

TAMRIS  
Consultancy:  
Capitalism  
in Crisis 4

December 15

2010

---

A look at the structural global issues impacting growth and risks to growth, and the importance of quantitative easing within this framework.

**“Depth dynamics: debt, GDP, world trade and quantitative easing”**

# Foreword

---

We need to be aware of the complex financial and economic relationships of our time, and not just market movements, valuations and economic indicators that often obscure what is really happening.

Just being aware that economies are in recession, or growth, or strong growth, or rising inflation, or falling interest rates - all data points which tend to have reflexive portfolio actions - is insufficient to fully understand the actual relationships that drive returns and risks over time.

What happens in markets and is reflected in economic indicators, at a point in time, is often several times removed from the underlying currents that drive change. Herd actions, amplified by leverage and excess asset focussed money supply growth, can be magnified and distort the relationship between price and the fundamentals of the underlying gears.

We need to conceptualise what are often complex evolving forces and their interrelationships beyond the simple (and often out of context) linear interpretation of their past relationships in order to build dynamic interpretative models of financial and economic relationships. On the one hand, changes in depth dynamics tend to be slower and longer term than the changes we see on the surface (prices and relative demand/correlation), while on the other hand long term depth dynamics that have established their existence and stability in the date are often changing both direction and momentum and their place as a driver of change: humans are slow to see and slow to adjust to change; by the time long term under currents are reflected in asset prices and economic data (robust relationships that "can" be relied on), the model has subtly changed course and dynamics are moving apart, developing the stresses that will show up in asset prices in years to come.

Part of the problem we have today is that most models of the real world are out of date: they are also static in that they assume equilibrium and ignore the dynamics that drive change over time.

It has also become easier and fashionable to prove relationships via statistical time series data (and the numerous techniques that aim to make the model fit the data and vice versa), rather than attempt to assess complex dynamics.

There is too much financial and economic analysis of current price action and isolated out of context analysis of economic indicators: where the money is moving at the moment seems to be more important than what will drive price movement in the future and what has happened in the past is more an important driver of extrapolation. How often do you read an analysis that verifies a situation by looking at an out of context historical comparison or ignores a large number of relationships that would impact their analysis?

The following analysis aims to look at the structural fundamentals and evolving relationships that underpin current global financial and economic risks. The economic crisis that started in the late 1990s and boiled over in 2007 is still evolving.

# Contents

---

Introduction .....	4
Dynamics of Quantitative Easing .....	7
Objective of QE .....	8
QE, carry trade and speculation .....	8
QE risks and circularity of global structural economic imbalances .....	9
US economic risks .....	10
US debt and the consumer .....	10
Repaying debt .....	14
How much real growth can we expect from the US economy? .....	14
Personal consumption expenditure: .....	14
Gross fixed capital investment: .....	15
Exports: .....	15
Government expenditure .....	16
Export growth scenario .....	17
Debt repayment scenario and dynamics .....	18
Historical relationship: US total debt and GDP growth .....	20
Current situation .....	20
UK structural risks .....	22
Europe structural risks .....	25
Germany .....	25
Euro Area – current data .....	26
Debt in the Euro zone .....	26
Japan: the benchmark for structural risk .....	27
Developing, emerging and Asia .....	31
Debt in Asia .....	32
Asia concerns .....	33
Latin America & Canada .....	35
World trade .....	36
Conclusion/summary .....	38

## INTRODUCTION

Despite what looks like a gathering but slow recovery in the US, strong recovery in Asia and weakness (PIGS) and strength in Europe (Germany, Austria, Netherlands), all is not well. The world's economy and financial system is exposed to a set of circumstances that could easily precipitate a further period of turbulence.

We have a number of significant issues to deal with:

- ✚ Global economic structural imbalances remain and have developed further in many respects: China in particular has run up not insignificant debt and structural economic imbalances since the onset of the crisis, which has in part helped pull the developed world out of the most recent shock.
- ✚ Asia and exports to Asia would appear key to a successful resolution of developed economies' structural imbalances; yet arguably, Asia has never been so exposed to its dependence on trade with the developed world (note the very large above trend increase in world trade between 2003 and 2007 that paralleled debt fuelled consumption around the globe). It is unlikely that pre crisis export growth levels will return post the initial high growth rates associated with recovery. High levels of gross fixed capital investment being made in many developing and emerging markets may also weigh given that a) GFCI was based on a different growth composition and trajectory and b) particularly in China, much of GFCI represented a large one off capital injection to support economies during the 2008 to 2009 crisis.
  - Developing market economies are still heavily dependent on demand from the world's developed economies and may now also be exposed to the heightened risks of their own business cycle: inflationary risk in China, India, Latin America (whose main exports are commodities and again whose region's growth has expanded significantly during the 2003 to 2007 window) and excess capacity risks posed by what are massive amounts of capital investment. Cyclical economic risks "apparently" do not exit in Asia!
  - World trade is particularly exposed to weakness in developed economies' domestic demand: as the hub of such trade, the developing economies of the world have responded to economic recovery with further significant capital investment. The significant structural economic imbalances that existed prior to the crisis and helped set the scene for the crisis remain, and so do the significant excess foreign exchange reserve holdings in key economies. The strong recovery of developing economies has been important to the recovery in industrial production across the globe.
- ✚ Domestic economic structural imbalances in the US remain and have become exacerbated in Europe: in fact financial imbalances have become worse as total debt in developed economies has further increased post the onset of the crisis in 2007 (and have increased in developing and emerging economies albeit to less extreme levels), while unemployment and output remain significantly higher and below pre crisis levels respectively. With capital and labour both underutilised, two key components of growth remain seriously impaired.
  - Economic imbalances remain: too much capital investment in key developing economies; too much consumption in key developed economies.
- ✚ The world's financial system remains exposed to continuing deleveraging as the debt and corresponding asset valuations, developed over a long period of time, still threaten to come back through the financial system (and now the markets given the increase in government debt): Federal Reserve quantitative easing is arguably intended to support asset prices and associated debt, and government fiscal policy, and hence financial system stability, until nominal GDP growth reduces total debt to lower levels.

- ✚ In a number of economies, the main expenditure components of GDP growth, unless their debt components are increased, are unlikely to be able to deliver significant real growth for some time (consumer, government, domestic focussed gross fixed capital investment) and growth will be dependent on the ability to increase net exports at rates which would imply a vibrant global economic expansion. The low real GDP growth rates (possibly even negative) will expose economies with high debt levels and prolong the time it takes for these economies to adjust debt to GDP ratios downwards; a downward debt deflation spiral cannot be ruled out if nominal growth is weaker than expected and higher interest payments on debt force fiscal austerity and debt repayment.
  - Economic recovery has been supported by massive fiscal and monetary intervention, especially in the US: personal incomes, consumer demand and the recovery in industrial production post crisis have all, to a large extent, been reliant on this support; support for housing, support for cars (remember cash for clunkers and financial support for the car markets), support for unemployment and support for the debt markets (in particular the mortgage markets and banks).
  - Recovery and growth in the developing world and heavy exporting economies of Germany (indeed, Germany has been behaving more like a synthetic developing/emerging market economy) and Japan has depended to a large extent on domestic demand support and quantitative easing: recovery has been built on a level of demand which cannot be sustained relative to the level of output that can be consumed without adding to current debt levels.
- ✚ Further quantitative easing (note quantitative easing is global and has already impacted asset prices) will risk further magnifying investor uncertainties: asset allocation decisions with respect to how much cash investors want to hold in portfolios can significantly affect asset prices, especially assets which occupy a relatively small part of the investment universe. Low interest rates will further encourage asset focussed leverage and hence speculative money flows. In a world where relatives are uncertain, absolutes and valuations and risk become important focal points for asset allocation.
  - We are entering a new phase of the asset bubble cycle that we saw introduced in response to the Asian and LTCM crises of the late 1990s: we are being brought back closer to the brink, to the conditions that existed pre crisis, hoping for a different exit.
- ✚ The world's population is aging: for the world's developed economies this means higher potential government liabilities or reduced fiscal expenditure, exacerbating current total debt or consumer demand issues. Demographics impact debt and domestic demand.

The wealth management industry has many difficult decisions ahead of it. In the 1990s the investment industry moved more and more towards an efficient market view of the world, and valuation based investing came under pressure as large cap growth telecom, media and telecommunication stocks pushed indices higher, and the global business cycle became "more stable" with longer growth phases and shallower recessions. Since the developed markets peaked in 2000, we have had quite the reverse. And, yet, there is still a large risk that we are approaching a darker denouement, an end to the false financial renaissance of the decades leading up to the crisis.

Asset allocation, mean variance and Monte Carlo replaced valuation based risk management and post the 2000 to 2002 bear market, more sophisticated hedge fund and risk management based investment products took centre stage: risk could be sold off, rising costs and valuation could be ignored, and mathematical models that presumed anything but the building up of structural imbalances led the financial world.

We remain firmly entrenched in a period of significant structural, economic and monetary financial imbalances that are far from the averages and normality upon which you can safely assume long term stable covariance and return relationships. We remain in a situation where analysis of the fundamentals of economies and companies is vital to understanding, measuring and managing risk.

How do you manage a portfolio with heightened latent volatility, low returns and great uncertainty? High risks and great uncertainties require a more fulsome understanding of valuations and risks to those valuations. No longer can we rely on models which average the past and assume efficiency.

## DYNAMICS OF QUANTITATIVE EASING

Investors and consumers are being asked to place their faith in central bank manipulation of assets prices, investor confidence and asset focussed money supply.

Asset price setting in the presence of monetary manipulation may not result in prices that accurately reflect the risks and returns of those assets. In the short term, rises in asset prices will most likely provide stability to the financial system via greater confidence in markets, leading to consumer and corporate confidence to spend and invest, but risks remain: high debts; ability to grow net exports; developing and emerging market economies ability to increase consumption as a proportion of GDP; sensitivity of global GDP to volatility in world trade.

Quantitative easing, while helping confidence, has added many elements of uncertainty into the current equation. Quantitative easing is where a central bank buys up assets in the market place with newly created money. At a point in time this increases the supply of money in the market place while reducing the supply of marketable assets (they still exist, but they have effectively been taken out of the market place): at the transaction point there is no change to the amount of equities or bonds or other assets in the system, but the amount of money changes. Quantitative easing does not need to result in loan growth (money multiplier) in order to impact the financial system.

The impact of QE is threefold:

1. First of all by increasing the market's cash allocation, the market is forced to reassess its optimal cash allocation. An attempt to reduce the cash allocation will raise the prices of assets to the point that cash as a % of assets falls to the desired level. While assets with large weights in the market portfolio will be less affected (potentially) than assets with small weights in the market portfolio, it only requires a small adjustment in the preferred portfolio cash holding to impact asset prices significantly.
2. Secondly, by restricting the availability of assets in the market place (assets bought by central banks are taken out of circulation) it reduces the number of assets available for purchase, making it more likely that asset prices will rise in response. It results in an asset price squeeze: the lower supply of assets increases the likelihood of asset price appreciation.
3. By increasing the stock of asset focussed money supply it also risks influencing the growth rate of money supply over the short term: by risking a further expansion of debt (and demand) the upper and lower boundaries of short term GDP growth and ultimate downside risks could widen. By appearing to reduce risk and influence nominal GDP growth, we may actually exacerbate the risks to future growth: asset prices will react to these risks, as they evolve, over the course of the next few years.

Usually, as money supply expands at a rate over and above nominal GDP growth, it moves into assets (broad money supply growth above real GDP growth splits into consumption and assets): QE is a method of expanding broad money supply growth in reverse: asset prices to consumption to broad money supply. If you believe in supply side economics, then ultimately QE will not affect real economic growth and will not ultimately alleviate the real structural dynamics underpinning the need for QE. What it will do, is distort asset prices and the distribution of nominal GDP growth over time, possibly impairing output growth via the increased potential for shocks to the financial and economic system.

There are also a number of vitiating factors that may limit the impact of QE:

- Debt and equity issuance may negate the portfolio impact on asset prices: in other words supply increases to bring back cash to preferred allocations. If QE is also intended to stabilise the financial system so that governments can continue to support economy via fiscal expenditure, then QE is a way of directing money supply from assets to economic activity. In this scenario it is plausible that investors would require higher bond yields to account for higher government debt.
- Leverage ex ante quantitative easing may be reduced post quantitative easing. This is not just about the reaction of the market to the initial QE announcement: it deals with the reaction to the point at

which QE stops; QE effected over a period of time leads to expectations of demand for assets over a time period, which means that the impact on assets will change as amount of prospective QE declines. QE lends an aspect of certainty to the demand and hence pricing of assets.

- International investors may start to sell the QE country's domestic assets, which merely swaps ownership of assets and fails to change the demand for assets, leading to a decline in the QE currency and a rise in non QE currency. If foreigners sell assets and move out of the QE country market, the asset focus of domestic money supply falls: this could then again obviate the impact of QE on asset prices.
- Leveraged institutional players may either enhance the impact of QE (by borrowing and leveraging asset positions) or reduce its impact (by deleveraging and reducing such positions). In the early phases of QE, leverage is more likely to expand and in the latter to decrease.

QE is typically a last resort attempt to stimulate economic activity and occurs because of a failure of the banking system (unwilling to supply) and the economy (unable or unwilling to demand) to generate broad money supply growth (deposits to loans to deposits to loans etc).

## Objective of QE

The objective of QE is to support debt (and hence the financial system and mechanisms governing money supply expansion) via support to asset prices: support to asset prices should enhance confidence in the economic and financial system, a confidence which may support lending, investment and consumption.

QE on its own cannot drive real GDP growth because all it involves is a mere exchange of assets for money: overall wealth is not impacted unless people invest and spend more.

In other words, QE is a holding exercise designed to support the key functions of the financial system so as to enable nominal GDP growth to reduce the value of total debt relative to GDP. It implies that there is a significant risk to real GDP growth potential being below historical averages.

Debt deflation cycles are caused by an extended period of asset focussed money supply growth that increased the value of assets and debt relative to the ability of potential GDP growth to support that debt. Once a credit and asset boom bursts, asset values fall, debtors default, and economic activity and money supply contracts.

The existence of a QE policy is in an admission that asset prices and debt levels are still out of equilibrium and that a move towards equilibrium over too short a period is a risk to the system itself.

## QE, carry trade and speculation

QE encourages carry trade: the carry trade risks transferring the asset price impact of QE to international markets: if you know interest rates in a country are going to be kept low and that authorities will do all in their power to keep interest rates low, then you can borrow in the QE currency and invest in higher yielding assets in other countries. If that currency falls, then the value of debt in that currency relative to other currency falls and the price of assets denominated in international currencies more likely to rise.

QE may also encourage those who already hold domestic assets to sell those assets in response to the perceived inflation and currency risks. Such would cause the currency to depreciate in value as supply of the currency rises and demand for the currency falls. This would enhance the allure of carry trade debt positions.

As discussed above, QE expands the range of economic and financial outcomes over the short term: the potential highs and the lows of asset class returns could well be wider, encouraging sophisticated short term speculative activity. For those caught up in leveraged trades, this could be both a very profitable and very risky period: hedge fund investors need to beware; for less active investors, care and attention needs to be paid to relative and absolute valuations and costs.

QE is effectively a green light to speculation and a period of asset pricing that reflects short term demand and supply issues than longer term fundamentals.

