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Public Debt Tipping Point Studies Ingnore How Exchange Rate Changes May Create A Financial Meltdown

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Public Debt Tipping Point Studies Ignore How Exchange Rates Changes May Create A Financial Meltdown

by

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PUBLIC DEBT TIPPING POINT STUDIES
IGNORE HOW EXCHANGE RATE CHANGES MAY CREATE A FINANCIAL MELTDOWN**

Robin Pope[1] and Reinhard Selten[2]

Lead sentences

The public debt may hamper US GDP say studies that estimate debt tipping effects as if there were a single world currency and so deflect attention from the risks of an exchange-rate-precipitated global meltdown, from the need to cut cancerous bubble activities in the financial and pharmaceutical industries, and the risk to democracy of high unemployment.

Abstract

The public debt may hamper US GDP say studies that estimate debt tipping effects 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.

These studies are misleading in other respects too. Their estimates of growth determinants implicitly or explicitly conflate the differential growth effects of government expenditures and with those of government debt. They 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. Policy should instead be directed to adequate employment-generating fiscal stimulus in a global downturn, to averting further damage from exchange rate liquidity shock by creating a single world money 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 Hitler, exchange rates, employment multipliers, private sector inefficiency, central bank cooperation, central bank conflict, public debt, tipping points, uncertainty, financial sector, pharmaceutical sector, World War 2, Korean War, fiscal stimulus

JEL: E6, F31, G01, H62, I18

Economists such as Burton Abrams, contend that the 2009 US fiscal stimulus package, contrary to intentions, may have reduced the country's GDP. They point to wastefulness in government activities and fear that any concomitant rise in public debt pushed the debt to GDP ratio above its “tipping point”, into a region where extra government debt damages growth. Their use of evidence however is flawed, and diverts policymakers from taking precautions against the US and the global economy suffering even more massive damage than occurred in the aftermath of the disorderly collapse of Lehman Brothers on 15th September 2008.

Their tipping point fears stem from a class of econometric estimates that are mis-specified in several respects, most dramatically in that they would hold only in a different world from that in which the US is located, hold only for a world in which there always was a single world currency. The upshot is that none of these tipping point studies includes as an explanatory variable the likely prime driver of reductions and reversals in economic growth, namely damage from exchange rate shocks.

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Nor does any include an adequate segregation of different components of government expenditures known to have radically different multiplier effects, nor for the state of the cycle (despite the fact that, apart from easement of bottlenecks), the multipliers must be zero at full capacity, but many are estimated as substantial when unemployment is considerable. Indeed in some of these studies, eg Carmen Reinhardt and Kenneth Rogoff (2010, 2011), government expenditures are not included as a distinct determinant of growth at all. That is, despite the well-established higher multipliers for many forms of government expenditures than tax cuts (that can be saved not spent), the differential multipliers of government expenditures over tax cuts tend to get treated as identical, collapsed, along with changes in interest rates, into the impact of the entity of the catch-all term, government debt. Finally, in depressions, the damage to society and risk to democracy spring primarily from unemployment. Thus output multipliers are partially beside the point. What is key are employment multipliers.

Further 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.

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.

For inferring a point beyond which more government debt reduces US growth, the most cited study is that of Reinhardt and Rogoff that portends a tipping point at a government debt to GDP ratio of 90% so massive as to halve GDP growth. But 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) further demonstrate, these spring essentially from the slowdown in the US at the beginning of the demobilisation after World War II (2011, p134). 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 unsatisfactorily plateaued out 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. 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 comprised primarily personnel and munitions in severely unemployed US and little change in tax scale with likely the following effects. The previously unemployed personnel spend 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 also employ previously unemployed people and to this extent have 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 gets rid of the contribution to the government deficit from munitions so that the government deficit would shrink 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

	World War II Armaments Stimulus						Demobilisation			Plateau		Korean War Stimulus	
	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
Real US GDP ($ billion)	1072	1166	1365	1617	1882	2034	2011	1791	1775	1853	1843	2004	2159
Public Debt / GDP	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 that World War II demobilisation contraction in US GDP as having any causal connection to a US tipping point whatsoever. It was rather a case of the normal post-war demobilisation depression. By cutting government the taxes earned previously by 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, that is impossible to invoke Reinhardt and Rogoff's tipping point econometric estimates at a threshold of 90% as having any pertinence whatsoever to the current US debt situation. It is perverse – false 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 relace the globally destructive mass armaments fiscal stimulus that occurs abruptly at the end of any war. Thus the GI bill of 1944 and other peaceable fiscal stimuli were inadequate. The full recovery came only with another wartime fiscal stimulus, that of the Korean War.

