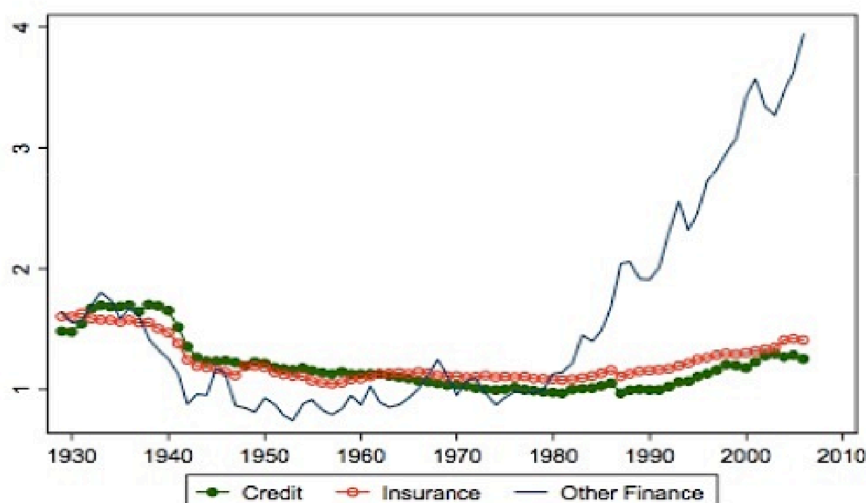
Notes: Fins. includes finance and insurance. Our concept of education is the share of employees with (strictly) more than high school education. Education (1910-2005) is computed from U.S. Census data, and from the Current Population Survey. Relative education is the difference in educated shares between Finance (Fins.) and the Non Farm Private sector. Wages (1909-2006) are computed from the Industry Accounts of the U.S., Kuznets (1941) and Martin (1939). The relative wage is the ratio of wages in Finanace (Fins.) to Non Farm Private wages.

Source Phillippon and Reshef 2008, p48.

From Figure 1, it can be seen that at the beginning of the 1920s financial bubble, bankers' incomes jumped to be dramatically excessive, and kept escalating relatively until the US banking crises of 1931. By 1931 bankers' salaries were above their productivity by 30%, and took many years to decline at all significantly, only becoming non-excessive by 1945. The excess payments to those in the banking sector in the more recent financial bubble have been even more extreme. Payments were by 2007, 40% above productivity in the financial sector overall.

In the lead component of the financial sector, salaries were in excess of productivity by many multiples of this. See Figure 2 where it can be seen that the engine of inflated salaries is the category "other" (investment banking – Lehman Brothers, Goldman Sachs and so forth). From the beginning of the 1980s, this category rose first and created the contagion throughout the finance sector (and through the upper echelons in the real economy). In this other (investment banking) category, salaries were comparable to non-farm jobs in the real economy in 1980, but had risen to be 350% of their productivity by 2007.

Figure 2: Wages of Financial Subsectors (1926-2006).



Notes: Ratio of average wage per full time equivalent in the sector to average wage in the non farm private sector. Source: Author's Calculations and Annual Industry Accounts of the United States.

Source: Phillippon and Reshef 2008, p49.

The private financial sector in the 1930s and first half of the 1940s demonstrated how wastefully slowly it shrinks its own bubble level salaries. To judge from what happened in the prior 1920s financial bubble, taxpayers might need to wait almost 15 years for the excessive banking incomes and the ultra-excessive investment banking incomes to substantially evaporate. Transferring talent out of the financial bubble sector into societally valuable avenues is occurring, enhancing national productivity, Tett (2009), but more transfers are needed.[28] It is wasteful for governments to delay the private financial sector rationalisation and continue to permit as tax deductions salaries up to 350% of their efficiency. Governments can then afford salaries for financial regulators comparable to the salaries of those being regulated, ending practises such as the regulated providing lucrative sequel jobs in exchange for soft regulation.