## **QE risks and circularity of global structural economic imbalances**

US, Europe and Japan are all heavily in debt (total debt relative to historical debt levels): the US has excess consumption and needs to export more, Japan insufficient consumption and a chronic debt deflation problem and needs to maintain exports, while Europe is split between those economies that need to export more and consume less and those that need to consume more but are exposed to export risks (Germany); developing and emerging economies on the other hand have economic infrastructures dependent on export led growth and consumers who are not yet ready to support global demand by spending on developed country output to a much greater extent. Many developing economies have developing bubbles of their own, and are not immune to short term domestic economic risks.

The risk is that QE will push developing and emerging asset prices and currencies up causing QE balance of payment deficit countries' currencies and asset prices to decline.

Developing and emerging economies' export goods will become less competitive; developed economies may look to import substitution, thereby exposing developing and emerging economies output which will need to shift towards domestic consumption (difficult). What will support developing/emerging economy consumer income that is dependent on exports so that it can be redirected towards domestic consumption and foreign imports? More government debt in developing/emerging economies?

There is a) a 2, 3 to 5 year transition period here that is a large unknown and b) an unknown about the magnitude of the transition effect itself: Germany and Japan are two major developed economies that have long depended on exports for growth: between 2000 and 2008 net exports accounted for 39% of real GDP growth and the personal consumption expenditure 47% of real GDP growth. If two developed economies are incapable of shifting towards a consumption model, how will Asia and other developing and emerging economies.

QE in effect highlights the risks of what are still significant structural global economic imbalances. Attempts to make developed world exports more competitive will impact the ability of developing and emerging economies to import from developed economies for domestic consumption: the state that led to the crisis is being relied on to avert a further crisis.

If QE2 fails and the US economy deteriorates, bond prices will need to reflect the risk of default as deflation contracts economic activity and raises the real value of debt. QE may therefore be a recognition by the Federal Reserve that an economic tipping point has arrived. It is the view of this report that deflation remains a real risk and that QE is a necessary evil.

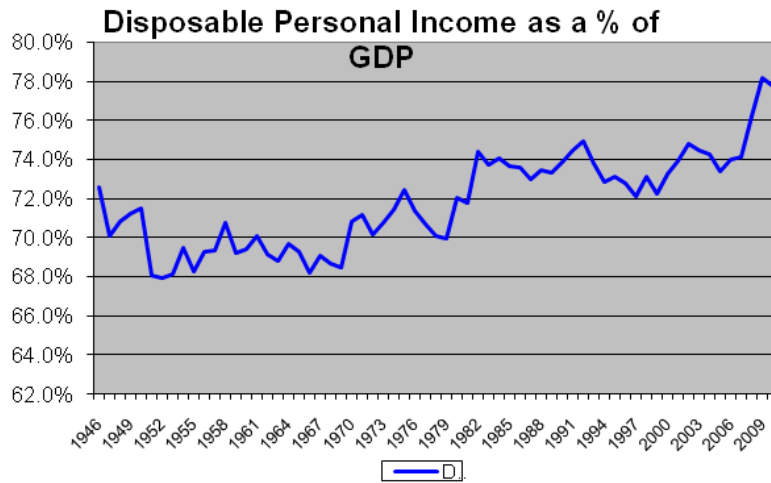
# US ECONOMIC RISKS

The main risk to the US is the exposure of the economy to debt and its dependence on consumer demand at a time of high unemployment and still significant spare capacity. Real growth in personal consumption expenditure could be well below average over the next ten years, as could be growth in government expenditure and if exports do not pick up the slack, so will growth in gross fixed private capital formation.

## US debt and the consumer

In 2007, disposable personal income was 74.1% of US GDP; by 2009 this had moved to 78.2% of GDP: a 4% differential.

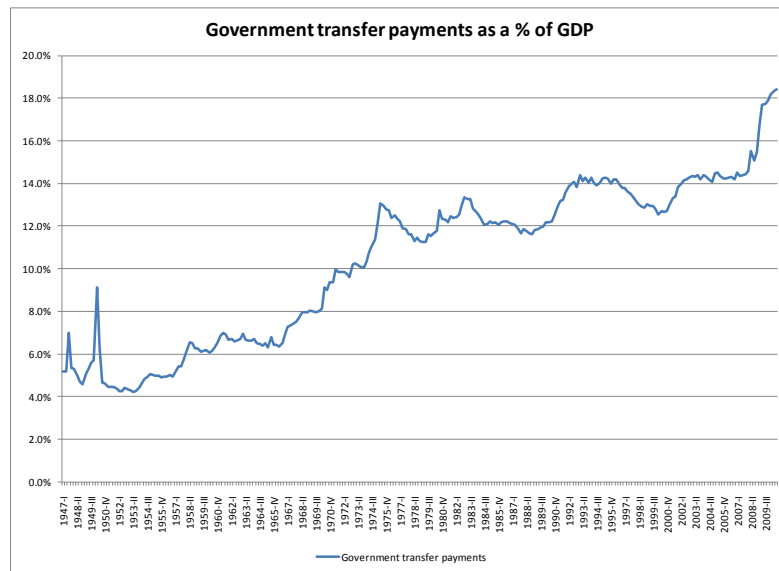
Chart 1



1

If we look at personal current transfer receipts as a percentage of GDP we find that that transfer payments have increased by a differential of around 4%: the increase in personal disposable income looks to be due to the increase in government transfer payments and fiscal policy.

Chart 2

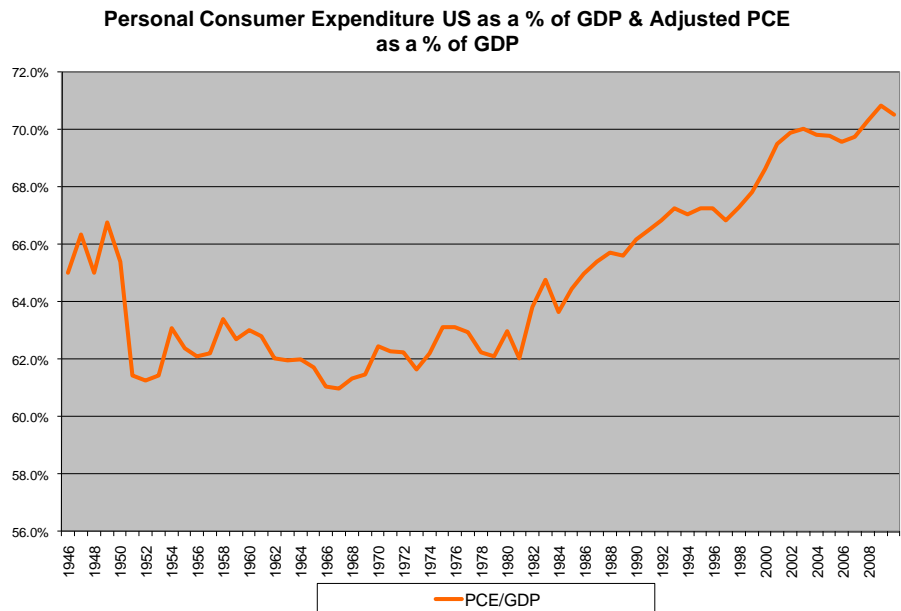


2

<sup>1</sup> Source US Federal Reserve Z1 data,

Given that personal consumer expenditure as a percentage of GDP has held firm at 70%, instead of falling, we realise that consumer demand in the US, excluding government support, would be operating at a much lower level. Indeed, PCE post crisis, as a percentage of GDP, appears to be marginally higher than it was pre crisis: an eventual PCE adjustment will have significant consequences.

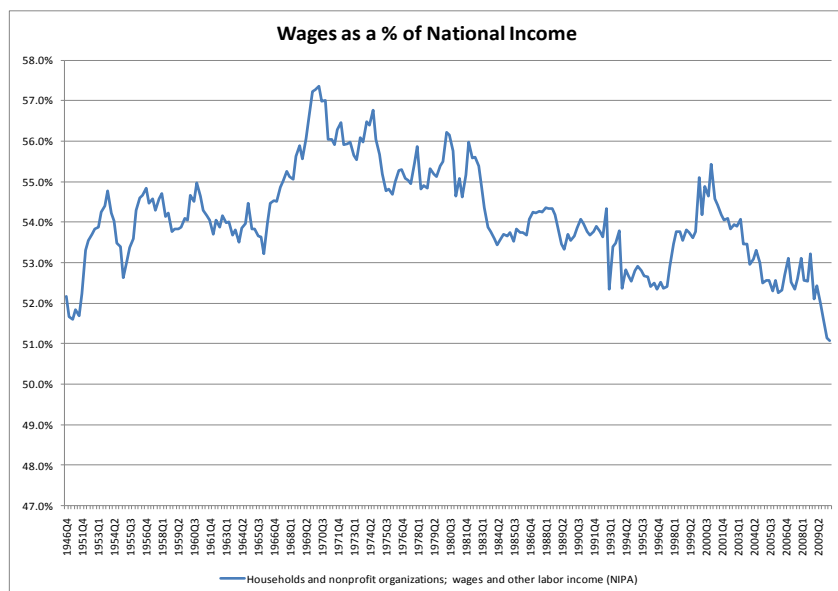
Chart 3



3

Yet, the share of wages and other income as a percentage of national income has fallen to a post war low. Wages are falling, unemployment is high and its duration long, and government transfers appear to be supporting expenditure. This does not support the personal consumption expenditure component of GDP going forward.

Chart 4



4

<sup>2</sup> Source: BEA Personal Income data

<sup>3</sup> Source: Federal Reserve Z1 data.

<sup>4</sup> Source: BEA Personal Income data

The US Federal government is borrowing close to 1.6 trillion dollars a year: the following chart shows annualised quarterly government borrowing as a percentage of annualised quarterly GDP (to the 3<sup>rd</sup> quarter 2010).

Chart 5

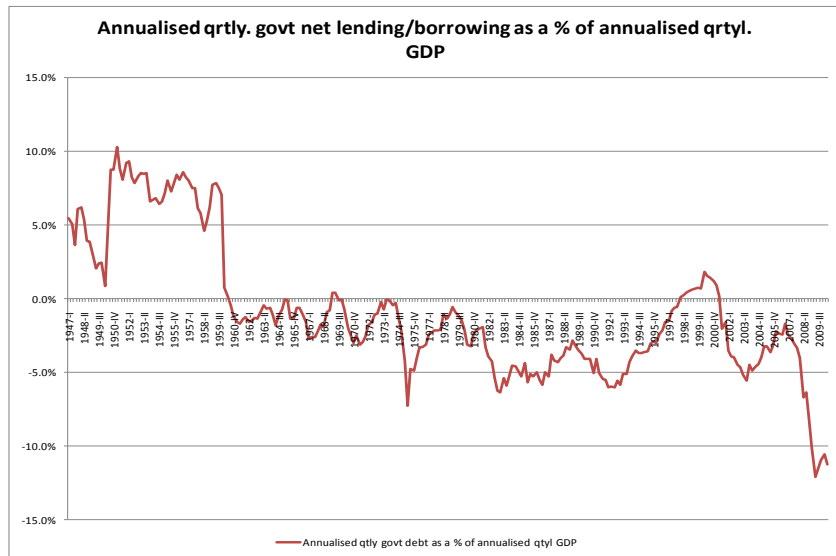
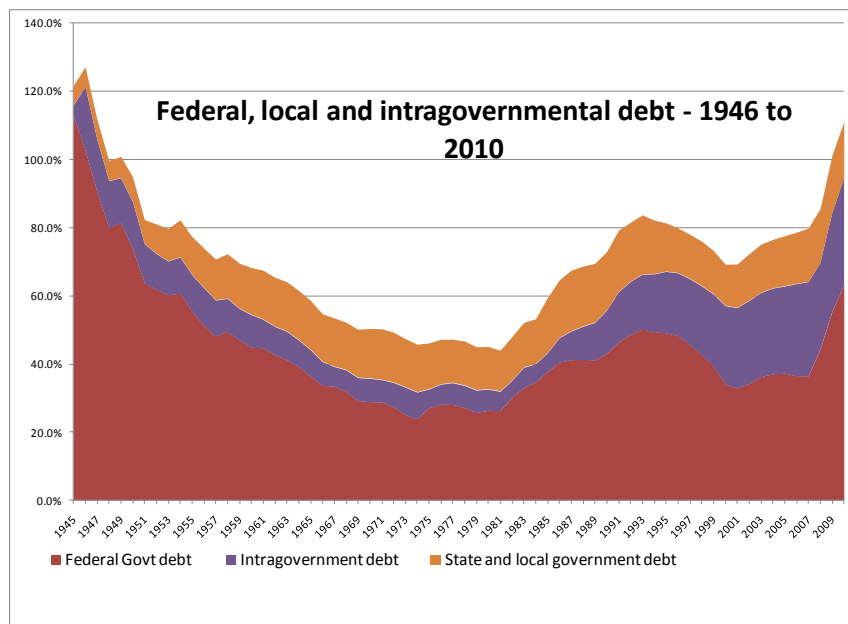


Chart 5 essentially states that the government deficit cannot be maintained at the current level and that support equivalent to 5% of GDP (quarterly annualised basis) has recently been pumped into the US economy. Government debt as a percentage of GDP (chart 6) is getting close to previous historical peaks: chart 6 shows the total of Federal, state and local and intra-governmental (Federal government borrowing from social security and other trust funds) since 1946.

Chart 6



<sup>5</sup> Source BEA Gov't receipts and expenditure data.

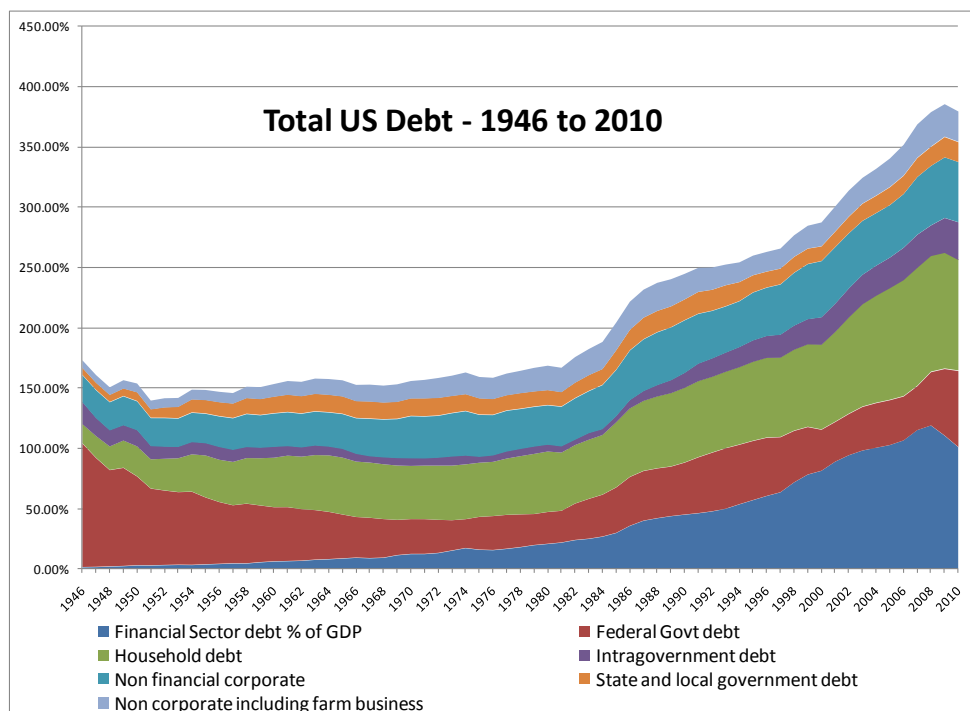
<sup>66</sup> Federal Reserve Z1 data

Some might say that this (the fact that we are within reach of levels of government debt that the economy has coped with) suggests the economy is capable of withstanding higher debt levels. There are three reasons why this should not be relied upon:

- ✚ Nominal economic growth post war was close to 7% per annum between 1947 and 1959; this was strong enough to help pay down the national debt quickly;
- ✚ Overall debt levels (if we add corporate, financial and personal debt) as a % of GDP are much higher in the current crisis than they have been at any other point in US economic history.
- ✚ Japanese real GDP growth has averaged 1.1% per annum post 1990 and total debt as a % of GDP has actually increased. The US trajectory is more likely to follow that of Japan's than the post war US trajectory.