Some other tipping point studies infer a lower government debt threshold than 90%. Indeed (even if 2% seems transparently to be too tiny a reduction in GDP to report after allowing for any estimating margin of error whatsoever), Reinhardt and Rogoff propose that there is evidence of a 2% reduction in growth whenever a country's debt to GDP ratio exceeds 60% and thus might seem of potential relevance However the pertinence of any tipping point debt threshold estimate in any of these studies is voided by their other flaws.

EXCHANGE RATE DAMAGE

The prime flaw is that these 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 Reinhardt and Rogoff is that in omitting the fact of multiple unpredictably massively realigning currencies, they are not omitting an impediment to growth.

Real world exporters, importers, borrowers and lenders remain flabbergast that any policy influential economist can hold such a view when it is so patently in conflict with the stylised facts. Any serious grappling with the global financial crisis and its future risks pertaining the Euro through its higher than average publicly indebted members – and to the US from contagion effects – requires that economists enter the real world. It requires recognition by economists of the scope for exchange rate movements to generate a global meltdown. This could have resulted

from conflicted nationalistic central banks failing to use sufficiently cooperatively central bank swap offered by the US Federal Reserve, something that mercifully did not happen in the crucial twelve months beginning in December 2007. Such recognition is infeasible until economists quit their faith in the benevolent restorative properties of exchange rate changes.

The widespread faith amongst economists that exchange rate liquidity shocks are equilibratingly beneficial is often supported by selective beginning and end period data of a country smashed by a massive exchange rate depreciation, and then from its ultra low GDP growing for a few years more rapidly than its neighbours. In the selective short-term perspective praising any such transient beggar thy neighbour effects that are spotted as if they must be beneficent equilibrations, the praisers rarely take a long enough perspective to notice that the devastated country that depreciated typically never recovers its comparative GDP ranking.

Other economists avoid use of misleading beginning and end point data to bolster their case, but still declare 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 rate, 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. Australia (like New Zealand) has faced exchange rate risk premia relative to other rich democracies pushing its interest rates 4 to 10 times above those of other rich democracies. Reinhardt 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.

More plausibly, like most economists, Reinhardt and Rogoff are unaware of the actualities of exchange rate risk premia. This unawareness can be inferred from the international economics text of Maurice Obstfeld and Kenneth Rogoff (1997) (that is essentially the pre-requisite of being an international macroeconomist). Uncertainty is introduced, only about half way through the text, and then as if for traders in goods, services and capital, there were a single world currency. The costs of exchange rate uncertainty, including exchange rate risk premia for borrowing countries, are left out of sight so as to allow the graduate student to grapple with tractable maximising problems. 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).

Exchange rate risk premia, drastic as they are in raising borrowing costs, not by 1%, not by 10%, not by 100%, but for Australian businessmen 4 to 10 times that of many rivals, 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 exchange rate risk premia, there are fundamental supply and demand factors that have massively desirable impacts. But as the survey of 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 short, all exchange rate changes are unpredicted. No pertinent supply-demand fundamentals have been discovered. Beneficial equilibration is resoundingly empirically disconfirmed. Confronted with the disconfirmation, most economists switch to asserting that exchange rate changes are harmless, since 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 that began occurring in the 1970s and slowed growth in many advanced countries in the later 1970s, the 1980s and in some also in the 1990s.

Equally important are the capital flows and wealth effects of exchange rate changes. A focus on consumer price indices ignores how exchange rate changes randomly, arbitrarily, inefficiently:

shift wealth between countries,

send businesses and governments broke, and

generate massive losses for taxpayers.

A few examples paint the picture of these unpredictable nasty shocks following the demise of the Bretton woods pact for exchange rate stability and its concomitant steady growth in rich democracies.

Example 1

There was the tripling of the price of oil twice in the 1970s as Arab retaliation for the US 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) on a short term (three month roll-over basis), as itemised by Paul Volcker. 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 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 creating extreme hardship even in advanced economies, and sent much of the Third World into bankruptcy.

Example 2

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

Example 3

By the late 1990s, the collapse of the rouble in the late 1990s 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 4

The abrupt rise in the US dollar following the collapse of the dotcom bubble and of the scope for international borrowers to rollover their US debt put giant multinational real sector firms like Pasminco into bankruptcy and 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 5

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.

BLINDNESS TO EXCHANGE RATE DAMAGE

None of the damage from exchange rate changes listed in any of the above five 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 beginnings of the crisis on account of the endemic closed economy modelling practised by central banks. Thereby they lost 7 months of opportunities for 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 as only beginning when interbank lending contracted sharply early in August 2007 on release of information that key hedge funds of a big foreign bank were in trouble.

In response by December 2007, 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, the chair of the US Federal Reserve Board's 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 in 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.