Note that as regards the financial sector, it is not merely outside commentators who recognise that bankers' rewards have been excessive and that this private sector bubble constitutes a waste termed by some, including Paul Krugman (2008) and the *Financial Times'* Martin Wolf (2010), a great big Ponzi scheme. The scale of the waste is likewise recognised and admitted publicly by the very upper echelons of private finance, implicitly begging for regulation to reign in their destructive anti-social activities with an orderly shrinkage and redeployment of talent.

A comparable, or arguably more drastic, trimming of the patented prescriptions drugs industry is needed to enhance healthy choices. Pharmaceuticals however are far more complex and emotional than loans – even more emotional than loans for owner-occupied houses that risk foreclosures. Pharmaceuticals concern health and physical suffering, perceptions of life and death and commitments of health insurers on aids to citizens till death. Better regulations and better-enforced regulations of for-profit activities in much of this sector could succeed for a country populated by omniscient rational maximisers who care only for the good of their fellow humans. No country however has such a population, and while well into this millennium,

[28] Transferring talent out of the prescription drugs sector bubble has almost yet to begin, such are its continuing stratospheric salaries.

there has been progressive de-regulation of the financial sector, the same years have seen heroic highly varied efforts at better regulating patented for profit drugs trials and promotions. These have failed to achieve any enduring success, or even prevent a worsening of the wholesale distortion of people's choices away from healthy ones. A quite different approach is needed.

In summary, downsizing the cancerous components of the private sector financial and pharmaceutical sectors can ease the current taxpayers' burden of permitting as tax deductions the inefficient upper echelon compensation packages. When the financial bubble burst in 1929, it took until the end of World War II for the stratospheric salaries of bankers to decline back to what other white collar workers earned, Phillippon and Reshef (2008), Stelter (2012). Governments should not for the next 15 years continue to allow exorbitant payroll deductions to naturally evaporate.

Excising the cancerous components of the private sector would leave a vacuum, a wound of unemployment and non-education on healthy choices. The 1930s reveals that it is dangerous to wait for productive private sector activities to fill the vacuum that is left by this excision. It would be safer to adopt fiscal stimulus packages enhancing financially disinterested research, health, infrastructure, education, and the environment. [29]

It is unsafe and unproductive to fill the vacuum as in the 1930s – with armaments. Governments moreover are often too timid to undertake such socially and globally productive public sector investments. Governments have an excessive tendency to believe that they cannot get re-elected if they attempt to solve unemployment by long term badly needed productive investments – that the population only endorses government expenditure on arms, the only exception to small government granted by neoliberalism. This fear is exaggerated, and can be false, as Glenn Withers and David Throsby (2001) discovered. They interviewed Australian voters on which government programmes they sought to have expanded and which contracted, in each case showing them the implied increase or decrease in their taxes to keep the budget deficit stable. Voters wanted an increase in spending on the environment, health and some forms of education and expressed willingness to pay for it. Voters at the same time wanted a decrease in military expenditures.[30]

Socially and globally productive fiscal stimuli and reduced bubble sector salaries, are not the only policies needed to aid growth and health. These are aided by a democratic law-abiding society in which government is not hijacked by bubble sectors and others through an excessive concentration of wealth. In such countries one reason that government debt rises is simply because the upper echelons have such tax loopholes, being so in control of the government, as to pay no taxes.

Wealth should via tax be re-appropriated from the upper 1/4 of 1% who amassed most of the income gains over the last 40 bubble years. This is even admitted (stressing it is their personal view, not that of their employer), as the appropriate remedy by some top echelon bankers, e.g. Andreas Schmitz at the Vallendar Business School's Campus for Finance New Years' 2012 Conference. He did so after first presenting the financial sector view on wicked government sector debts, in answer to a question from Robin Pope. The wealth re-

[29] It will be safer yet if all non-environmental forms of fiscal stimuli are devised with an eye for not further damaging the environment as it is endangered through past growth from unprecedented population growth and other factors.
[30] See also Withers and Edwards (2001).