The following chart (chart 7) shows total debt components relative to GDP from 1946 to 2010.

Chart 7



Total debt including intra-governmental debt is equivalent to \$55trn US dollars: to bring this down to 1995 levels would require the economy to reduce debt by \$20trn, or close to 140% of current GDP.

The US government appears to be attempting to support consumer demand at or close to pre crisis levels: this level of support unsustainable in the face of high unemployment and slow GDP growth (and hence revenue growth); US consumer demand as a % of GDP had been elevated to unsustainable levels through borrowing and low levels of saving; this will be a difficult level to sustain.

Fiscal policy cannot support a level of final demand that should not have existed in the first place: this is a fundamental structural issue.

<sup>7</sup> Federal Reserve Z1 data.

## Repaying debt

Repaying debt means cutting back on expenditure, consumption and investment, all of which impact output and the amount of capital reinvested that underpins growth.

## How much real growth can we expect from the US economy?

Real GDP growth from 1947 to 2010 is close to a geometric 3.3% per annum (St Louis Fed data), 2.5% per annum real (1990 to 2010) and 1.6% per annum real from 2000 to 2010.

But just what level of GDP growth can we expect over the next 5, 10 to 15 years? The following table shows the increase in GDP components over a number of time periods as a % of the increase in total GDP over those time periods (real GDP). Note that increases or decreases of a component's importance to GDP can be higher or lower (significantly) than the total component's percentage of GDP: for example PCE has been close to 70% of GDP for some years, yet it has accounted for 84% of GDP growth between 2000 and 2007 and 86% between 2000 and 2005.

Table 1<sup>8</sup>

As a % of real GDP	1929 to 1990	1947 to 1990	1952 to 2009	1990 to 2009	1995 to 2005	1995 to 2009	2000 to 2005	2000 to 2007
Personal consumption expenditures	64.9%	66.6%	73.4%	74.5%	77.3%	81.1%	85.7%	84.1%
Gross private domestic investment	<b>12.6%</b>	<b>12.9%</b>	<b>12.1%</b>	<b>12.1%</b>	<b>25.8%</b>	<b>6.9%</b>	<b>14.3%</b>	<b>8.7%</b>
Fixed investment					25.0%	10.6%	14.8%	10.5%
Nonresidential					15.7%	12.8%	2.0%	11.1%
Structures					0.3%	1.2%	-6.2%	0.1%
Equipment and software					<b>14.2%</b>	<b>10.2%</b>	<b>7.1%</b>	<b>9.9%</b>
Residential					<b>9.0%</b>	<b>-2.5%</b>	<b>13.8%</b>	<b>0.2%</b>
Net exports of goods and services	-0.9%	-1.7%	-3.2%	-3.4%	-17.6%	-6.6%	-19.2%	-9.7%
Exports	8.0%	8.3%	13.1%	14.9%	13.0%	16.1%	8.3%	17.6%
Government consumption expenditures and gross investment	24.3%	23.2%	16.3%	15.3%	13.6%	17.4%	19.3%	17.0%

### Personal consumption expenditure:

On a discrete annual basis, consumer demand is the biggest component of GDP at close to 70%<sup>9</sup>. However, if we look at the total increase in PCE over a longer time period, we find that Personal Consumption Expenditure accounted for 84% of GDP growth between 2000 and 2007 (a higher level in the 5 years to 2005), 81% between 1995 and 2009, 76% between 1990 and 2010 and 65% between 1929 and 1990. One could argue that if we were to take out the debt fuelled consumption trends of the 1990s and 2000s, that PCE as a percentage of GDP should be closer to 65%: this is still higher than any other country of significance in the world. What this also means is that as a percentage of growth in GDP from 2007 onwards, PCE may only represent 45% of GDP growth (65% less 20%: 85% - 65%=20%). This would imply a high risk of a significant decline in the most important component of GDP: in order to move back to a lower component of GDP, nominal PCE either needs to be supported until its overall importance within GDP declines in real terms, or PCE declines in both nominal and real terms.

<sup>8</sup> BEA historical GDP data.

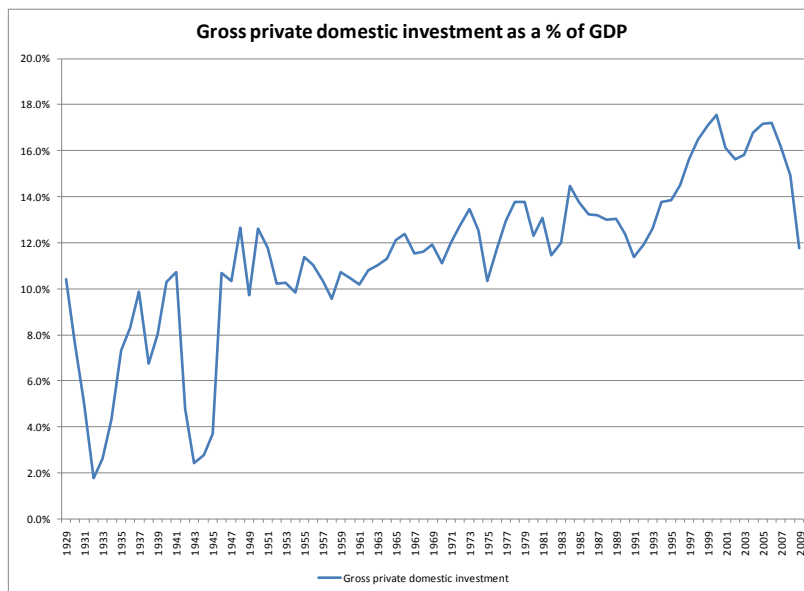
<sup>9</sup> Note that this does not mean that PCE represents x% of GDP growth, only that it is x% of GDP: much of PCE is spent on imports.

## Gross fixed capital investment:

Residential investment peaked in 2005 and is unlikely to be a major component of GDP growth in the immediate future. Private non residential investment, equipment and software being the major component of GFCI, represented some 10% of GDP growth between 1995 and 2010. With still significant excess domestic capacity and weak domestic demand conditions, growth in this segment would need to come from overseas demand or import substitution.

If growth in PCE is negligible, or even negative, much of the current domestic focussed excess capacity may need to be written off or directed towards export production. Historically, gross fixed capital investment in the US has tended to stay within a 10% to 14% band: between 1995 and 2005, the contribution of gross fixed capital investment exceeded its historical averages. The only other time (during the period assessed) when investment moved outside this band was during the 1930s deflationary period. At present, investment is back to a level which would be consistent with historic averages, which means that investment would be hard pressed to grow at a rate higher than the growth rate of GDP unless export demand picks up very strongly.

Chart 8



## Exports:

Historically, while net exports have detracted from GDP growth (see chart 9), exports as a % of GDP have been steadily increasing (see chart 10). Despite this, exports as a percentage of total final demand (C+I+G+X) is only 10%. In order for exports to have a significant impact on GDP growth, imports would need to fall and exports to rise sharply: in other words markets that it depends on for exports will need to stop exporting and buy more US goods.

Can this component alone drive nominal US GDP growth forward at a sufficient rate to accommodate weakness in other components? Well, there is a risk that the sharp increase in global trade in the years prior to the current crisis may have represented an above average period of growth in global trade: if this is the case, the type of surge needed to drive GDP growth may encounter some headwinds over the next couple of years. Exports as a % of GDP are lower in the US because of its large PCE/services component.

The ability of the economy to provide real growth would appear to depend on exports and the avoidance of a collapse in domestic demand. Given that US exports increased by a real 5.4% over the period 1990 to 2009, a period of exceptionally strong growth in global trade, it would require a significant change in the competitiveness of US goods (as well as other factors) to ensure export growth grows at a rate above this, all else staying the same.

Chart 9

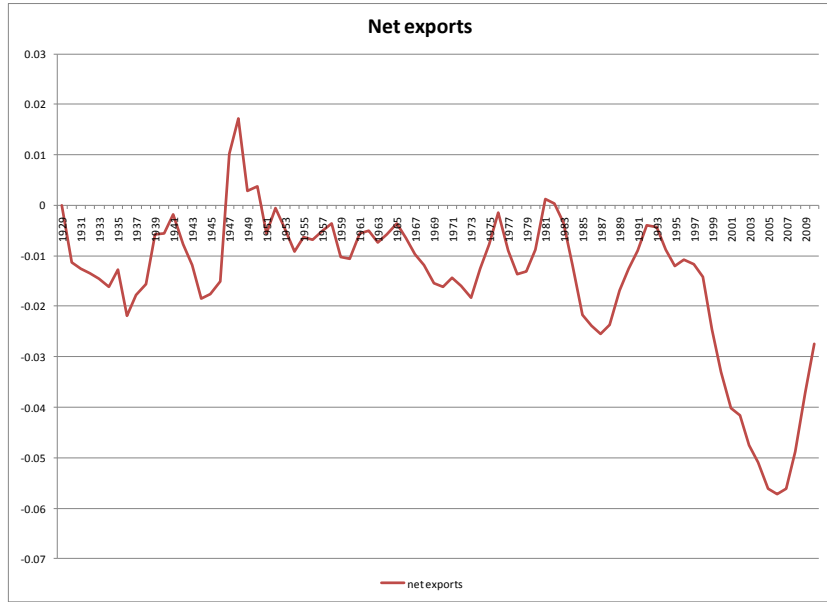
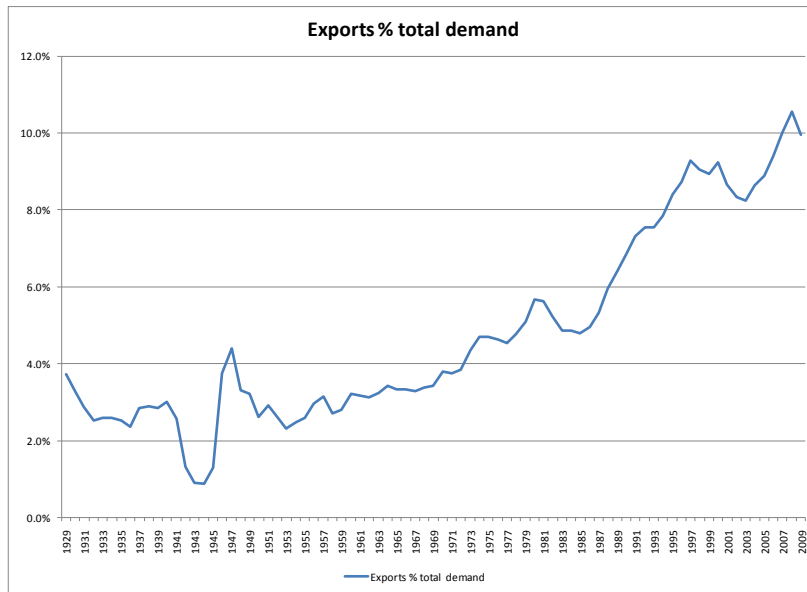


Chart 10



## Government expenditure

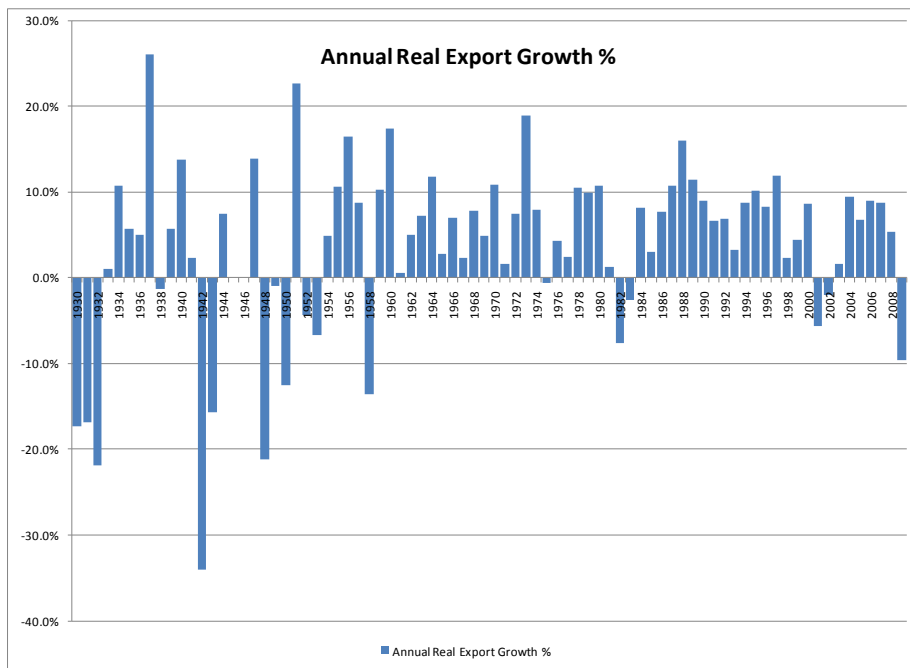
Growth in government expenditure accounted for some 17% of growth in GDP, post war, and more recently, according to BEA data, during 2007, 2008 and 2009 some 14.5 times the increase in GDP over that period. As of 2009, government expenditure was some 20% of GDP. If the government starts cutting the budget deficit, expect this component of GDP to decline significantly over the next decade. If government expenditure is 20% of GDP, and there is no growth in expenditure, then GDP growth will be cut by at least 20% (excluding negative feedback loops); if there are cuts to government expenditure then GDP growth will be cut by more than 20%.

## Export growth scenario

Let us assume that real exports expand by 28% per annum for 3 years, that real PCE declines by 3% over three years, that imports decline by 50% of the fall in PCE and that import content of exports rise by 40% (and hence imports rise/fall by the net of the impact of the fall in PCE and the rise in exports), that gross private investment expand by 30% of the rise in the value of exports (all other investment keeping pace with inflation) and that government expenditure decline by 5% per annum.

At the end of 3 years PCE would be close to 65% of GDP and real growth would have averaged 1.8% per annum and exports would be 22.5% of GDP, double the level they were at the end of 2009<sup>10</sup>. If however real export growth were to be 15% per annum, there would be a steep recession with real GDP at the end of the third year still 0.4% below the value at the end of 2009 and PCE some 69.24% of GDP. In the last 60 years there have only been 5 individual years when real export growth exceeded 15%, and three of them were between 1950 and 1960 – see chart 11.

Chart 11



Stability of the US economy depends on strong export growth as well as a host of other factors: no collapse in US consumer expenditure, no significant rise in the cost of servicing debt, and a healthy global economy.

With US consumer demand and growth in emerging markets interrelated, weakness in US PCE (less imports) would impact the ability of the US to export to developing and emerging economies. Additionally, the US would be competing with European and Asian exporters, many of which sell to the Asian export hub which sells back to these same markets: meaning that much of the growth in US exports would need to come from these countries via a competitive devaluation of US currency; reduced US imports would impact the global networks supporting the delivery of exports from developing and emerging economies. In other words, the US cannot rely on exports alone to generate the type of growth that is needed to avert a further downturn and to allow total debt to be brought down to more manageable levels.