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 could anticipate the political ire (that ire erupted 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). Ben Bernanke's introduction of TAF (available to some foreign banks) and of 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.[3] As the foremost massive *unpredictable* damage wreaked on trade in goods, services and capital,[4] exchange rate changes arising from central bank cooperation and competition during 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.

OTHER GROUNDS FOR NEEDING 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. 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

[3] Thus as the crisis receded, Linda Goldberg, Craig Kennedy and Jason Miu detail how many central banks selected less competitive rates at which 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.

[4] 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!

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.

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. 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.

1 THE DRUGS BUBBLE

In virtually every western country, taxpayers subsidise new drugs being invented through university research funds, taxpayers subside their commercial trialling, taxpayers subsidise these taxpayer funded discoveries being patented by firms, taxpayers subside their write-ups in medical journals, and tax-payers subsidise the patented drugs then prescribed by clinicians on the basis of these medical publications and drug information supplied by the firms who control both their initial education on drugs and their updating courses for continued medical certification. 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. Whiles virtually every month, a new book is published with a fresh itemisation of the waste to human health and citizen's budgets, and a fresh reform package boldly introduced by a daring politician, to date none has succeeded in substantially denting the wastage. Being a health minister seeking to reduce the wastage is one of the most unenviable posts for any aspiring politician.

2 THE FINANCE BUBBLE

The bubble nature of much of the growth in the finance industry became apparent in the aftermath of the collapse of Lehman Brothers in September 2008. As with the drugs bubble, in its build-up years, those seeking to get the wastage excised faced censure, vilification and worse. Its damage cannot be estimated yet, since it is unclear currently 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.

If the 1930s are a guide, the waste from unproductive private sector financial expansion could be sequelled 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), the risk of jobs generating dictators gaining power, and a grand world war is needed to 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 also 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, the US still had unemployed around 6 times those of 1929, whereas by then Hitler had reduced Germany's number of persons unemployed to 1/10th of its 1929 level. Indeed the US only reduced its number of persons unemployed below what it was in 1929 by 1943. With demobilisation (fiscal stimulus withdrawal), then the US rapidly suffered a trebling in its number unemployed by 1946. See Tables 2 and 3.

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		
	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

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, a danger not entirely absent today when some countries are suffering extreme unemployment rates. Economists may aid if they include in their analyses the major stylised facts. These include 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, of wasteful bubbles (cancers) in the private sector, the exchange rate damage that ensues from free floats, and the danger of a global meltdown if central banks fail to cooperate in the (historically extraordinary) manner in which they did through the most critical months of 2008.

1 EXCISIONS PLUS REPLACEMENT STIMULI

As regards the stylised facts of private sector wastage, economists need to assess the extent that new regulations can surgically prick the bubbles, cut out the malignant tumours in the finance and pharmaceuticals sectors. In a round table discussion this year at Vallendar's Campus for Finance Conference, upper echelon financiers including, Brady Dougan heading Credit Swiss, all 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 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. Thus as regards the financial sector, it is not merely that outside commentators perceive 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.

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 than loans for 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, 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.

Downsizing the cancerous components of the private sector financial and pharmaceutical sectors can ease the current tax payers' burden of permitting as tax deductions the inefficient upper echelon compensation packages. Excising their cancerous components would leave a vacuum, a wound of unemployment and non-education on healthy choices. The 1930s reveals that waiting for productive private sector activities to fill the vacuum is dangerous. It would be safer to adopt fiscal stimulus packages enhancing financially disinterested research, health, infrastructure, education, and the environment.

2 EXCHANGE RATES

As regards the stylised facts on exchange rates, the horrors of the 1930s floats led to 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 equations yielding closed form solutions. 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 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 highly 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 forthcoming. 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 (2009).

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), and 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, by Mundell (2003), by Bonpanasse (2006), 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 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*.

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, in contrast to divining tipping points in government debt from mis-specified estimating equations, mis-specified in that they ignore three of the biggest dents in growth over the last forty years major those from multiple currencies heaving currencies around, and from the bubble components of the prescription and financial sectors.

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September 24, 2008 Arrangements with Reserve Bank of Australia, Denmark's Nationalbank, Norges Bank, and Sveriges Riksbank

September 26, 2008 Federal Reserve and other central banks announce operations to address funding pressures over quarter end

September 29, 2008 Federal Reserve and other central banks announce further coordinated actions to expand significantly the capacity to provide U.S. dollar liquidity

October 13, 2008 Federal Reserve and other central banks announce further measures to provide broad access to liquidity and funding to financial institutions

October 14, 2008 FOMC authorizes an increase in the size of its temporary reciprocal currency arrangement with the Bank of Japan

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