appropriation has three advantages: 1) justice as the remaining 99.75% ought not pay interest on government debt arising from private sector bubble wealth not yet spent, 2) restoring a cohesive democratic society with laws less manipulated by the campaign contributions and lobbying power of private bubble components, 3) boosting private sector aggregate demand without raising its indebtedness when in fact the overwhelming amount of the current debt overhang is corporate plus household debt, not government debt.[31] Boosting aggregate demand is pressing when otherwise the deleveraging private sector may need to save for the next fifteen years to return to viable debt levels, if the interwar years and Japan's experience in the last two decades delineate the damage of private sector deleveraging, Koo (2011). See also Rhodes and Stelter (2011).

8.2. Exchange rates

As regards the stylised facts on exchange rates, the horrors of the 1930s floats led to the Bretton Woods Agreement. Since that agreement's breakdown, a gulf has arisen between the real business sector suffering the horrors of exchange rate changes as in the 1930s, and academic economists who have become increasingly distanced from the real world, increasingly mesmerised by algebraic derivations. The gulf has arisen because the effects of exchange rate changes, in their multiple real and financial sector ramifications, are quite beyond the scope of algebraic and econometric techniques. This can be seen from the five glaring examples given earlier in this paper of disasters from exchange rate changes that are outside the average economist's vision.

These complexities can be captured to a greater degree in highly complex laboratory experiments. Such experiments can allow for the effects of personalities and their dynamic interactions, for the multiple different sorts of private and public sector agents involved in exchange rate determination. The experimental method avoids the necessity of making unrealistic behavioural assumptions for the sake of tractability such as maximising expected utility agents.

Complex experiments point to better macroeconomic management, with a statistically significant improvement in the maintenance of international competitiveness, with a single world currency, Pope, Selten, Kube and von Hagen (2008), Pope, Selten, Kaiser, Kube and von Hagen 2012. A single world currency can end the current risks to the US from switches in demand away from its currency to alternative currencies, the actual major risk for the US debt hampering the country's growth. The single world currency can in addition end economists making *unconscious* beggar-thy-neighbour exchange rate proposals that endanger economic cooperation, Pope (2009a).

The benefits from a single currency were recognised in the cases for currency unions of Courchene (1999), Courchene and Harris (1999), Grubel (1999), Grimes et al. (2000, 2001), Rose (2004) and Cooper (1984, 2006). They were also recognized in the cases made for a single world currency made in the wake of the East European and Asian currency crises of the late 1990s by numerous financiers, economists, politicians and journalists and journals, by the *Economist*, by Mundell (2003), by Bonpanasse (2006), by Teichrib (2008), by the Russian prime minister in his currency speech at the G8 meetings of (Media Resources) 2009, by the International Monetary Fund (IMF)'s Strategy, Policy and Review Department under

[31] Rhodes and Stelter (2011). This paper in addition furnishes a computation of a one-time financial wealth tax to get debt reduction to what the authors deem a viable 180% debt to GDP ratio in key countries.

Duttagupta et. al in its *Reserve Accumulation and International Monetary Stability of 2010*, and by the United Nations Conference on Trade and Development in its *Trade and Development Report 2010*. The benefits from a single currency also connect to the proposal for a world central bank forwarded by Peter Turkson and Mario Toso (2011) for consideration at last year's G20 conference, at which, dangerously, exchange rate cooperation – let alone the security of a single world currency – did not get even the degree of attention it had two years earlier.

9. Conclusions

Benefits from introducing a single currency and from shedding the bubble (cancerous) components of private sector prescription drugs and financial instruments offer ways of inducing growth. These ways have solid evidence to back them. This is in contrast to divining tipping points in government debt based on miss-specified estimating equations. They are mis-specified in that they ignore three of the biggest dents in growth over the last forty years, those from drastic unpredicted exchange rate jumps, and from the bubble components of the prescription and financial sectors.

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