Additionally, the scenario assessed is based on minimal debt repayment: the economy would still be impacted by significant risks posed by very high levels of debt within the economy. The analysis therefore highlights the very delicate balance between lowering debt, the ability of the economy to support debt and the very heavy dependence on exports. Recessions brought about by monetary tightening in response to

<sup>10</sup> Source BEA GDP data.

inflationary risks in key developing and emerging economies would most likely push developed economies such as the US back into a deep recession. There is no fat on this entity!

## Debt repayment scenario and dynamics

Repaying debt as an individual or an individual company is a different matter from an economy as a whole repaying debt. The former may not impact the overall growth rate of earnings or of demand for one's products, but a reduction in total debt of an entire economy is a different matter entirely.

Based on Federal Reserve Z1 data, going back to 1945, total economic debt has not declined in any one year. Consumer debt has only declined in one financial year and that was 2009, and corporate debt declined during the early 1990s recession (not the current downturn), but generally speaking, there has not been a wholesale decline, or repayment of debt in the US over the period analysed.

Rudimentary modelling of debt repayment dynamics shows that repayment of total debt has a negative impact on GDP growth (and debt/GDP relationships), much more so than simply avoiding repayment and allowing debt to be devalued by nominal GDP growth.

In other words, it is better for economic growth, to defer repaying debt and to devalue debt via inflation: reducing debt will more likely bring about deflation, especially during a time frame when real GDP growth is likely to be low. However, this presumes that it is safe to retain debt exposure: failure to reduce debt will forever retain one's exposure to deflationary risk as well as expose oneself to rising costs of debt financing. At some point the US budget deficit will need to be cut to a rate that is below nominal GDP growth rates and rising bonds yields imperil the ability to do so. As with Ireland and Greece, a rise in bond yields way above potential GDP growth rates implies a de facto default.

How does all this play out for the US economy? Repaying debt at the current moment in time would risk pushing the US economy back into a deepening recession. Increasing debt would risk higher funding costs and potential default while a cut in fiscal support to the economy while growth is weak may risk deflation. In other words, the deficit cannot at this moment be cut, debt cannot be repaid and yields need to stay low. QE is a must.

Quantitative easing is therefore necessary to support fiscal expenditure during an economy's transition period: this also means that QE could continue for some time. Again, the US is dependent on demand for its exports and strong growth in developing and emerging economies. As we have shown, export growth needs to be historically significant: this is difficult to imagine given that growth in world trade, prior to the crisis, had been built on significant global structural economic imbalances; in other words, risks are to the downside and recovery is fragile and built on weak foundations.

If real economic growth were to average 1.6% a year and inflation to average 1.5% a year, it would take 12 years to get back to a position where total debt as a % of GDP was the same as it was back in 1995: this analysis uses total debt noted in this report, no further increase in total debt, no sharp interest rate or other financial and economic shock. The increase in total nominal debt since 2006 is equivalent to close to 50% of total US debt outstanding in 1993: given the very high levels of unemployment and the still significant excess capacity, the foundations of the US economy could just as easily deteriorate further.

Whether debt is repaid, or diminished by nominal GDP growth, the potential impact of total debt levels on US GDP growth could be as much as 1% to 2% per annum: lower nominal GDP growth implies a higher or longer term drag; higher growth a lower or shorter longer term drag equivalent to the rate at which it would take debt to depreciate annually to a level (stable) which would not expose the economy to deflationary risk.

Between 1990 and 2009 real GDP growth in Japan was some 1.1% (real growth in exports 5.5% per annum – arithmetic mean), in the ten years to 1990, real GDP growth was 3.99% per annum (real annual growth in exports 5.8% per annum – arithmetic mean).

For the moment government expenditure and transfer payments have held the US economy up, but high unemployment risks further deterioration in the government's fiscal position, as well as a long term impact on

domestic demand and output of goods and services: during a recession, any impact on demand and output is both shallow and short whereas a sustained period of high unemployment and weak domestic demand risks long term cuts to capacity and investment; in this instance (capacity cuts and reduced GDP potential), QE could lead to very high inflation.

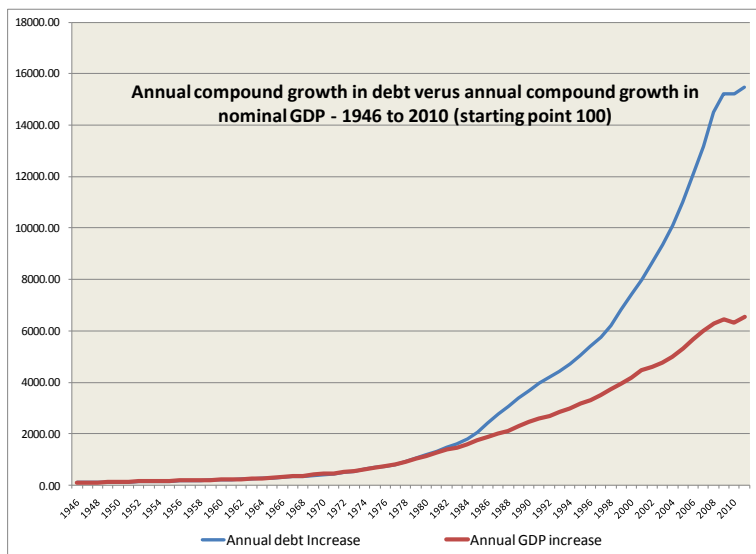
As it stands, the only component of US economic growth which is not constrained by domestic factors (debt, unemployment, structural imbalances) is plausibly exports, although export demand is affected by the global structural economic imbalances. Imports have detracted 0.75% per annum from US economic growth since 1995: a reversal of this would be important to its ability to pay off (or diminish relative to GDP) its debts and for absorbing excess unemployment.

Net interest payments on government debt are currently close to 3% of GDP, higher for corporate debt and much higher for household debt (especially unsecured lending): nominal GDP growth needs to exceed net interest payments as a % of GDP if total debt as a percentage of GDP is to decline over time. This also means that once investors demand higher yields to account for higher risk, the ability to use nominal GDP growth to manage debt becomes problematic and plausibly impossible.

## Historical relationship: US total debt and GDP growth

The following chart shows the relationship between total debt accumulation and GDP growth: up to the early 1980s, the relationship between debt accumulation and nominal GDP expansion was close until the early 1980s; beyond the 1980s as the financial system was deregulated, a lot of debt/money supply expansion became focussed on assets. If total debt reduction occurs we could see a decline in total asset valuation, debt defaults and GDP contraction. It is the unwinding of long term imbalances that provides the real and great challenge to economies like the US.

Chart 12



11

Many point to the much larger asset base as an argument as to why greater debt can be supported: unfortunately, asset valuation should not be so much based on excess money supply but the future real return on that asset or real GDP growth; as debt to GDP and debt to disposable ratios rise, the higher the valuation of assets and the more sensitive the valuation of assets to risks that impact the future stream of those returns. Wealth depends on growth in output and cannot exist independent of such.

## Current situation

QE2 is necessary to support asset prices, and to keep debt costs low while fiscal expenditure supports the economy, to engender consumer confidence, to support consumer demand and to provide the necessary confidence for industry to continue to invest and employ and for consumers to spend more than they may be able to afford.

Current economic data reflects government expenditure and income support, inventory adjustment and a rebound in orders and output and domestic demand from what had been very steep declines during 2008 to 2009.

Capacity utilisation in the US is still at low levels, and would be lower still if it had not been for government fiscal support. Consumer confidence remains at relatively depressed levels, despite recent rises, and is likely to remain so for some time until labour and housing markets improve significantly.

It is always difficult to gauge whether rising asset prices are actually making consumers more confident and more willing to spend, and whether short term increases in consumer demand will lead companies to risk more investment and hiring: relying on a feelgood factor derived purely from communication from those operating in the asset markets is questionable. Irrespective of the positive economic data coming out of the

<sup>11</sup> Source Federal reserve Z1 data.

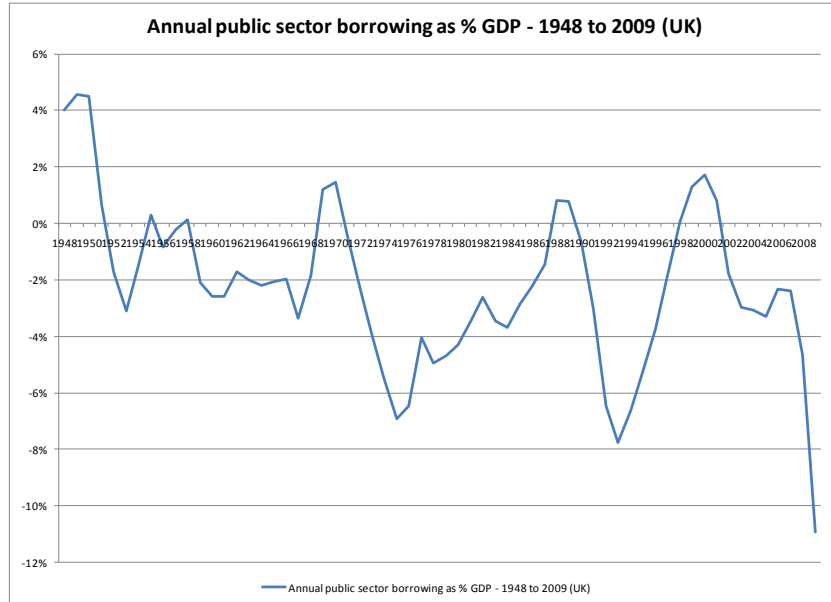
US, this does not alter the very real headwinds and structural impediments the economy will face going forward. We certainly do not want economic growth based on demand that cannot be sustained, debt that cannot be repaid and investment that may ultimately go to waste.

## UK STRUCTURAL RISKS

As of March 2010, UK government debt<sup>12</sup> had risen to £1,000 billion or 71.3% of GDP, while the annual public sector borrowing requirement was running at 160bn in 2009/2010 or 11.4% of GDP, up from £535bn and £39bn in 2006 respectively; annual interest on this debt, like the US is close to 3% of GDP. The 2010 to 2011 deficit is expected to be close to 150bn and there is concern over the rising cost of interest payments.

The 2009 annual deficit was some 11% of GDP: chart 13 shows the annual public sector deficit as a % of GDP since 1948. The UK government has pledged to significantly cut the PSBR (annual borrowing) over the next few years and this is expected to be a key drag on growth.

Chart 13



UK consumers are heavily in debt, with debt to GDP close to 102% (including non profit organisations at 110% of GDP) up from 40% in 1987.

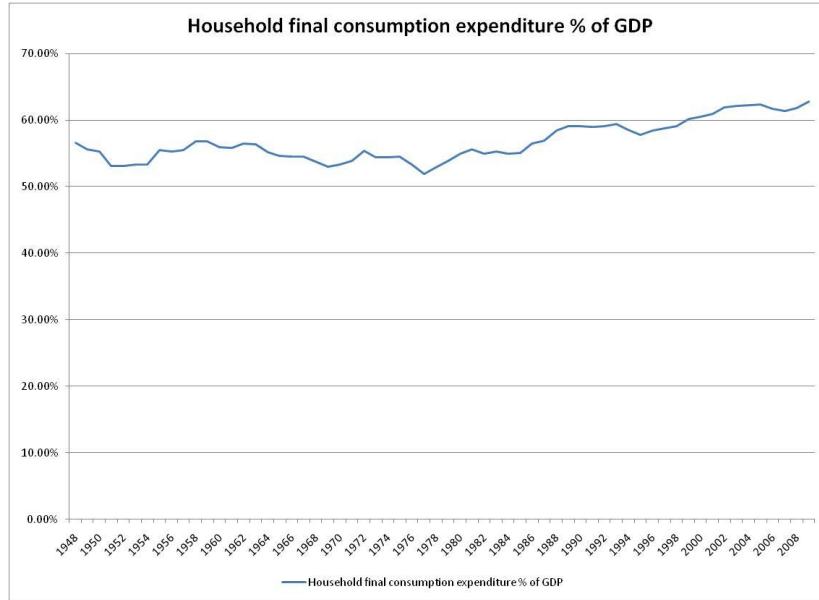
Total gross debt in the economy, as of 2009 stood at 540% of GDP: consumer debt (including non profit organisations 110% of GDP), non financial corporations (121.8% of GDP) and financial corporations (244.7%). Source of data for total debt components has been taken from the UK Office for National Statistics Blue Book: non financial corporations debt is total loans + total securities other than shares; household and non profit organisations and governments debt is represented by total liabilities and financial corporate debt is total loans + securities other than shares – financial derivatives.

Consumer spending has recovered strongly: retail sales have recovered to levels seen pre crisis, but according to the Bank of England in its November 2010 inflation report, much of this is due to a) increased Value Added Taxes on goods and services, b) a significant drop in household saving as well government financial support, and c) imports and higher import prices. Growth in gross final expenditure in the second quarter was therefore attributed to taxes and imports.

Personal consumption expenditure is some 62% of GDP, well below the elevated rates seen in the US, but still comfortably above the post war average. Again, as with the US, although to a lesser extent, personal disposable income has been boosted by government transfer payments.

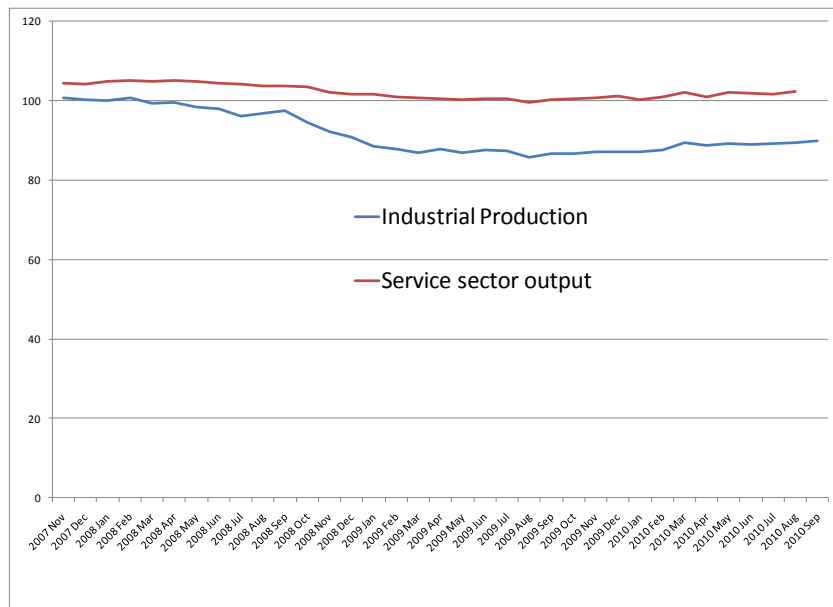
<sup>12</sup> <http://www.statistics.gov.uk/pdfdir/maast0910.pdf>

Chart 14



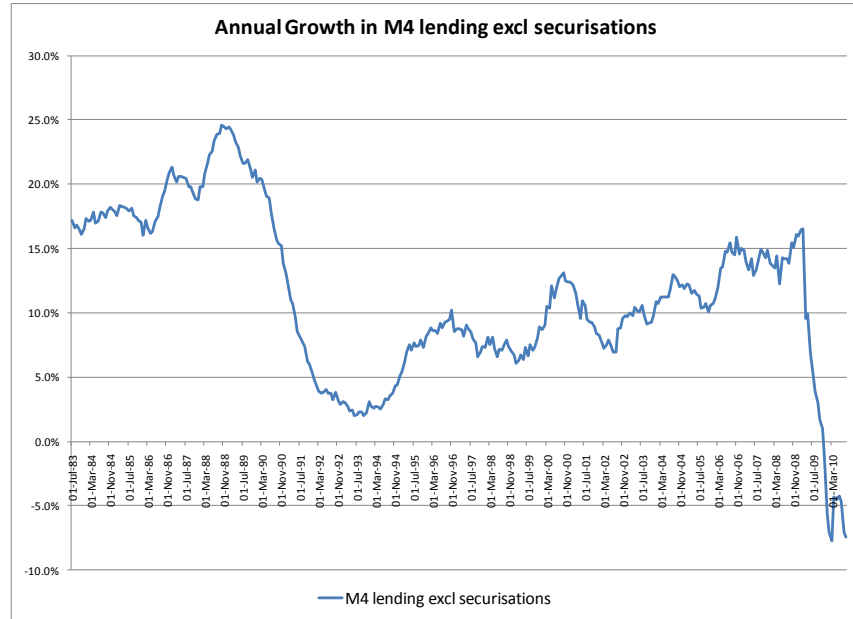
Service sector output remains marginally below pre crisis peaks and industrial production still significantly so.

Chart 15



According to the Bank of England money supply growth (M4 lending to the private sector) remained weak; “Bank lending to businesses and households remained weak in Q3, as did broad money growth”. Margins on lending have also remained high, especially on unsecured lending.

Chart 16



13

Spare capacity also remains relatively high and according to the Bank of England, narrowing of capacity utilisation reported in surveys is more likely to be attributed to low business investment and permanent reductions in productive capacity; in other words, signs that capacity utilisation has narrowed may have negative connotations rather than positive for the long term growth potential of the economy. Business investment to GDP also fell further and quicker than in both previous recessions.

Unemployment in the UK is still elevated at a reported 8% and with close to 350,000 jobs to be lost in the public sector over the next few years: unemployment looks to continue to remain a risk to nominal GDP growth and government borrowing and expenditure. As with the US, there has been a large increase in the number of part time workers, with the highest recorded figures since records began in 1992.

GDP growth post the nadir of the downturn has been strong relative to the two previous recessions, but the previous drops were much milder and the structural issues much more benign. One cannot compare the current economic scenario with any in recent history.

High levels of debt, high unemployment and cuts to government expenditure leave growth dependent on exports and or import substitution. In assessing risks to the UK economy we need place less emphasis on growth associated with a recovery in world trade and look at the structural economic weaknesses of the economy: growth risks being some 1% to 2% or more below historical relatives unless we see very strong domestic demand growth in developing and emerging markets. Currency depreciation has helped the UK relative to other highly indebted European economies, but this has been at the expense of increasing inflation.

<sup>13</sup> Source Bank of England data

## EUROPE STRUCTURAL RISKS

Europe started the financial crisis, on average, with less consumer debt, higher savings ratios and more balanced economic growth than the US. Nevertheless its banking system was exposed to structured products, and its export industries were exposed to global structural economic imbalances that started to unwind during 2008. Government debt to GDP ratios have increased significantly since then and overall debt concerns are placing considerable stress on the Euro area.

The lingering crisis has exposed the smaller less competitive economies of the Euro Area, forcing either a rescue of their fiscal position and or banking systems, or a break up of the Euro itself. The crisis has also exposed a dependence on global structural economic imbalances and the manufacturing networks of the developing and emerging economies in particular.

The highly indebted bail out countries of Ireland, Portugal (probably imminent) and Greece (as well as potential bail outs such as Spain) are struggling to compete and are facing very large cuts to fiscal expenditure: high unemployment and very poor GDP growth prospects await as they attempt to rein in significant budget deficits. Given the significant total debt positions of these at risk economies (non financial corporate, financial, household and government), and a fixed exchange rate, austerity is producing an internal deflationary/debt spiral.

The risks of a break up of the euro are high, as are the risks of further financial contagion as banks face partial defaults on government bond holdings and EU governments face rising costs of bailing out crisis hit members. Much rests on growth in world trade, while economic stagnation or decline risks a break up of the Euro zone.

### Germany

Since the depth of the crisis Germany (third largest economy and second largest exporter behind China) has benefitted from the overall weakness of the currency union (the former Deutsch Mark would one believe have appreciated strongly) and the strong resurgence of economic growth in developing and emerging economies.

Asia and other emerging countries have also been an important part of the growth recovery in the Euro zone (note in particular Germany): again note from the ADB 2010 Outlook;

*“A further breakdown of euro area exports using quarterly data shows that China’s share increased from 3.8% in the first quarter of 2007 to 6.2% in the second quarter of 2010. In nominal terms euro area exports to China increased by 54% between the first quarter of 2009 and the second quarter of 2010. The largest share of this increase can be attributed to machinery and transport equipment – especially road vehicles. More generally, while euro area exports have grown by 21.8% since their trough in the second quarter of 2009, more than a quarter of this increase can be attributed to exports to emerging Asia, almost 10% to exports to Latin America, and a further 6% to exports to the Commonwealth of Independent States, including Russia.”*

German exports have represented some 45% of total final demand since 2005 (49% in early 2008) compared to close to 10% for the US (Long term current account deficit), 22% for the UK (long term current account deficit), 25% for France exports as % of GDP (deficit since 2004, small surplus 1992 to 2003) for the Euro 16 is some 16% over the last year.

German GDP growth in the third quarter took nominal GDP (at market prices, real GDP in the 3<sup>rd</sup> quarter is still some 3% below pre crisis levels) to just below the pre crisis peak, with private consumption (at nominal levels) continuing to grow above pre crisis levels (retail spending is still some 3% below the pre crisis peak).

While the German government had supported employment and consumption during the economic downturn, the strongest driver of recovery has been a resurgence in international trade. Nevertheless, as of September 2010, manufacturing was still some 8% of its pre crisis peak, albeit well off its lows (close to an 18% drop at its nadir) and capacity utilisation, though still below pre crisis levels, was not far off historical averages.

Germany has been heavily dependent on exports for its growth over the 2000 to 2008 period: outside of exports its underlying domestic growth rate is lower than other developed countries<sup>14</sup>. It is clear that the growth rate of world trade between 2000 and 2008 was an aberration fuelled by global structural imbalances (note the large deficits of the US, the UK and Spain in 2007/2008 which dwarf the surpluses of China, Germany and Japan) and Asia and in particular China's own dramatic growth rate or not.

## Euro Area – current data

As far as the Euro area is concerned, [construction](#) activity is still mired in a severe post crisis slump, [unemployment](#) is still rising (10.1% in September, with only Germany and Holland seeing improvement), industrial production is still well below pre crisis peaks and retail sales are still marginally below pre crisis peaks: both production (including new order growth) and [retail sales](#) have softened recently. Despite the strong rebound in euro area industrial production, capacity utilisation remains below its long-term average: although German and Austrian rates are much closer to historical averages. There is of course considerable difference between the recovery in countries like Germany and France and that seen in Spain and Italy: hence the considerable stress in the Euro zone area.

## Debt in the Euro zone

Total debt across the Euro zone has crept higher over the last 10 years. It is important to note that in assessing debt to GDP ratios (total debt, household, non financial corporate, financial) that there are a number of different methodologies for determining debt and that because of this the debt to GDP ratios found in different surveys will vary. What matters more than the differences, is the trend of the relative debt ratios for each analysis.

A recent BIS report (September 2010), "[Debt Reduction After Crises](#)" provides different figures from a recent [Mckinsey report](#) (January 2010), which both provide different figures from a recent Price Waterhouse Coopers report as well as different from data taken from the Federal Reserve Z1 accounts.

Government debt to GDP across the Euro zone is some 80% of GDP, household debt some 65% of GDP, non financial corporate debt 106% of GDP and financial sector debt some 94% of GDP. This data is drawn from the European Central Bank monthly bulletin tables (Section 4.2 financial, 6.2 government, 3.3 households, 3.4 non financial corporations and 3.5 insurance corporations and pension funds). The annual government deficit for the Euro zone in 2009 was 6.2% of GDP.

Total debt in 2009 was 345% of GDP. In recognition of high debt levels M3 growth remains muted in the Euro Zone.

Unlike the US and the UK, European economies are not as constrained with respect to the consumer demand component of GDP, but high financial, corporate and government sector debt poses risks to financial stability and risk significantly lowering future GDP growth. If export growth of the last few years has been above average and developing and emerging economies undergo a growth pause in the next few years, the financial impact on Europe could be significant. With much of European exports being intra the Euro market place, the financial stress in the PIGS could reverberate impacting a much needed source of GDP growth.

As with the US and the UK, Euro area debt is likely to limit the ability to reduce debt, will require cuts to government expenditure and will impact overall growth rates for some time to come. High debt levels in the US, the UK and the increasing debt problems in Europe make developing and emerging market sources of growth ever more important.

---

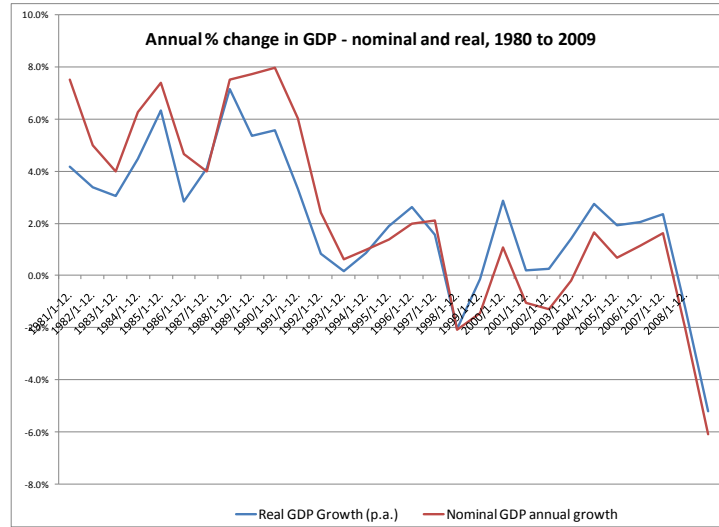
14

[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP\(2010\)36&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2010)36&docLanguage=En)

# JAPAN: THE BENCHMARK FOR STRUCTURAL RISK

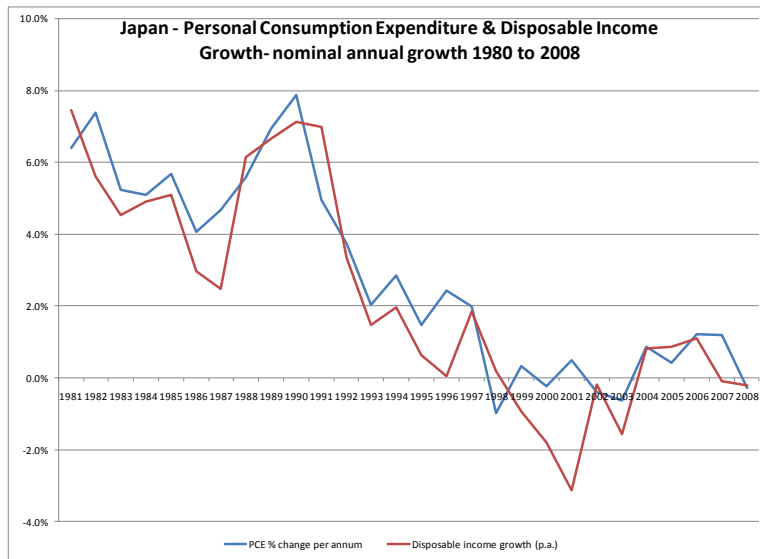
Japan provides a useful reference point for the impact of debt deflation (high debts, debt default, debt burden on GDP growth) on economic growth.

Chart 17



From the early 1990's onward Japanese real GDP growth has barely exceeded 2% (at any point in time), and nominal GDP growth (key to reducing real value of debt to real GDP) declined relative to real GDP growth as deflation took hold: during 2009, nominal GDP levels fell below 1992 levels. The US and Europe (and other highly indebted nations) would do well to pay attention to the impact of high debt levels on Japanese economic growth. Note also the impact of growth in disposable income and growth in personal consumption expenditure in Japan over the 1980 to 2008 period. Mere stabilisation of the economy will be insufficient to drive GDP growth forward: rising incomes are needed.

Chart 18



Breaking down the components of Japanese GDP growth we find that gross fixed capital formation declined in importance from 35% of GDP growth during the 80s to acting as a drag on growth: note that non residential fixed investment started to grow in the second decade post the bursting of the 1980s bubble. Also, government expenditure rose from 12% of GDP growth during the 80s to 40% in the 1990s.

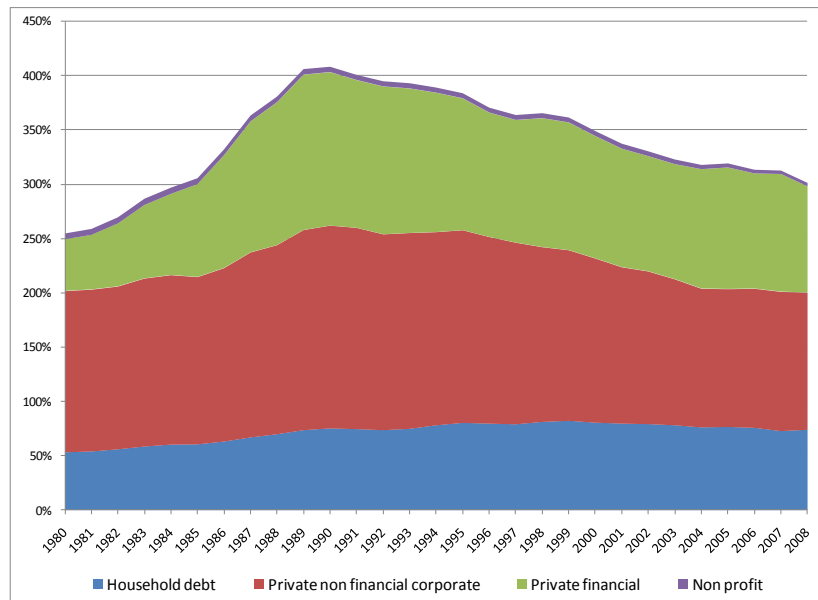
Interestingly, net exports of goods and services during the 1980s did not add to GDP growth, but post 2000 have accounted for close to 40% of GDP growth: much of the recovery in Japanese real GDP (pre recent crisis) has occurred post 2003, a period associated with strong global economic imbalances and export led growth in developing and emerging economies: Japan has benefitted from the tremendous surge in growth of world trade, spurred on by countries like China.

Table 2

Component growth as a % of GDP growth	1980 to 2008	1980 to 1990	1990 to 2000	1990 to 2008	2000 to 2008
Final consumption expenditure of households	51%	48%	61%	54%	47%
Government final consumption expenditure	20%	12%	40%	32%	23%
Gross fixed capital formation	16%	35%	-14%	-13%	-13%
Private sectors	19%	33%	-24%	-3%	21%
Residential Investment	-1%	4%	-10%	-10%	-10%
Non-Resi. Investment	19%	28%	-14%	7%	30%
Public sectors	-3%	2%	11%	-9%	-31%
Net exports of goods and services	9%	0%	10%	24%	39%
Exports of goods and services	25%	9%	36%	50%	66%

But what of debt to GDP? The following chart shows private debt<sup>15</sup> to GDP from 1980 to 2008: debt to GDP peaked for the private sector (continued to increase for households till 1999) and declined steadily from that point on. All total debt data is taken from Japan's national accounts at the ESRI website.<sup>16</sup>

Chart 19

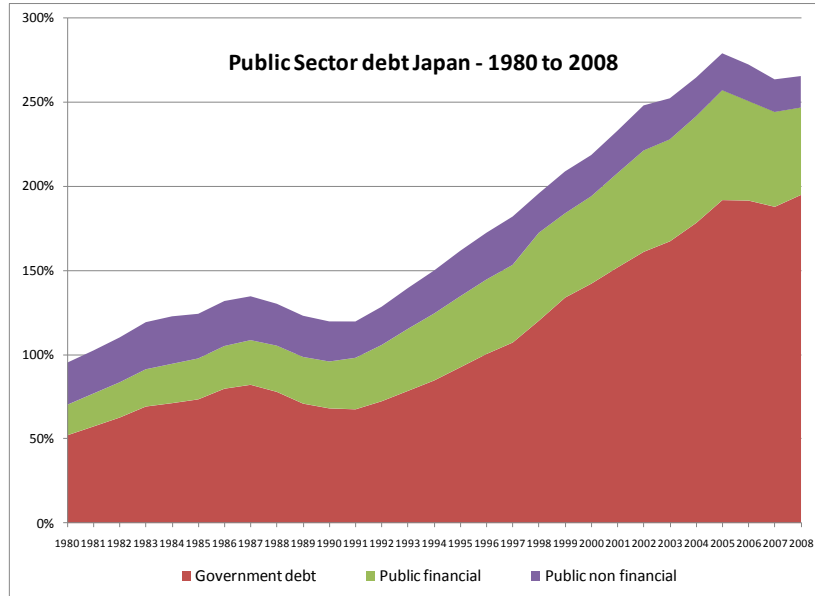


However, public sector debt increased over the same period.

<sup>15</sup> Non financial corporate debt is taken as liabilities less shareholdings and other equity; financial sector debt loans + securities other than shares and other equity; household and government sectors include total liabilities.

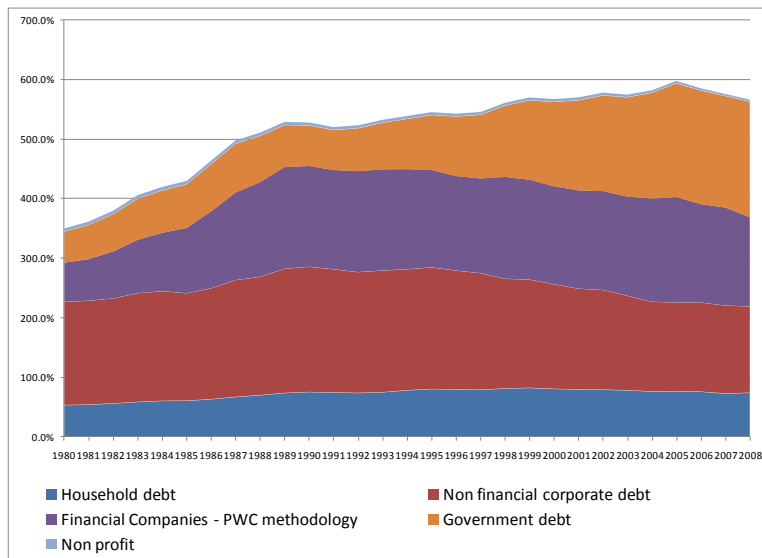
<sup>16</sup> <http://www.esri.cao.go.jp/en/sna/h20-kaku/22annual-report-e.html>

Chart 20



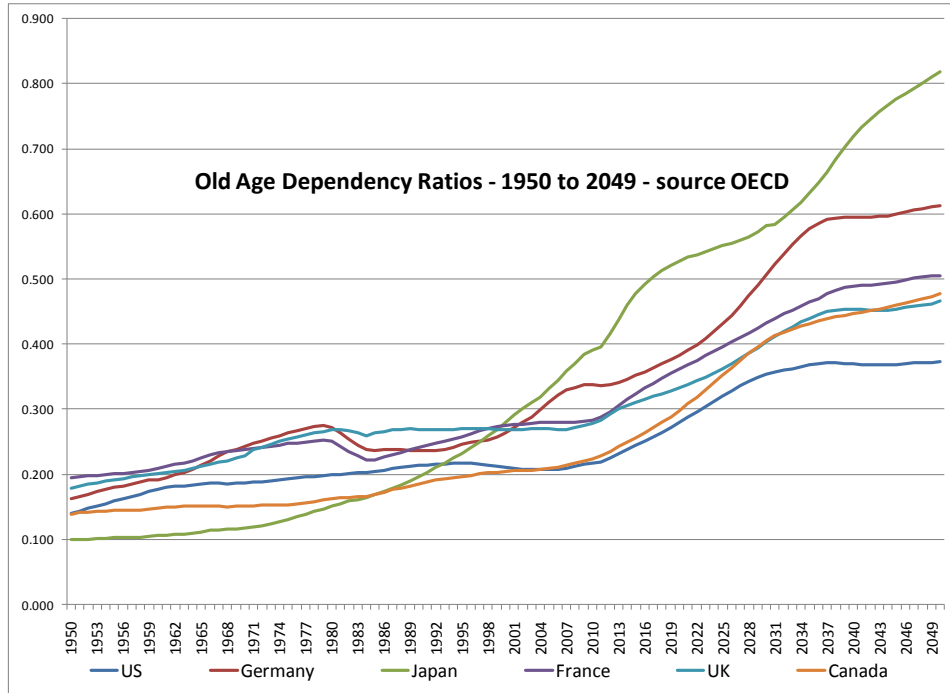
As a result total debt in Japan continued to increase post the bursting of the bubble: debt only started to decrease as a proportion of GDP when GDP growth strengthened post 2003. The portents for today's indebted developed economies are significant.

Chart 21



Japan remains a country mired in high levels of debt, with GDP exposed to volatility in exports and the risks of developing and emerging economies. It is also an economy with the highest age dependency ratio (population 65 and over as a % of population between 20 and 64) an age dependency ratio which will continue to increase over time.

Chart 22



The previous graph shows old age dependency ratios, using OECD data, for a number of countries including Japan. In fact, two major economies, Japan and Germany, both highly dependent on exports with less than dynamic domestic market places, have two of the worst demographic profiles, giving these economies yet further reasons to place an emphasis on exports as a source of GDP growth.

Japan is an economy that had experienced debt/deflation during a period when global growth was strong: yet, ever since the onset of its own financial crisis in 1990, its economy has been mired in slow economic growth and increasing levels of government debt. Post 2003 its economy finally appeared to be accelerating, only to be hit with the recent financial and economic crisis. It is an economy that has very close ties with developing and emerging Asian economies and had benefitted from the very strong surge in those same economies during the 2003 to 2007 period. It depends on exports, yet exports alone have not helped its economy avail itself of debt and slow growth. Clearly, economies like Japan (and Germany which has similar domestic economic issues) need to start consuming more in order for economies like the US to export more. The trouble is that Japan does not appear to be able to fill this role anytime soon.

## DEVELOPING, EMERGING AND ASIA

Many believe that Asia will pull the many highly indebted developed economies out of their financial and economic problems (high debt, limited potential for domestic growth, constrained opportunities for fiscal stimulus, poor capital investment outlook, aging populations) by providing a large and growing market for their products (capital and consumer goods) and services.

According to the Asian Development Bank in its [September report](#), growth rates for developing Asia averaged 6.7% between 1999 and 2008, with growth for 2010 forecast to be some 8.2%.

Asia was sharply affected by the recent economic and financial crisis, primarily through the impact of a sharp decline in world trade on its exports and gross fixed capital investment: economic growth has since recovered on the back of sharp increases in exports, gross fixed capital investment as well as domestic consumption. The majority of the rebound has come from exports (net exports) and gross fixed capital investment.

In Taiwan, exports to China represented some 10% of exports in 2002, some 41% in 2009 and for the first 10 month of 2010, 51%: this emphasises the importance of China to the region over the last 10 years. In 2010, gross fixed capital investment, inventories and net exports are expected to account for 79% of GDP (Source Taiwan Economic Outlook September 2010 – Taiwan Economic Council for planning and development).

In Hong Kong 63% of GDP growth from Q1 2009 to Q3 2010 came from net exports (25%), fixed capital investment (35%) and inventory changes (3%), with consumer expenditure accounting for only 35% of GDP growth. Historically, consumer expenditure has averaged 60% (annual average) of GDP (1980 to 2010).

In Singapore, 88% of GDP growth since the second quarter of 2009 has come from net exports - in 2008 personal consumption accounted for 38% of GDP (42% 2003) and gross fixed capital expenditure 28% of GDP.

In Korea, exports as a percentage of GDP rose from 27% in 1996 to 53% in 2008; the increase was particularly pronounced from 2002 onward, and gross fixed capital formation has hovered close to 30% of GDP (with the exception of the 1990s when it held close to 38% for a number of years): this highlights the increasing dependence on exports in this region for many countries. In 2009, growth in GDP was primarily due to exports (with a small portion due to government stimulus) and almost all of the negative impact on GDP coming from a decline in private investment. As with all Asian economies, GDP growth has been especially sensitive to gross fixed capital formation and exports.

It is worth noting other Asian economies like Malaysia and Thailand who also depend to a great extent on exports for their economic growth

China: from 2000 to 2009, gross fixed capital investment as a % of GDP has risen from 33% of GDP to 67% of GDP in 2009. In 2009 the increase in gross fixed capital investment was 1.5 times the increase in GDP: net exports only turned in a positive contribution to GDP growth in the second quarter of 2010.

Chinese consumer expenditure has fallen as a percentage of GDP from over 50% at the start of the 1990s to currently some 35%. According to a recent Mckinsey report<sup>17</sup>, household income has also shrunk from 72% of GDP in the early 1990s to less than 55% in 2007.

China has continued to show impressive growth over the last year, albeit led by gross fixed capital investment. Such a reliance on investment for growth, at the levels seen over the last few years is a concern: excess fixed capital investment preceded the late 1990s Asian crisis in many Asian economies; weakness in developed economies demand for Asian goods could impact the ability of Chinese economic growth to support the debt and capacity represented by such investment.

---

<sup>17</sup> [http://www.mckinsey.com/mgi/mginews/unleashing\\_chinese\\_consumer.asp](http://www.mckinsey.com/mgi/mginews/unleashing_chinese_consumer.asp)

Recent money supply growth across the region has been strong and well above average (note strong growth in narrow money in Taiwan and very strong growth in credit in Hong Kong), but in particular credit growth has been strongest in China.

As of the third quarter, investment and net exports still accounted for 70% of GDP growth across what ADB terms Emerging Asia ex China. As of October 2010, Chinese gross fixed capital investment grew by 24% over the year, led by fixed asset investment in real estate.

India is the only major economy in Asia not reliant on net exports for GDP growth, but is still dependent on gross fixed capital formation (some 32% to 38% of GDP between 2004 and 2009). Private consumption is some 56% to 60% of GDP growth, meaning that there is less room for immediate expansion of growth in personal consumption expenditure. The current level of general Government debt stands at 73% of GDP.

Bank lending growth has picked up post crisis but still remains lower than pre crisis growth levels in most countries (except Hong Kong and Malaysia).

Asia still has wages and salaries as a lower component of GDP than developed economies and in general, a lower share of personal consumption expenditure as a percentage of GDP. Personal consumption expenditure in Taiwan is some 60% of GDP, Singapore 38%, China, Hong Kong 60%, Korea (52% 20 year average), China 35%, Malaysia (46% 20 year average), Thailand (56% average of last 10 years).

## Debt in Asia

According to the January 2010 Mckinsey report, total debt in India was some 129% of GDP as of Q2 2009: consumer debt was 11%, government debt was 66%, non financial corporate debt 42% and financial sector debt 11%. Latest figures from the Indian Finance Ministry<sup>18</sup> put the total annual deficit of central and state government at 9.37% of GDP for 2009/10 and total government and state debt at 79.8% of GDP.

Total debt in China, as of 2008 according to Mckinsey was some 159% of GDP; 96% non financial corporate debt, 18% financial institution debt, 12% household debt (mortgage debt in China by the end of 2009 was 15% according to the IMF<sup>19</sup> and consumer debt has likely climbed above 20% of GDP in 2010) and 32% government debt. However, alternative measures of government debt which include local government liabilities (work carried out by Professor Shih of Northwestern University) put total government debt closer 39.838 trillion in 2010, or close to 118% of 2009 GDP. This would put total Chinese debt at 240% of GDP.

The Public finance institute of South Korea has recently stated that its total private sector debt is now 376% of its GDP; individual debt/loans extended by financial institutions to individuals, hit 80 percent of per-capita gross national income at the end of 2009, the highest figure since official data began in 1975.

According to the IMF<sup>20</sup>, consumer debt to GDP ratios as of 2009 were highest in Malaysia (78.1% of GDP as of August 2010 – Bank Nagara), then Korea (80%, 2010), then Taiwan, Hong Kong and Singapore, and finally the smallest in Thailand, China (less than 20% of GDP) and Indonesia (less than 10% of GDP). Data on debt, again, varies according to the source.

Household debt in the US was some 60% of GDP at the start of the 1990s: this would have placed the average household debt (simple unweighted average) of Korea, Taiwan, Singapore and Hong Kong as of 2009 in the early 1990s in terms of the US debt time line: Korea with household debt to GDP of 80% in 2010 would have moved up to 2002, which is also where Malaysian household debt currently stands. China and India have household debt ratios similar to those in post World War II US: but note the differences between the GDP composition of the US (little or no export dependency) at the time.

---

<sup>18</sup> <http://finmin.nic.in/reports/IPFStat200910.pdf>

<sup>19</sup> <http://www.contexto.org/pdfs/IMFasiareport.pdf>

<sup>20</sup> [http://www.imf.org/external/pubs/ft/reo/2010/apd/eng/data1010/fig1\\_48.pdf](http://www.imf.org/external/pubs/ft/reo/2010/apd/eng/data1010/fig1_48.pdf)

While total debt in Asia is much lower than many developed economies, there are concerns in a number of economies as to debt loads, especially with the dependence of the region on exports and the large amounts of fixed capital investment and less robust social security provisions.

While household debt ratios are indeed much lower in India and China than the rest of the world, these are very immature economies with a) much less evolved financial services sophistication b) more low paying jobs and less social security provision, which makes meaningful access to sophisticated credit management improbable – additionally wages and earnings share of national income is much lower and savings much higher.

The impact of economic risk on consumer demand in a developed economy with lower debt levels and high export dependence is not the same as the more developed economies. In other words we should not be relying on low consumer debt levels in places like China and India as a sign of stable consumer demand.

Short term risks are high while long term risks are much lower than in developed economies: higher growth rates make the total debt load more manageable over time (but not necessarily at a point in time) and lower consumer debt loads provide opportunities for longer term expansion of consumer demand, but only as income levels rise and economies mature.

## Asia concerns

But, how does a region that has been structured along a particular business model and strategy suddenly change overnight to become a consumer of goods and services, and will it necessarily consume them, in sufficient quantities, from developed countries?

Note that, ultimately, the global production networks situated in Asia are more likely to be structures used to produce goods for Asian consumption than plants in Europe and North America.

Germany and Japan are two developed nations that have still not weaned themselves of the export model, so why should less developed, less well run, developing and emerging Asian economies be able to adapt and change much more quickly?

According to the US China organisation, gross fixed capital investment accounted for 67% of Chinese GDP in 2009 and only 33% in 2000. There is a risk that the large capital investments made over the last few years will act as a drag on growth in Asia as global economic dynamics adjust to slower growth (the transition phase) in developed markets, risking personal consumption expenditure and hence imports.

The risks to short term growth in Asia are high. There is no doubting Asia's economic potential, or the growth of the last twenty years and the current vigour of its economies, but beyond the vigour and the potential we should be wary of many of its weaknesses.

✚ It is far too dependent on exports: a high export component of total demand means that much of economic activity is dependent on and centred around exports, and this includes service sector activity and government policy and expenditure. These economies have become too dependent on strong demand from developed economies over the last decade especially.

“PRC final-goods exports tend to be specific to foreign markets, and much of the PRC's physical and human infrastructure is linked to a manufacturing sector that is geared for exports rather than for domestic consumption. For many of the PRC's East Asian and Southeast Asian intermediate-goods suppliers, the problem may be worse, as the parts and components that they produce are not likely to have domestic uses, specific as these are to the regional production network.....Indeed, for Asia including Japan, trade in final goods is predominantly accounted for by demand outside the region— 71%; 46% goes to the US and Europe. Indeed, the PRC has been sourcing a growing share of parts and components from other countries in the region, including Japan, while exporting the bulk of final goods to the rest of the world.<sup>21</sup>”

<sup>21</sup> <http://www.adb.org/documents/books/ado/2010/Update/ado2010-update.pdf>

- ✚ It is far too dependent on gross fixed capital investment (an imperative for developing economies) for economic growth: gross fixed capital investment in China over the last 6 or 7 years, especially the last two years, has been well above levels that emerging economies have typically accommodated safely; in Asia before the 1997/1998 crisis, many economies had splurged on fixed capital investment, leaving them exposed to the economic crisis that beset the region.
- ✚ Short term surges in debt/money supply growth (that accompany fixed capital investment binges) could lead to inflation in its domestic economies (especially China and Hong Kong), forcing higher interest rates and tighter credit growth that would lead to a decline in domestic demand. The feed on effects to developed economies' economic activity could see a prolonged downturn and economic crisis in Asia. Asia no longer has the luxury of being able to tighten domestic demand while benefiting from export growth.
- ✚ Do not become fixated on gross national income per capita differentials as an indicator of long term growth or value:
  - India and China have social, political and economic structures that differ vastly from the open and flexible nature of the US economy: they will not be able to achieve US GNI per capital levels on current structures.
  - High GNI per capita in developed economies has been leveraged by increases in debt and asset values over the last 30 years: we may need to adjust down the income differentials.
  - On a purchasing power parity basis, a number of developed Asian economies have lower GNI per capital than the US (Japan and South Korea) while countries such as Hong Kong and Singapore are comparable or higher to the US (note their high population and property densities and their role as international trade hubs which raise GNI per capital).
- ✚ According to the Asian Development Bank in its 2010 Outlook, emerging markets' share of world GDP between 1980 and 1984 was not materially different from that in the period 1995 to 2000 (based on purchasing power parity exchange rates and actually fell based on market exchange rates); the big change in share of global GDP occurred between 2000 and 2009: between 2004 to 2009, according to the ADB, emerging economies accounted for 63% of the increase in global output. This would suggest that actual growth rates over this period were above average and would appear to have been driven by China and consumer leverage in developed economies. The risks to Asian growth going forward are for lower growth rates than those seen over the last 10 years.
- ✚ High unemployment and deflation in developed economies and quantitative easing in those same economies are likely to place pressure on emerging economies: import substitution as developed labour markets become more competitive and rising cost of Asian exports as currencies appreciate.

Asian growth has been leveraged around developed economic demand for its goods and its economic direction has been structured around this demand. This platform for growth will need to change and this is the issue at present. Will it change and can it change in the time frame that people are expecting it to? The risks that it will not are very high.

## LATIN AMERICA & CANADA

Latin America is not discussed in detail in this report. While its region has grown strongly since the early 2000s, this has been heavily influenced by commodity exports according to a February 2010 report by Nomura, the “Ascent of Asia”, which also cast doubt on the region’s ability to compete with Asia, and noting that it in fact industrial production, employment and exports had been displaced by Asian encroachment. A recent report by the University of East Anglia<sup>22</sup> suggests that China is displacing Latin American exports to the US and impairing interregional integration.

Similarly, while Canada has fared better than most during the crisis and has significant debt issues, that have increased over the last 2 years as interest rates have stimulated debt fuelled domestic demand, especially in the housing market, it is more a hostage to the dynamics of the world than a driver. Its commodity driven component of GDP growth is dependent on marginal global growth (in other words the Asian growth story) and its industrial production and vast majority of its exports is dependent on US economic demand growth. In a sense it shares some of the dynamics of Latin America, where GDP growth has been fuelled by commodity price increases and demand, some of the dynamics of Japan and Germany which depend on export led growth (though no major developed economy is as exposed to one country’s demand as Canada is to the US) and many of the dynamics of US and UK economies where consumers are over exposed to household debt. Its strong currency in particular exposes it strong competitive export risks at a time when other economies with weaker currencies and competitive products are looking to expand exports.

---

<sup>22</sup> [http://www.uea.ac.uk/polopoly\\_fs/1.113466!ChinaBriefing\\_8pp.pdf](http://www.uea.ac.uk/polopoly_fs/1.113466!ChinaBriefing_8pp.pdf)

## WORLD TRADE

World trade is a sum zero game in the sense that the global value of exports and imports should, more or less, sum to zero: the sum of the net export balances in each economy should not in of itself add to global GDP growth. What world trade does is to enhance total global consumption and production (one country is able to produce goods at a cheaper price than another and vice versa: total global consumption and production of goods increase).

World GDP could be higher if economies like Japan, Germany and China imported more goods, i.e. if they had a smaller trade surplus, allowing deficit countries to export more. But this assumes deficit countries are not over consuming and hence importing more than their GDP profile would allow. If there is too much consumption in one country and exports (and hence GDP growth) in another are increased to meet this demand, the sum of both countries consumption and production is above equilibrium.

- ✚ In 2007, according to the WTO, the US had a merchandise trade deficit of \$858bn, and China, Germany and Japan surpluses of 262bn, 268bn and 92bn respectively (Saudi Arabia 144bn). The US had merchandise trade deficits of 275bn with China, 146bn with North America (Canada and Mexico), 118bn with Europe and another 163bn with other Asian economies (of which 87bn was with Japan). Only 5.6% of US exports go directly to China.
- ✚ The sum of the three biggest merchandise trade deficits in 2007 - US, UK and Spain - totalled some 1.2trn. This was some 4.5 times the Chinese trade surplus and almost 2 times the combined surpluses of Germany, Japan and China. All these deficit economies need to undergo structural rebalancing, i.e. reduction of consumer expenditure, higher saving, investment and export led growth.
- ✚ Much of world trade is actually intra regional trade: some 74% of European exports in 2007 were intra regional; 51% of trade within North America was intra regional; but only some 20% of Asian trade was intraregional and only some 24% of South American trade was intra regional<sup>23</sup>. This would suggest that the trade opportunities for the fastest growing regions, in particular Asia, are within Asia.
- ✚ In 2009, Europe was the destination for 43% of world exports, Asia the destination for 25% and North America the destination for 17%. To access established demand, the US would need to access the largest export market, Europe, and because of the large amount of intra regional trade, compete largely against European firms.
- ✚ The area of the world where the US has the largest trade deficit is Asia, with China accounting for 44% of its merchandise trade deficit in 2009 and 32% in 2007. The US's trade deficit in 2007 was some 2.9 times the sum of Asia ex Japan's trade surpluses.
- ✚ Asia has become a production hub for production of final goods to developed economies, in particular the US: this infrastructure and framework makes the region much more dependent on global demand for its own economic growth and much more susceptible to global economic shocks; it also makes it much more difficult for the region (at this juncture) to redeploy capital linked with this infrastructure towards domestic demand;

*“China’s imports of components from countries in ASEAN and other developing East Asia countries have grown rapidly, in line with the equally rapid expansion of manufacturing exports from China to extra-regional markets, mostly North America and Europe.....the region’s (East Asia) growth based on vertical specialisation depends inexorably on its extra-regional trade in final goods, and this dependence has increased over the years. Extra-regional trade is likely to remain the engine of*

---

<sup>23</sup> Source World Trade Organisation 2008 statistics.

*growth of the region in the foreseeable future. Put simply, growing trade in components has made the East Asian region increasingly reliant on extra-regional trade for its growth.<sup>24</sup>*

- ✚ Ultimately as Asia's domestic economies mature, it is the regional production hubs rather than manufacturers in North American and Europe that will likely produce the goods to meet Asian domestic demand. How this will help rejuvenate the domestic economies of the developed world is a difficult question.
- ✚ According to UNCTAD's 2010 World Investment Report, "*As investment from developed countries plummeted, intraregional FDI gained ground and now accounts for as much as half of the region's inward FDI stock....Growing intraregional investment in Asia has served as a vehicle for technology diffusion, "recycling" of comparative advantages and competitiveness enhancement....*" Foreign companies a) are going to find investing in Asia increasingly competitive and returns lower and b) if these production hubs are going to be the key for producing to sell in Asia, what then of domestic production and demand in developed economies.

It is difficult to see how the significant trade deficit countries of the world can normalise their consumption/trade imbalances without significantly impacting global GDP growth and world trade over the short term.

Yes, Asia is a potential source of demand for indebted and imbalanced developed economies goods and services, and yes this source of demand has a strong growth potential, but Asia is not the cause of the entire merchandise trade imbalance.

The dynamics of world trade are becoming increasingly more important to the world economy: the financial and economic excess that have built up have influenced the size, structure and interrelationships of world trade: a fall in demand for one country's products can reverberate right through the chain of suppliers and producers; a final product can be comprised of numerous processes and sourced components that have passed through a number of individual countries. The extent to which the supplier and production networks have built up and how they are structured will influence how capital invested can be used to redirect output to different markets and different tastes.

---

<sup>24</sup> [http://rspas.anu.edu.au/economics/publish/papers/wp2009/wp\\_econ\\_2009\\_15.pdf](http://rspas.anu.edu.au/economics/publish/papers/wp2009/wp_econ_2009_15.pdf)

## CONCLUSION/SUMMARY

The world appears to be split into a number of camps: the highly indebted mature that have over consumed (US, UK, Canada, a number of European economies), who account for the vast majority of the merchandise trade deficit; the developing and emerging economies of the world led by Asia, on which the hope of the world for future growth is resting, and the highly indebted mature economies that are unable to expand consumption for one reason or another, but who depend on the first two groups for a major component of growth (primarily Japan and to a lesser extent Germany).

Within groups 1 and 3 there is little room for additional fiscal stimulus: government budget deficit reduction will detract from potential GDP growth.

Within groups 1 and 3, personal consumption expenditure, given high unemployment, high levels of debt and weak expected income growth, is unlikely to be a key driver of growth for some time.

Within group 2, export growth and capital investment has been the primary driver of growth. This group is now expected to lead global growth in personal consumption expenditure and to provide a market for goods and services of groups 1 and 3.

Group 2, in particular Asia has tremendous long term growth potential: the problem is how to disengage from the export growth of the last decade, for which there is now reduced potential growth in markets 1 and 3, towards domestic demand growth which has been dependent on exports and export related domestic economic activity. This is the problem.

In groups 1 and 3, long term real GDP growth could easily be 1% to 2% below historical averages and more if global economic conditions deteriorate. With real economic growth potential of circa 2.5% in developed economies, this means real growth of between 0.5% and 1.5%: both growth rates imply difficult economic conditions. This below average period of growth will last until total economic debt moves back to levels seen between 1995 and 1998. As debt levels fall relative to GDP, potential growth rates will rise, meaning that in the early years there is potential for growth below these rates. Low growth rates in groups 1 and 3 imperil group 2's ability to decouple from groups 1 and 3.

Groups 1 and 3 have excessive levels of debt: group 1 in particular experienced a banking crisis where in the first phase of the crisis debt and debt based derivatives built up over the last 10 to 15 years in particular started to move back through the banking system. Central governments and central banks supported the economic and financial systems allowing debt and asset prices to recover and consumer demand to stabilise: this stability has had a cost and risks a further collapse in the financial system in areas 1 and 3.

This is where quantitative easing comes in: quantitative easing has been introduced to support asset prices to support the economic system to allow group 1 and 3 to reduce total debt to GDP ratios. Total debt cannot be paid down without significant risk to GDP growth: it can only be paid back by taking from GDP, reducing the reinvestment rate in the economy, nullifying growth and exacerbating economic and social problems arising from high unemployment. Effectively, QE support to groups 1 and 3 is needed to allow group 2 to transition. Unfortunately, the risks of quantitative easing may force a quicker transition from exports to domestic consumption in group 2, which may risk the necessary transition of group 2 through to a more personal consumption expenditure driven economy.

We cannot assume that group 3 will continue to grow at the rates they have over the last 10 years, and that domestic growth in these economies will shift towards consumption and away from investment and exports within a time frame needed to substantively support GDP growth in groups 1 and 3 in the short term (0 to 5 years).

We have to assume that the period in which group 1 economies stop importing on a scale required by emerging and developing economies, and switch to an emphasis on exports, will place strains on group 2, and that groups 1, 2 and 3 may be exposed to yet another simultaneous financial and economic shock.

We cannot assume that quantitative easing will work and support debt and asset markets while nominal GDP growth reduces the relative weight of debt as a percentage of GDP; we also cannot assume that yields required on government debt will not rise to a point where large economies like the US run the risk of defaulting on debt; we cannot assume anything about the impact of quantitative easing on asset prices.

As the economic strains of high debt levels intensify, then so will the asset price volatility in response to increases in asset focussed money supply.

Quantitative easing is an imperative both to support the financial and economic system and to allow the economy to grow out of its debt problems: QE may be a fact of life for many more years to come, but the dynamics may not be so uniformly projected (note impact of debt defaults on asset focussed money supply growth and overall weakness in money supply growth rates).

Confidence in QE (rising prices of risky assets), combined with slow improvement of the world economy, appears to have positively impacted consumer and investor confidence as noted by relative stability of both consumption and risky asset markets. But it will be a long haul before the world economy has made the necessary transition, and the transition will not be a uniform one. The risks remain elevated and extreme.

# References, resources and links

---

BIS - Fiscal sustainability in the industrial countries: risks and challenges  
<http://www.bis.org/publ/arpdf/ar2010e5.pdf>

U.S.-Latin America Trade: Recent Trends and Policy Issues – June 2010 <http://www.fas.org/sqp/crs/row/98-840.pdf>

THE ANDEAN TRADE PREFERENCES AND DRUG ERADICATION ACT: ECONOMIC IMPACT IN THE UNITED STATES AND THE ANDEAN COUNTRIES – July 2010  
<http://www.iadb.org/intal/intalcdi/PE/2010/07496.pdf>

Institute of the Americas - Latin America's economic growth spurred by exports to China -  
<http://www.iamericas.org/en/china-past-event/1499-latin-americas-economic-growth-spurred-by-exports-to-china>

Nomura Global Economics – The Ascent of Asia – February 2010  
<http://www.nomura.com/europe/resources/pdf/nomura%20-%20the%20ascent%20of%20asia.pdf>

The Growth of China and India in World Trade: Opportunity or Threat for Latin America and the Caribbean? August 2007 - [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1007353](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1007353)

The impact of China's global economic expansion on Latin America – University of East Anglia -  
<http://www.uea.ac.uk/dev/faculty/Jenkins/china-latinamerica>

Latin America faces the Chinese Dragon: Opportunities, Challenges and Responses – University of East Anglia - April 2009 – [http://www.uea.ac.uk/polopoly\\_fs/1.113466!ChinaBriefing\\_8pp.pdf](http://www.uea.ac.uk/polopoly_fs/1.113466!ChinaBriefing_8pp.pdf)

Changing Commercial Policy in Japan During 1985-2010 – ADBI Institute - <http://www.adbi.org/working-paper/2010/11/19/4220.changing.commercial.policy.japan/>

Asia's Post-Global Financial Crisis Adjustment: A Model-Based Dynamic Scenario Analysis – ADBI Institute -  
<http://www.adbi.org/working-paper/2010/11/22/4224.asia.post.gfc.adjustment/>

Domestic-Demand-Led Economic Growth: Japan's Lessons Learned – Japan MOF -  
[http://www.mof.go.jp/jouhou/sokei/kouryu/kou96/kou96\\_06.pdf](http://www.mof.go.jp/jouhou/sokei/kouryu/kou96/kou96_06.pdf)

WTO Short term trade merchandise statistics – Q43 2010  
[http://www.wto.org/english/news\\_e/news10\\_e/stts\\_01dec10\\_e.htm](http://www.wto.org/english/news_e/news10_e/stts_01dec10_e.htm)

World Trade Report 2008: Trade in a Globalising World -  
[http://www.wto.org/english/res\\_e/booksp\\_e/anrep\\_e/world\\_trade\\_report08\\_e.pdf](http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report08_e.pdf)

Production Networks and Trade Patterns: East Asia in a Global Context  
[http://rspas.anu.edu.au/economics/publish/papers/wp2009/wp\\_econ\\_2009\\_15.pdf](http://rspas.anu.edu.au/economics/publish/papers/wp2009/wp_econ_2009_15.pdf)

Shopaholics wanted - <http://www.economist.com/node/13900125>

Middle Class in Asia <http://www.ftkmc.com/newsletter/Vol1-24-aug30-2010.pdf>

Credit Suisse Global Wealth Databook October 2010

International Production Networks in Machinery Industries: Structure and Its Evolution\*  
<http://www.eria.org/pdf/ERIA-DP-2010-09.pdf>

Domestic-Demand-Led Economic Growth: Japan's Lessons Learned  
[http://www.mof.go.jp/jouhou/soken/kouryu/kou96/kou96\\_06.pdf](http://www.mof.go.jp/jouhou/soken/kouryu/kou96/kou96_06.pdf)

On East Asian Production Network <http://www.malaysian-chinese.net/publication/articlesreports/articles/1004.html>

The Determinants of Bilateral FDI: Is Asia Different?  
<http://people.brandeis.edu/~ppetri/petri%20FDI%20and%20technology%20mar09.pdf>

The Determinants of Bilateral FDI: Is Asia Different? <http://www.globality-gmu.net/archives/2248>

Asia and Pacific Consolidating the Recovery and Building Sustainable Growth - October 2010  
<http://www.contexto.org/pdfs/IMFasiareport.pdf>

The Global Economic Crisis: An Opportunity for Strengthening Asia's Social Protection Systems?  
<http://www.adbi.org/files/2010.02.23.wp198.gec.asia.social.protection.systems.pdf>

Social Security Programs Throughout the World: Asia and the Pacific, 2008  
<http://www.socialsecurity.gov/policy/docs/progdesc/ssptw/2008-2009/asia/index.html>

Dynamic Social Security for Asia and the Pacific: Integrated Responses for More Equitable Growth -  
<http://www.issa.int/Resursy/ISSA-Publications/Dynamic-Social-Security-for-Asia-and-the-Pacific-Integrated-Responses-for-More-Equitable-Growth>

What lessons from the 1930s? <http://www.ceps.eu/files/book/1839.pdf>

Speech by MERVYN KING GOVERNOR OF THE BANK OF ENGLAND BLACK COUNTRY CHAMBER OF COMMERCE, WEST MIDLANDS on Tuesday 19 October 2010  
<http://www.bankofengland.co.uk/publications/speeches/2010/speech454.pdf>

Global Wage Report 2010/11 ILO -  
[http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms\\_145265.pdf](http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_145265.pdf)

(Germa) National Accounts and Economic Statistics - International Trade Statistics  
<http://www.oecd.org/dataoecd/60/7/37342897.pdf>

A Short History of Financial Deregulation in the United States <http://www.openthegovernment.org/otg/dereg-timeline-2009-07.pdf>

Growth in a Time of Debt - [http://www.economics.harvard.edu/faculty/rogooff/files/Growth\\_in\\_Time\\_Debt.pdf](http://www.economics.harvard.edu/faculty/rogooff/files/Growth_in_Time_Debt.pdf)

Earnings Growth: The Two Percent Dilution [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=489602](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=489602)

Import content of exports [http://www.iioa.org/pdf/16th%20Conf/Papers/Bleses%20lm\\_content\\_of\\_Ex.pdf](http://www.iioa.org/pdf/16th%20Conf/Papers/Bleses%20lm_content_of_Ex.pdf)

THE IMPORT CONTENT OF EXPORTS A BRITISH COLUMBIA PERSPECTIVE  
[http://www.bcstats.gov.bc.ca/data/bus\\_stat/busind/trade/ICE2008.pdf](http://www.bcstats.gov.bc.ca/data/bus_stat/busind/trade/ICE2008.pdf)

Foreign Direct Investment and Affiliate Activities  
[http://www.nap.edu/openbook.php?record\\_id=11612&page=13](http://www.nap.edu/openbook.php?record_id=11612&page=13)

The Debt Deflation Theory of Great Depressions - Irving Fisher -  
<http://fraser.stlouisfed.org/docs/meltzer/fisdeb33.pdf>

PwC projects total UK public and private debt to hit £10 trillion by 2015  
<http://www.ukmediacentre.pwc.com/News-Releases/PwC-projects-total-UK-public-and-private-debt-to-hit-10-trillion-by-2015-f84.aspx>

The end game approaches <http://ftalphaville.ft.com/blog/2010/10/20/376441/the-end-game-approaches/>

ECB Monthly Bulletin October 2010 <http://www.ecb.int/pub/pdf/mobu/mb201010en.pdf>

ECB Bulletin Monthly November - <http://www.ecb.int/pub/pdf/mobu/mb201011en.pdf>

Debt and Deleveraging: The Global Credit Bubble and its economic consequences -  
[http://www.mckinsey.com/mgi/reports/freepass\\_pdfs/debt\\_and\\_deleveraging/debt\\_and\\_deleveraging\\_full\\_report.pdf](http://www.mckinsey.com/mgi/reports/freepass_pdfs/debt_and_deleveraging/debt_and_deleveraging_full_report.pdf)

Economist Special Report on Debt - [http://www.economist.com/node/16397110?story\\_id=16397110](http://www.economist.com/node/16397110?story_id=16397110)

OECD / Korea Policy Centre (2009), Society at a Glance – Asia/Pacific Edition  
<http://www.oecd.org/dataoecd/40/45/43630703.pdf>

China in the 2010s Rebalancing Growth and Strengthening Social Safety Nets  
<http://www.oecd.org/dataoecd/4/21/44878634.pdf>

Debt reduction after crises1 [http://www.bis.org/publ/qtrpdf/r\\_qt1009e.pdf](http://www.bis.org/publ/qtrpdf/r_qt1009e.pdf)

Bank of France Statistical Supplement November 2010 - <http://www.banque-france.fr/gb/publications/telechar/bulletin/quarterly-selection-of-articles-statistical-supplement-november-2010.pdf>

Indebtedness of non-financial corporations in France: a rise fuelled by credit growth, underpinned by buoyant LBO activity <http://www.banque-france.fr/gb/publications/telechar/bulletin/159focus.pdf>

Import content of exports (FSO Germany) -  
[http://www.iioa.org/pdf/16th%20Conf/Papers/Bleses%20Im\\_content\\_of\\_Ex.pdf](http://www.iioa.org/pdf/16th%20Conf/Papers/Bleses%20Im_content_of_Ex.pdf)

What Level of Public Debt Could India Target? - <http://www.imf.org/external/pubs/ft/wp/2010/wp1007.pdf>

B of E - Trends in Lending – October 2010 -  
<http://www.bankofengland.co.uk/publications/other/monetary/TrendsOctober10.pdf>

China's Economic Statistics - <http://www.uschina.org/statistics/economy.html>

Chanos vs. China <http://finance.fortune.cnn.com/2010/11/17/chanos-vs-china/>

Exports of goods and services (% of GDP) <http://data.worldbank.org/indicator/NE.EXP.GNFS.ZS>

German outward FDI and its policy context  
[http://www.vcc.columbia.edu/files/vale/documents/German\\_OFDI\\_Profile\\_9\\_April\\_2010\\_0.pdf](http://www.vcc.columbia.edu/files/vale/documents/German_OFDI_Profile_9_April_2010_0.pdf)

German Exporters Amid the Global Recovery [http://www.rsmi.com/attachments/approved/german-exporters/en/Germanexportersamidtheglobalrecovery\\_july2010.pdf](http://www.rsmi.com/attachments/approved/german-exporters/en/Germanexportersamidtheglobalrecovery_july2010.pdf)

Mapping the Match between UK Exports and Demand in Emerging Markets:  
<http://www.sas.upenn.edu/~afieler/EFSReport.pdf>

Germany's Export Dependence - <http://www.imf.org/external/pubs/ft/fandd/2010/09/berger.htm>

Germany: Rebalancing under way as the upswing keeps momentum  
[http://ec.europa.eu/economy\\_finance/eu/forecasts/2010\\_autumn/de\\_en.pdf](http://ec.europa.eu/economy_finance/eu/forecasts/2010_autumn/de_en.pdf)

GERMANY'S GROWTH POTENTIAL, STRUCTURAL REFORMS AND GLOBAL IMBALANCES  
[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP\(2010\)36&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2010)36&docLanguage=En)

Asia and Pacific Consolidating the Recovery and Building Sustainable Growth  
<http://www.imf.org/external/pubs/ft/reo/2010/apd/eng/areo1010.pdf>

China Data IMF - [http://www.imf.org/external/pubs/ft/reo/2009/apd/eng/data/fig\\_box3\\_2.pdf](http://www.imf.org/external/pubs/ft/reo/2009/apd/eng/data/fig_box3_2.pdf)

Gross national income per capita 2009, Atlas method and PPP  
<http://siteresources.worldbank.org/DATASTATISTICS/Resources/GNIPC.pdf>

Export Dependence and the Future of Growth in China and East Asia  
[http://www.southcentre.org/index.php?option=com\\_content&view=article&id=1339%3Asb48&catid=144%3Asouth-bulletin-individual-articles&Itemid=287&lang=en](http://www.southcentre.org/index.php?option=com_content&view=article&id=1339%3Asb48&catid=144%3Asouth-bulletin-individual-articles&Itemid=287&lang=en)

ASIA ECONOMIC MONITOR DECEMBER 2010 - [http://aric.adb.org/pdf/aem/dec10/Dec\\_AEM\\_complete.pdf](http://aric.adb.org/pdf/aem/dec10/Dec_AEM_complete.pdf)

Household debt: implications for monetary policy and financial stability  
<http://www.bis.org/publ/bppdf/bispap46.pdf>

How Much of Chinese Exports Is Really Made in China? Assessing Foreign and Domestic Value-Added in Gross Exports  
[http://www.usitc.gov/publications/332/working\\_papers/ec200803b\\_revised.pdf](http://www.usitc.gov/publications/332/working_papers/ec200803b_revised.pdf)

A truer picture of China's export machine -  
[https://www.mckinseyquarterly.com/Risk/Corporate\\_Risk/A\\_truer\\_picture\\_of\\_Chinas\\_export\\_machine\\_2676](https://www.mckinseyquarterly.com/Risk/Corporate_Risk/A_truer_picture_of_Chinas_export_machine_2676)

ASIAN DEVELOPMENT Outlook 2010 - <http://www.adb.org/documents/books/ado/2010/Update/ado2010-update.pdf>

Hedge fund manager Mark Hart bets on China as the next 'enormous credit bubble' to burst  
<http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/8166440/Hedge-fund-manager-Mark-Hart-bets-on-China-as-the-next-enormous-credit-bubble-to-burst.html>

China's non-appearing rate hike - <http://ftalphaville.ft.com/blog/2010/12/13/434596/chinas-non-appearing-rate-hike/>

The Chinese consumer awakens <http://www.reuters.com/article/idUSTRE6B81BV20101209?pageNumber=3>

Debate: Workers' income [http://www.china.org.cn/opinion/2010-11/08/content\\_21294614.htm](http://www.china.org.cn/opinion/2010-11/08/content_21294614.htm)

Household Consumption Trends in China <http://www.rba.gov.au/publications/bulletin/2010/mar/3.html>

Economic Change in India <http://www.rba.gov.au/publications/bulletin/2010/sep/3.html>

China's Rise to Top Looks Unstoppable <http://www.nytimes.com/2010/08/17/business/global/17inside.html>

China Tells: Investor's Portal to China <http://blog.chinatells.com/category/bear-china>

U.S. state pension funds have \$1 trillion shortfall: Pew  
<http://www.reuters.com/article/idUSTRE61H13X20100218>

Academics point to \$900bn-plus hole in US teacher funds <http://www.efinancialnews.com/story/2010-04-14/us-teachers-fund-deficit>

Pension Plan Deficits – The Impact On US Corporations  
<http://www.financierworldwide.com/article.php?search&id=4072>

Third of FTSE firms plagued by pension fund deficits <http://www.guardian.co.uk/money/2010/aug/31/ftse-firms-pension-fund-deficits>

Hugh Hendry: short China, via Japan <http://ftalphaville.ft.com/blog/2010/10/05/361061/hugh-hendry-short-china-via-japan/>

Little of China's Exports To The US Is Retained As Income in China  
[http://www.southcentre.org/index.php?option=com\\_content&view=article&id=1338%3AAsb48&catid=144%3Asouth-bulletin-individual-articles&Itemid=287&lang=en](http://www.southcentre.org/index.php?option=com_content&view=article&id=1338%3AAsb48&catid=144%3Asouth-bulletin-individual-articles&Itemid=287&lang=en)

World Investment Report Division on Investment and Enterprise  
<http://www.unctad.org/Templates/Page.asp?intItemID=1465&lang=1>

Global Economic Prospects: The Recession May Be Over But Where Next?  
[http://www.southcentre.org/index.php?option=com\\_content&view=article&id=1250%3Aglobal-economic-prospects-the-recession-may-be-over-but-where-next&catid=142%3Aglobal-financial-and-economic-crisis&Itemid=67&lang=en](http://www.southcentre.org/index.php?option=com_content&view=article&id=1250%3Aglobal-economic-prospects-the-recession-may-be-over-but-where-next&catid=142%3Aglobal-financial-and-economic-crisis&Itemid=67&lang=en)

Faster productivity growth will be an important part of rich economies' revival  
<http://www.economist.com/node/17173903>

World Investment Report 2010 - [http://www.unctad.org/en/docs/wir2010\\_en.pdf](http://www.unctad.org/en/docs/wir2010_en.pdf)